Nicole Gröne

Targeted Advertising and Consumer Privacy Concerns

Experimental Studies in an Internet Context
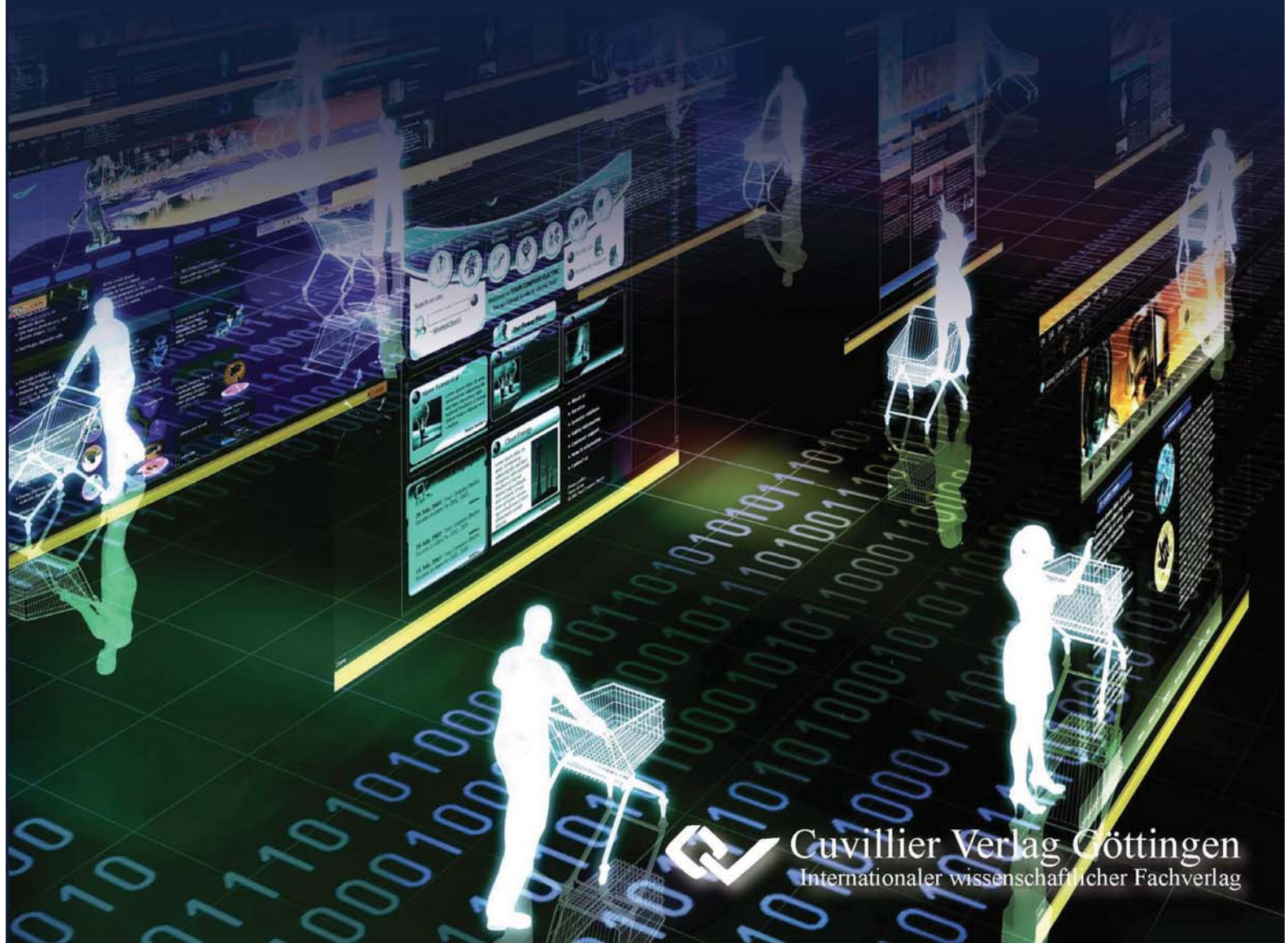
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Targeted Advertising and Consumer Privacy Concerns
Experimental Studies in an Internet Context

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Vollständiger Abdruck der von der Fakultät für Wirtschaftswissenschaften der Technischen Universität München zur Erlangung des Grades eines **Doktors der Wirtschaftswissenschaften (Dr. rer. pol.)** genehmigten Dissertation.

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Preface

As a student of Business Administration, I spent a year in San Francisco and experienced the great level of entrepreneurship and innovation the internet brought about. As much as I had been enjoying the great number of new free online services, I was shocked a couple of years later when I heard that the local newspaper might have to shut down due to a decline in print circulation which the advertising revenues of its online edition could not compensate for. It made me realize that the prevalent newspaper crisis which entailed a reduction of journalistic staff and a decline in high quality news coverage as a result of consumers' switch to free online alternatives might be one of the greatest challenges of modern information society.

At about the same time, I was working as a consultant on marketing projects and learned about new targeting technologies to run online advertising campaigns more efficiently. As an online user myself, I certainly wondered about the privacy challenges of online targeting. At the same time, I acknowledged that this technology might help free content websites to increase their advertising revenues and thus create a viable business model. This is how I developed a genuine interest in exploring ways to employ targeted advertisements while addressing consumers' legitimate desire for information privacy.

I would like to thank Professor Florian von Wangenheim, Chair of Services and Technology Marketing at the Technical University of Munich, for giving me the opportunity to pursue my academic interest in the field of online marketing and consumer privacy. Florian has not only been a great doctoral thesis supervisor, but also encouraged me to truly immerse into academic life by participating in international conferences, writing academic articles, and participating in the numerous activities of his chair. These activities did not only include weekly research meetings as well research outings at the foothills of the Alps, but also legendary summer parties in his garden.

In this context, I would also like to express my gratitude to the staff of the Chair of Services and Technology Marketing, in particular the other (former) research associates Sebastian Ackermann, Armin Arnold, Christoph Baumeister, Christine Geser, Christian Heumann, Dr. Sabine Mayser, Anne Scherer, Dr. Nancy Wünderlich, and Marcus Zimmer for welcoming me as external doctoral candidate and conducting stimulating discussions. My special thank goes to Prof. Dr. Jan Schumann for providing valuable input to my research and pushing further related research projects forward after my completion of this dissertation. I would also like to thank the fellow external doctoral candidates Felix Frank, Sebastian Klapdor, Patrick Rohrmeier, and Fabian Uhrich for the continuous experience and best-practice sharing.

My gratitude also goes to my cooperation partner—a large German advertising network. While respecting the confidentiality agreement, I would like to emphasize my thankfulness for fruitful discussions and for enabling this research by running a large-scale field experiment on two websites.

Working as a management consultant, I gratefully acknowledge the possibility to go on educational leave in order to write my PhD thesis. In this context, I would also like to mention my friends in the "Fellow-in-Leave Community" in Munich. Without them and the free lunches in the office (although there is of course no such thing as a free lunch) writing this dissertation would not have been nearly as enjoyable as it has been.

Finally, my special appreciation goes to my parents for their ongoing support and providing me a platform to pursue my professional and academic career. My deepest thank goes to my husband Fabian for his unfailing love, encouragement, and optimism at any time.

<div align="right">Nicole Gröne</div>

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List of Abbreviations

Ad	Advertisement
ADF	Asymptotic distribution free
ANOVA	Analysis of variance
API	Application programming interface
approx.	approximately
ASP	Application service provider
Att_{Ad}	Attitude toward an advertisement
Att_B	Attitude toward the advertised brand
AVE	Average variance extracted
BT	Behavioral targeting
BDSG	Federal Data Protection Act (Bundesdatenschutzgesetz)
BVDW	Association of the German digital industry (Bundesverband Digitale Wirtschaft)
CBSEM	Covariance-based structural equation modeling
CFA	Confirmatory factor analysis
CFI	Comparative Fit Index
CFIP	Concern for information privacy
CM	Communality
CMB	Common method biases
CMF	Common method factor
COPPA	Children's Online Privacy Protection Act
CPA	Cost per action
CPC	Cost per click
CPM	Cost per mile (cost per thousand)
CPS	Cost per sale
C's α	Cronbach's alpha
CR	Click rate
CRM	Customer relationship management
d.f.	Degrees of freedom
ECPA	Electronic Communications Privacy Act

EFA	Exploratory factor analysis
e.g.	exempli gratia (for example)
ELM	Elaboration likelihood model of persuasion
EU	European Union
FR	Factor reliability
FTC	Federal Trade Commission
GLS	Generalized least squares
H	Hypothesis
HTML	Hypertext markup language
i.e.	Id est (that is)
IAB	Interactive Advertising Bureau
IR	Indicator reliability
IS	Information systems
ISCT	Integrative social contracts theory
IUIPC	Internet users' information privacy concern
LSO	Local shared objects
MANCOVA	Multivariate analysis of covariance
ML	Maximum likelihood
N	Sample size
n.a.	Not applicable
n.s.	Not significant
OPA	Online Privacy Alliance
P	probability
p.	page
OVK	Association of German publishers and advertising networks (Online-Vermarkterkreis)
P3P	Platform for Privacy Preferences
Para.	Paragraph
PI	Page impressions
PII	Personally identifiable information
PS	Privacy statement(s)

XVI

reg.	regarding
RMSEA	Root Mean Square Error of Approximation
RR	Response rate
SEM	Search engine marketing (sense 1)
SEM	Structural equation modeling (sense 2)
SCT	Social contract theory
SD	Standard deviation
sect.	Section
SET	Social exchange theory
SLS	Scale free least squares
SOR	Stimulus-organism-response
SR	Stimulus-response
TKG	Telecommunications Act (Telekommunikationsgesetz)
TLI / NNFI	Tucker Lewis Index / Non-normed Fit Index
TMG	Telemedia Act (Telemediengesetz)
ULD	Data protection agency in the state of Schleswig-Holstein (Unabhängiges Landeszentrum für Datenschutz)
ULS	Unweighted least squares
URL	Uniform resource locator
U.S.	United States of America
vs.	Versus
XML	Extensible markup language

List of Symbols

B	Beta (regression coefficient)
Δ	Delta (value difference)
η^2	Eta-square (variance explained within MANCOVA)
θ_j	Theta (estimated variance of the measurement error within SEM)
λ_i	Lambda (estimated factor loading within SEM)
Ξ	Xi (latent construct)
Φ	Phi (estimated variance of a latent variable within SEM)
χ^2	Chi-square (value of Chi-square test statistic)

Summary

The rush of marketing expenditures in the Internet has made effectiveness and efficiency increasingly relevant. In particular, online firms offering free content need to provide powerful marketing tools to advertisers to support their own business models. Behavioral targeting enables websites to selectively display advertisements to consumers according to their surfing profiles, making advertisements more relevant, and thereby increasing advertising revenues from websites. Consequently, it is often seen as a savior by online firms struggling to finance their free content. However, targeting can raise privacy concerns, leading to negative consumer reactions. Furthermore, there is increasing regulatory pressure for websites to inform surfers about targeting practices and provide them with opt-in or opt-out functions. Proactively addressing those challenges to sustain revenues from targeted advertising is highly important—in particular for advertising-supported websites—and requires systematic research. Such research, though, has to account for the fact that the profiling of consumers to increase advertising revenues raises ethical questions, especially because targeting often occurs without consumers' knowledge.

This doctoral dissertation studies consumer privacy concerns with regard to online targeting practices. Specifically, it investigates how privacy concerns affect consumers' perceptions of targeted advertisements. Furthermore, building on social exchange theory, fairness norms, and previous research on consumer privacy concerns in related areas, such as direct mail and e-commerce, I develop tangible, managerial operational mechanisms to increase consumers' acceptance of targeting and improve consumers' perceptions of targeted advertisements. In order to ensure that these mechanisms are in line with principles of business ethics, I derive normative requirements for these mechanisms from integrative social contracts theory.

I test these mechanisms and explore the related cognitive processes in two experimental studies – a laboratory and a large-scale field experiment on two popular German websites.[1] First, I find that under certain conditions, surfers are highly motivated by reciprocity. Specifically, when reminded that targeted online advertisements support free content and when asked to voluntarily reciprocate the website for providing its free content, consumers do not only more readily consent to targeting, but also perceive targeted advertisements as less intrusive. The effect of appealing to reciprocity on consumers' acceptance of targeting is driven by consumers' desire for distributive justice. It is not—as one might believe—driven by selfish motives, such as the expectation of receiving free content in the future. Second, in contrast to the current industry practice, I find that informing consumers that targeting makes advertisements they see on the Internet more interesting to them does not have any significant effect. This finding shows that there is currently great potential for the online advertising industry to change the way it promotes and justifies targeting to consumers. Finally, I find that providing consumers with a high level of control over their information not only increases their perceptions of procedural justice, but also reduces privacy concerns, increases trust, and thus the acceptance of targeting. As such, my research suggests that it is advisable to allow consumers to access and edit the anonymous profiles stored in their cookies—a practice currently followed by very few websites and advertising networks.

Overall, this doctoral dissertation contributes to a very new academic research field studying targeted online advertising and consumer privacy concerns. In contrast to previous studies, which have all described the challenges related to privacy concerns, this study focuses on reconciling consumers' legitimate desire to protect their privacy and the interests of the Internet industry which requires powerful marketing tools. Thus, from a practical perspective, this dissertation

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[1] The cooperation partner was assured confidentiality, which is why I do not report the names of the websites involved in the experiment.

identifies mechanisms for websites in general and for 'free content' websites in particular to sustain or even increase their advertising revenues. As such, my findings may help advertising-supported online businesses to keep their services free of charge and thereby to sustain the consumer surplus they generate. Through the combination of real behavioral and self-reported data, the findings are particularly robust and might further stimulate the debate on consumer privacy, advertising effectiveness, and the financing of free content among academics, practitioners, and regulators.

1.   Introduction

1.1   Targeting as a Controversial Means to Increase Advertising Revenues

> *"Half of the money I spend on advertising is wasted and*
> *the trouble is, I don't know which half."*
> *– John Wanamaker* [2]

Within the marketing mix, the Internet is becoming increasingly important. The Internet already constitutes the second largest advertising medium after TV, and while advertising revenues from traditional media have stagnated, online advertising revenues are expected to grow continuously (Interactive Advertising Bureau 2011). The rise of the Internet and online marketing expenditures has fueled a new area of entrepreneurship and the formation of a "free online services" industry used by billions of people. Some of those businesses offer an entirely new type of service to consumers, such as online communities, search engines, and online messaging. Other free services complement or substitute for existing offline services such as news websites, price comparison portals, and route planners. Nearly all of those businesses depend on advertising revenues in order to be able not to charge their visitors for using their websites (Chickering and Heckerman 2003). A study commissioned by the Interactive Advertising Bureau (IAB) estimates the 2010 consumer surplus generated by advertising-supported Internet business models in the U.S. and in 19 European countries[3] to account for 100 billion EUR. On average, this is nearly 40 EUR per online household per month (Interactive Advertising Bureau 2010a).

However, many of those free content business models are struggling financially. Newspapers especially have difficulties replacing their declining sales and print advertising revenues with online advertising revenues (Spiegel Online 2009; Szoka 2009). Prices to advertise online, often denoted as cost per mile (CPM), are usually lower than traditional media CPM. In this context, online display advertising is also often claimed to have an effectiveness problem, having lost its

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[2] U.S. department store owner of the 19th century.

[3] France, Germany, Russia, Spain, UK, Bulgaria, Croatia, Denmark, Finland, Greece, Hungary, Italy, Netherlands, Poland, Romania, Slovakia, Sweden, Switzerland, Turkey

ability to attract attention and interest (Bhatnagar and Papatla 2001). Results from eye tracking studies show that people avoid looking at banner ads. While 97 percent of viewers look at TV advertisements (ads), only 50 percent of online surfers look at banner ads displayed to them (Drèze and Hussherr 2003). Click-through rates of online advertisements usually fall below .8 percent (Dahlen 2001; Manchanda et al. 2006). Thus, companies that advertise on the Internet increasingly request more effectiveness and efficiency, which creates price pressure for websites offering advertising space (Manchanda et al. 2006). Therefore, particularly online firms offering free content need to provide powerful marketing tools to advertisers to be able to sustain their own business models.

Behavioral targeting has recently emerged as a major trend within online marketing. It is predicted to account for one-fourth of total U.S. display advertising revenues by 2012 (Hallerman 2008). Behaviorally targeted advertising aims at making advertisements more relevant to surfers by increasing the correspondence between users' interests and the ads displayed to them (Hof 2008; Kazienko and Adamski 2007). This is a substantial innovation of media planning, which has traditionally consisted in placing advertisements on websites based on their audiences' demographics (Kazienko and Adamski 2007). Although for many years marketers have argued that activities, interests, and opinions can be much more effective than demographics in understanding consumers (e.g., Cunningham and Crissy 1972; Dutta-Bergman 2006; Plummer 1974; Weinstein 1987), media planning based on demographics has been carried out due to a lack of viable alternatives. Targeted advertising now enables advertisers to target consumers based on different criteria, because through behavioral targeting, websites can create anonymous surfer profiles comprising their supposed interests and characteristics. This is typically achieved by placing cookies in surfers' web browsers tracking their online surfing behavior. The resulting anonymous surfer profiles are mostly generated and employed across many different websites, which are usually organized in advertising networks such as the Google advertising network, the Yahoo network, or Germany's Ad Audience. Based on those behavioral profiles and with the help of modern advertising delivery

systems, a website can then exclusively display an advertisement to a specific consumer segment (Chickering and Heckerman 2003; Szoka 2009). Studies sponsored by targeting firms report substantial increases in click rates of up to 1000 percent through behavioral targeting (e.g., Yan et al. 2009). Thus, the selective delivery of display ads reduces waste on the part of the advertiser and allows websites to charge higher prices for advertisements displayed to their visitors (Chickering and Heckerman 2003; Iyer, Soberman, and Villas-Boas 2005).

However, whereas targeting has emerged as a promising tool for websites to better monetize their content, it appears that consumers predominantly reject it. Recent academic studies find that most consumers are concerned about their privacy with regard to behavioral targeting (Alreck and Settle 2007; McDonald and Cranor 2010). In a survey by the University of Pennsylvania, 66 percent of American adults indicated they did not want marketers to tailor advertisements to their interests (Turow et al. 2010). Alreck and Settle (2007) report that more than half of online surfers believe that online tracking should be illegal. With regard to existing marketing-related privacy literature, these findings suggest that targeting entails risks to marketers because, in general, privacy concerns can lead to harmful consumer reactions, such as website avoidance or negative word of mouth (e.g., Chellappa and Sin 2005; Sheehan and Hoy 1999; Wirtz and Lwin 2009). Therefore, for marketers and publishers employing behavioral targeting, it is indispensable to find ways to mitigate consumers' rejection of behavioral targeting.

Doing so is also highly advisable in light of increasing pressure for privacy regulations. Member states of the European Union are currently implementing the so-called e-Privacy Directive 2009/136/EC (European Union 2009) into national laws, which contain requirements regarding consumers' opt-in for specific targeting practices. In the U.S., the Federal Trade Commission (FTC) is currently promoting a so-called "Do Not Track" proposal, which suggests the installation of a nationwide opt-out tool through which consumers can restrict the collection of information about their web browsing behavior (Federal Trade Commission

2010). Considering that a study conducted by New Media Age (Bearne 2009b) found that 72 percent of online surfers favored opting-out of receiving targeted online advertising such regulation would most likely lead to a drop in advertising revenues if websites do not find mechanisms to mitigate consumers' rejection or, conversely, increase their acceptance of targeting.

Overall, considering that targeting is a major trend within online marketing, there is a striking lack of research on how to reconcile the interests of the Internet industry and consumers' interests. In fact, those interests are not necessarily opposing. While consumers appear to dislike targeting due to privacy concerns, they also do not want to pay for online content or services (Dou 2004; Pauwels and Weiss 2005). Therefore, developing mechanisms to increase consumers' acceptance of targeting as an "alternative online currency" supporting free content appears to be in the best interest of both consumers and online firms.[4]

1.2 Research Scope

Constructive research in the field of online targeting and consumer privacy concerns is necessary to sustain and improve the usability of targeted advertising as a powerful marketing tool and as a means to improve revenues from websites. Targeted advertising is an extremely new research field. The first isolated articles on targeted advertising in marketing and IS journals were published starting in the middle of the first decade of the 2000s (e.g., Alreck and Settle 2007; Iyer, Soberman, and Villas-Boas 2005). The past two years have seen a sudden growth of journal articles and working papers on targeted advertising (e.g., Dwyer 2011; Goldfarb and Tucker 2011a, 2011b; Lambrecht and Tucker 2011; McDonald and Cranor 2009, 2010; Tucker 2011; Turow et al. 2010), several of which were published in high-profile journals and presented at renowned international scientific conferences, which demonstrates the high relevance of the topic.

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[4] Of course, targeting is not only an issue in the context of free online content and services. However, most content websites rely on advertising revenues as primary source of income, which I will further elaborate in section 2.1. Therefore, in addition to reducing waste of advertising budget, targeting serves the important indirect function of funding (free) online content—a function, that is central to the motivation and the research model of this dissertation.

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However, so far, the main focus of research has been on survey-based studies describing consumer privacy concerns vis-à-vis targeted advertising (e.g., Dwyer 2011; McDonald and Cranor 2009, 2010; Turow et al. 2010) and the related challenges for marketers and websites (e.g., Goldfarb and Tucker 2011a; Tucker 2011). In fact, in a groundbreaking study on targeting and obtrusiveness of display advertisements, Goldfarb and Tucker (2011a) suspect that privacy concerns might negatively affect advertising effectiveness. However, their data are purely observational and do not allow validating this assumption by studying consumers' cognitive processes. Also, their study refers to contextual targeting, i.e., matching an advertisement to the context of a website, which can be considered less privacy intrusive than behavioral targeting. Consequently, the cognitive mechanisms related to privacy concerns, consumers' attitude toward targeting, and advertising effectiveness are currently not well understood. Therefore, in recent commentaries on their article, several researchers, including Goldfarb and Tucker themselves, stress the importance of research on the underlying cognitive mechanisms regarding advertising effectiveness and potential privacy concerns (Goldfarb and Tucker 2011b; Lodish and Reed II 2011). While no study has investigated how privacy concerns affect consumers' perceptions of targeted ads, there is an even more striking lack of research on how marketers can address consumers' privacy concerns and increase the acceptance of behavioral targeting in order to avoid potential harmful consequences. In fact, while the challenges related to targeting have received increasing academic attention this aspect that has been neglected in the burgeoning scholarly discussion on privacy and online advertising so far.

To fill this research gap, related research areas provide some direction. In customer relationship management (CRM), public policy, and information systems (IS) research, the issue of personalized marketing[5] and consumer privacy concerns has received substantial academic attention. Several studies have explored factors affecting consumers' provision of information for personalized

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[5] Please note that personalization and targeting are two distinct, but related, marketing practices. With both requiring consumer information, targeting refers to selectively displaying advertisements to specific consumer segments whereas personalization also implies changing the content of advertisements based on user profiles (see also section 2.1.2).

marketing in the context of direct mail (e.g., Milne and Gordon 1993; Phelps et al. 2000) and e-commerce (e.g., Hui et al. 2007; Ward, Bridges and Chitty 2005). Assuming that consumers perform a utilitarian cost-benefit trade-off with regard to their privacy (e.g., Chellappa and Sin 2005; Xie, Teo, and Wan 2006), these studies found that in addition to sufficient privacy protection, consumers require benefits in exchange for providing information, such as financial rewards including coupons or discounts (e.g., Hann et al. 2007; Hui, Teo, and Lee 2007; Milne and Gordon 1993). However, the applicability of these findings in the context of targeted advertising is limited, because providing consumers with monetary benefits is hardly implementable on non-e-commerce websites, and even more important, doing so would further reduce net advertising revenues from websites.

Instead, applying findings from social psychology to the context of targeted advertising and free content websites appears highly suitable, because previous research has shown that they can be very powerful in marketing. For example, research in the context of pay-what-you-want pricing mechanisms has shown that due to fairness considerations, consumers voluntarily pay something for a service received, even if they do not have to (Kim, Natter, and Spann 2009). Given that, for example, members of the Online Publisher Alliance, including The New York Times, The Wall Street Journal, Time Inc., and ESPN, alone invested 500,000 million USD in the creation of content (Mickey 2008), it is surprising that this finding has not yet been applied to the context of free online content and the acceptance of (targeted) advertising. Against this background, I complement the common economic utilitarian perspective on factors to increase consumers' acceptance of personalized or targeted advertising with a social psychological perspective which includes perceptions of fairness and reciprocity. By doing so, I also advance existing consumer behavior research in an Internet context which explores consumers' so-called online "free mentality" (e.g., Dou 2004).

Like any research project, research on mechanisms to increase the acceptance of targeting should be in line with marketing ethics. However, as information privacy constitutes a highly sensitive issue that is of great concern to individuals, I

believe it is particularly important to explicitly define normative requirements that targeted advertising needs to fulfill. In fact, the financial and world economic crisis of 2008/09 has succinctly shown that respecting ethical standards is an important cornerstone of the stability of our market economy. Not every action that is technically legal is ethically justifiable. This holds particularly true in areas that are shaped by numerous and frequent technological and product innovations that often outpace legislation, such as online marketing and consumer privacy. Thus, for free market agents such as online firms to act responsibly, it is important to have some clear guidelines. Integrative social contracts theory (ISCT) constitutes a theory of business ethics that can be applied to a wide range of marketing issues (Dunfee, Smith, and Ross 1999). As consumers' privacy concerns are closely related to fairness perceptions (Ashworth and Free 2006; Culnan and Armstrong 1999), ISCT is particularly apt for studying targeted advertising because it allows incorporating social (fairness) norms as ethical decision guidelines (Dunfee, Smith, and Ross 1999; Donaldson and Dunfee 1994).

Against this background, the research objectives of this doctoral thesis are as follows:

1. To examine how privacy concerns related to targeting practices affect consumers' perceptions of targeted advertisements, a proven mediator of advertising effectiveness.

2. To identify and test mechanisms which increase the acceptance of targeted advertising and meet normative requirements as indicated by ISCT.

3. To test whether the identified mechanisms improve consumers' perceptions of targeted advertisements.

4. To investigate the underlying cognitive processes that might explain the effects of the mechanisms on consumers' acceptance and perceptions of targeted advertisements.

To attain my research goals, I conducted two experimental studies, a laboratory experiment and a large-scale field experiment. As a result of the combination of

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real behavioral data and self-reported data, my findings are particularly robust and may stimulate the debate on consumer privacy, advertising effectiveness, and the funding of free content websites among academics, practitioners, and regulators.

1.3   Proceedings of the Dissertation

The following chapter of this dissertation introduces the targeting of online advertising, at first from a managerial[6] and then from an academic perspective. As a basis for a scientific exploration of online targeting, section 2.1 provides a practical background by introducing fundamental aspects of targeted online advertising: *categories of online advertising* and *pricing models* (section 2.1.1), which constitute aspects that are particularly important for publishers exploiting online advertising as a revenue source; different *targeting methods* (section 2.1.2) that are a means for advertisers to reduce waste; and legal limitations on targeted advertising (section 2.1.3). In section 2.2, I outline how targeting may increase advertising effectiveness by mapping targeting onto advertising effectiveness models and by summarizing findings of studies on targeting effectiveness. In section 2.3, I review studies on the mediation effect of attitude toward advertising on advertising effectiveness and I highlight why privacy concerns can constitute a risk to targeting effectiveness.

In chapter 3, I provide a comprehensive overview of research on consumer privacy concerns. In particular, I describe the construct of consumer privacy concerns, theories that are popular in consumer privacy research, and findings on antecedents, consequences, and moderators of consumer privacy concerns in an Internet context. Finally, within a social exchange framework, I systematically present findings on factors influencing the provision information for personalized marketing. These findings constitute an *empirical basis* for my research model.

To set an *ethical foundation* for my research model, in chapter 4 I conceptualize targeted advertising as a social contract between a website and its surfers. After a

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[6] Although the focus of section 2.1 is to provide some practical background, I also refer to academic studies whenever possible.

short description of the most important ideas related to the concept of a social contract, I present integrative social contracts theory (Donaldson and Dunfee 1994; 1995) as a theory of business ethics from which I derive a set of tangible normative minimum requirements for my research. Then, I show that mechanisms to increase the acceptance of targeting are in line with ISCT if they are compatible with specific fairness norms.

In chapter 5, I introduce my research model by returning to the social exchange framework. Specifically, I derive tangible, managerially operational mechanisms to increase the acceptance of targeting and to improve consumers' perceptions of targeted advertisements from fairness theories. This way, I account for the requirements previously derived from ISCT. I set up hypotheses that relate to both, the (direct) effect of tangible mechanisms on the target variables in my research model (i.e., stimulus-response- (SR-) level hypotheses), as well as consumers' underlying cognitive processes (i.e. stimulus-organism-response- (SOR-) level hypotheses).

In chapter 6, I present the design and the results of two experimental studies, a laboratory experiment and a large-scale field experiment, which serve to test my hypotheses on both an SR-level through rigorous chi-square testing and multivariate analysis of variance procedure, and an SOR-level through maximum likelihood-based structural equation modeling procedures. As my studies yielded a very rich data set, I also perform further exploratory analyses, which go beyond my core research questions.

In chapter 7, I summarize and interpret the most important findings of my hypotheses tests and exploratory analyses. Furthermore, I discuss their numerous theoretical implications and their tangible managerial implications. I conclude by outlining the limitations of my studies and describing avenues for future research.

2.   The Targeting of Online Advertising

2.1   Introduction to Targeting in the Context of Online Advertising

Within the marketing mix, the Internet is becoming increasingly important. The Internet already constitutes the second-largest advertising medium in the U.S., and while advertising revenues from traditional media have stagnated, online advertising revenues are expected to grow continuously (Interactive Advertising Bureau 2011b). In Germany, online advertising accounts for about 18.8 percent of total 2010 gross advertising spending (OVK 2010). This corresponds to about 5.1 billion EUR and an increase of nearly 75 percent compared with 2007 (OVK 2010). Online advertising can be classified into three major categories: search engine marketing, affiliate marketing, and conventional online advertising.

Table 1 provides an overview of online advertising spending in Germany, the U.S., and Europe in 2009 across those categories. It shows that online advertising constitutes a multi-billion dollar industry. While this industry consists of many players, such as advertising agencies, media agencies, or technical service providers, Deighton and Quelch (2009) estimate that in the U.S., online publishers (i.e., Internet firms offering online content to surfers) receive a substantial share of those advertising revenues. In 2007, this share was estimated to account for 6 billion USD. Those online advertising revenues are important in funding content websites (i.e., non-e-commerce websites), an industry sector employing about 60,000 people in the U.S. (Deighton and Quelch 2009), because most online content is free of charge to consumers (Interactive Advertising Bureau 2010a).

Within the online advertising industry, targeting is a major trend. It aims to show advertisements only to those consumers who are most likely interested in the advertised product or service in order to increase advertising effectiveness (Ehrlich 2007). In 2010, about 18 percent of publishers' advertising revenues stemmed from behavioral targeting alone (NAI 2010), which is only one out of several targeting methods. Estimates by eMarketer suggest that in 2012 about a fourth of display advertisements will be delivered through behavioral targeting

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(Hallerman 2008). In line with this, over 90 percent of advertisers believe that the importance of targeting will increase (Ehrlich 2007).

Category	Germany	U.S.	Europe
Search Engine Marketing	1.62	7.68	6.73
Affiliate/Lead Generation	.31	1.08	n/a
Conventional Online Advertising	2.36	5.74	4.55
Other (e.g., E-Mail, Classifieds)	n/a	1.86	3.42
Total	**4.26**	**16.35**	**14.70**

Spending in 2009 in EUR billion[7]

Table 1: Online Advertising Spending in Europe and the U.S.

As I will detail in section 2.1.1, publishers can benefit from the increasing demand for targeting because it allows them to better exploit online advertising as a revenue source. This is because targeting reduces wastage for advertisers, which I will explain in section 2.1.2. There are, however, several privacy laws regulating the targeting of online advertising, which will be summarized in section 2.1.3.

2.1.1   Online Advertising as a Revenue Source

From the *publisher perspective*, targeting helps to fund online content. A study by the Network Advertising Initiative reports that the cost of behaviorally targeted advertisements is 2.68 times greater than the cost of standard ad placements within U.S. advertising networks (NAI 2010). In Germany, the advertising rates of large publishers reveal that targeted online advertising is typically 50 to 100 percent more expensive than non-targeted advertising (IP Deutschland 2011; Tomorrow Focus 2010; United Internet Media 2010). As will be shown in the next section (2.1.1.1), targeting is applicable to all categories of online

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[7] Spending data from Interactive Advertising Bureau (2010b), Interactive Advertising Bureau Europe (2010), and OVK (2010); Europe figures include: Austria, Belgium, Bulgaria, Croatia, Denmark, Finland, France, Germany, Greece, Hungary, Italy, the Netherlands, Norway, Poland, Slovenia, Romania, Russia, Spain, Slovakia, Sweden, Switzerland, and the UK.

advertising, but with regard to its role of supporting free content, it is particularly powerful in increasing the value of conventional display advertising space.

2.1.1.1 Categories of Online Advertising

In general, the importance of search engine marketing, affiliate marketing, and conventional display advertising in financing a wide range of (free) content websites differs, because the market segments vary in size and concentration. The larger the size of the market segment, the more advertising spending goes to publishers (i.e., the organizations that run content websites with advertisement space, named inventory). The smaller the concentration of players, the higher the number of publishers profit from revenues within that segment.

Search Engine Marketing (SEM) refers to advertisements displayed on the results page of search engines alongside organic Web search results (Ghose and Yang 2009). Companies wishing to run SEM define specific keywords related to the products or services they wish to advertise (Wilbur and Zhu 2009). When a consumer searches for such a keyword on the search engine, the advertisers' webpage appears as a sponsored text link next to or above the organic search results returned by the search engine (Ghose and Yang 2009). Advertising costs and the quantity of searches available vary widely across keywords (Ghose and Yang 2009). In order to be listed in the paid search results, companies bid on those specific keywords. As there are often several companies competing for those advertising spaces, the bid of a company determines the position of the sponsored link. SEM is charged on a per click basis (OVK 2010). That means that advertisers pay the bid price only for the users who actually click on their listing and are redirected at the Web address chosen by the advertiser (Ghose and Yang 2009). As listings appear solely when a surfer searches for a specific keyword, SEM—by definition—is targeted to consumers with specific interests or needs.

In the U.S. as well as in Europe, SEM makes up about 45 percent of the total online advertising market (Interactive Advertising Bureau 2010b; OVK 2010). Due to the popularity of its search engine, Google has a market share of more than

80 percent in most European countries and over 50 percent in the U.S. (ComScore 2008), and therefore receives most of the SEM spending. Thus, in spite of its high market volume, the role of SEM in directly providing a high number of publishers with revenues is limited compared with other categories of online advertising.

Affiliate marketing is a marketing practice in which websites, or affiliates, advertise products or services sold by another website, such as an online merchant (Hoffman and Novak 2000). Due to their generally small reach, most affiliates are organized within affiliate networks. Within affiliate programs, advertisers pay commissions to their affiliates when a visitor performs a predefined action, such as clicking on the link or making a purchase (Bhatnagar and Papatla 2001). As the products advertised on the affiliates' websites are usually appropriate to the content of the website (Hoffman and Novak 2000), advertisements displayed within an affiliate program are often contextually targeted. The market segment of affiliate marketing is highly fragmented and its total market share within online advertising accounts for less than 10 percent in most countries (Interactive Advertising Bureau 2010b; OVK 2010). Therefore, its overall importance for financing free content websites is limited.

Conventional online advertising comprises not only display advertisements but also moving pictures or rich media advertisements, as well as the integration of advertisers' content on online advertising facilities (OVK 2010). Examples for the latter are spotlights, i.e., custom built pages around a brand, ads in and around online games, the sponsorship of sites or sections, as well as sweepstakes and contests (Interactive Advertising Bureau 2010b). Within conventional online advertising, display advertisements make up about two thirds of total advertising revenues in the U.S. (Interactive Advertising Bureau 2010b), and is thus the most important segment within conventional online advertising. *Display advertisements* consist of graphical and textual content and contain a link to the advertisers' website (Manchanda et al. 2006). They can take various forms, measured in pixels, and positions on a website (McCoy, Everard and Loiacono 2009; McCoy et al. 2007). Often, they are rectangular and graphically embedded in a website so that they do not obscure content (Kazienko and Adamski 2007). Examples are full

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banners horizontally at the top of a website, vertical standard skyscrapers usually on the right side of a website or rectangles integrated into the editorial content of a website (BVDW 2011a). Some display advertisements obscure content and need to be cleared or closed before a user has full access to the content of a website, such as Flash layers, banderole ads, or expandable super banners (BVDW 2011a; McCoy et al. 2008). Those forms have successively replaced traditional pop-up advertisements, as most browsers contain blockers suppressing pop-ups (McCoy et al. 2008).

The conventional online advertising market is highly fragmented with thousands of websites offering advertising space (Internet World Business 2010). Therefore, most publishers market their inventory through an entity bundling advertising space. Such entities can be online marketers, advertising networks, or ad exchanges/marketplaces (Sandner 2009). In total, conventional online advertising constitutes about a third (U.S.) to even more than half (Germany) of total online advertising spending. In conclusion, conventional online advertising in general and display advertising in particular constitutes the most important revenue source for online publishers.

2.1.1.2 Pricing Models of Online Advertising

In contrast to traditional advertising media like newspapers advertisements or TV spots, the Internet allows consumers to interact with advertisements (Hoffman and Novak 1996, 2000). Since online advertisements contain a link to an advertiser's website, consumers interested in the advertiser's products or services can click on the link to learn about them. This interactivity, which can be tracked and measured allows for a variety of pricing models (i.e., the method a website charges to the advertiser to display its advertisements; Chickering and Heckerman 2003). Advertisers increasingly request more performance-oriented and thus variable pricing models (BVDW 2011b; Manchanda et al. 2006). An underlying reason might be that the effectiveness of online advertising is often questioned (e.g., Bhatnagar and Papatla 2001) with click rates traditionally being very low

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(Dahlen 2001; Manchanda et al. 2006) and studies claiming that 50 percent of online surfers do not read banner ads (Drèze and Hussherr 2003; Interactive Advertising Bureau 2010a). The existing pricing models differ by the degree to which the advertiser and the publisher bear risks related to advertising effectiveness (Hoffman and Novak 2000; Mangàni 2004).

At the one extreme are *fixed payments* to a website (Hanson and Kalyanam 2007). Irrespective of the actual number of people exposed to the advertisement, an advertiser pays a website a predefined amount (Hoffman and Novak 2000). This payment method bears most risk to advertisers regarding the effectiveness of the invested advertising budget. That is because, first, this method does not take into account how many people see the advertisement. Second, it does not take into account the effect the advertisement has on those people who see it. Thus, it is not performance related. In practice, this pricing method is rare and is mostly applied to sponsored content such as online games or spotlights (Hanson and Kalyanam 2007; Interactive Advertising Bureau 2010b).

Within the *cost-per-thousand (CPM)* pricing model, an advertiser is charged a fixed amount per 1,000 emissions of an online advertisement within a predefined period of time (Kazienko and Adamski 2007). This payment model is similar to pricing models commonly used in traditional media. It is based on the 'broadcast paradigm' that exposure-based pricing takes into account for different response functions of different advertisers and thus represents a rational way for pricing advertising space (Hoffman and Novak 2000). Within the CPM model, the advertiser assumes the performance risk of the advertisement because he only benefits from the advertisement if it is effective in influencing the consumers who view it. In contrast, the publisher receives a guaranteed revenue per impression of the advertisement (Chickering and Heckerman 2003). To account for this advertising effectiveness risk, advertisers often calculate a target group CPM or cost-per-effective-target-market rating point by dividing a CPM by the percentage of people reached who are in the respective target group of a campaign (e.g.,

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Smith, Boyle and Cannon 2010)[8]. This metric allows advertisers to estimate the true cost of reaching their target group and thus get a better estimate of the effectiveness of an advertising campaign. Currently, the CPM pricing method is the prevailing revenue model within display advertising (Interactive Advertising Bureau 2010b).

Performance-based pricing models transfer some or all of the risks related to advertising effectiveness to the publisher (Chickering and Heckerman 2003). In those models, a publisher's revenues are linked to a heuristic of advertising effectiveness (Manchanda et al. 2006). This shift of risks from the advertiser to the advertising medium can be considered a change in paradigms of media pricing. One of the most prevailing performance-based pricing models is c*ost per click (CPC)*. Within CPC, the advertiser receives a predefined amount for each consumer clicking on the advertisement (Kazienko and Adamski 2007). There are also other heuristics, such *as cost per sale (CPS)* or *cost per action (CPA)*—most widely employed in affiliate marketing—where the publisher is paid for every action of a visitor related to the advertisement, e.g., a visitor's registering with a website, filling a form, or rating a product (Kazienko and Adamski 2007).

While performance-oriented pricing models are appealing to advertisers, they have some important challenges. First, on a methodological level, there is a vivid controversy whether the heuristics employed constitute a valid measure of advertising effectiveness. In particular, it is questioned whether the c*lick through rate (CR)* as the underlying metric for CPC constitutes an appropriate heuristic to assess advertising effectiveness (e.g., Drèze and Hussherr 2003; Hoffman and Novak 2000; Manchanda et al. 2006). On the one hand, it is argued that the CR is too imprecise because it only measures whether a surfer is directed to an advertiser's website which does not necessarily result in a purchase (Moe and Fader 2004). On the other hand, publishers, as well as some marketing researchers, argue that the CR does not capture increases in brand awareness or increased purchase intentions and thus underestimates advertising effectiveness

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[8] This target group CPM can thus be considered a ceiling for the cost per thousand an advertiser would be willing to pay for targeted advertisements.

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(BVDW 2010; Yoon and Lee 2007). Second, with regard to the business models of online publishers, a move from CPM towards more performance-oriented advertising pricing transfers the risk related to advertising effectiveness from advertisers to publishers. This way, it makes advertising revenues more variable and less predictable.

In this context, methods to increase the effectiveness of online advertisements are appealing to, both advertisers and publishers. Through targeting, publishers can better monetize their inventory by either receiving larger per impression revenues (in the case of CPM pricing models) or through an increase in clicks resulting from better targeted advertisements (in the case of performance-based pricing models). At the same time advertisers almost exclusively pay to reach only those visitors of interest and thus reduce wastage of their advertisements (Chickering and Heckerman 2003; Iyer, Soberman and Villas-Boas 2005), as will be explained in more detail in the next section.

2.1.2   Online Targeting as a Means to Reduce Waste

John Wanamaker's well known statement of "Half of the money I spend on advertising is wasted and the trouble is, I don't know which half" reflects the challenges advertisers face. Media purchasing typically is the largest component of advertising spending, and for some firms, it is the largest position in their balance sheets. Ensuring that advertising space is bought efficiently so that it reaches the relevant target group has always been a challenge for marketers. Thus, the goal of media planning is to minimize waste by reducing the extent to which advertising is shown to consumers who are not in the target group of the respective product or service (Iyer, Soberman and Villas-Boas 2005).

Traditional media planning consists of placing advertisements in media whose demographic structure corresponds closely to the demographic characteristics of the advertisers' target group (Kazienko and Adamski 2007; Mühling 2007). This process often results in a high level of wastage, as most media audiences are not fully homogenous in terms of demographics. Even more importantly, interests and

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opinions can be much more effective than demographics in understanding consumer purchase behaviors (e.g., Weinstein 1987; Wells and Tigert 1971). Therefore, interests and opinions are often more appropriate parameters to define a target group than demographics.

Against this background, in the past decade, websites have successfully started offering targeting options to increase their service to advertisers (Baudisch and Leopold 2000). Targeting can be defined as the process through which marketers deliver messages more selectively to the intended target group, in a way that it prevents wasted coverage of consumers who do not belong to the intended audience (Micu 2005). That is because through online targeting, websites can selectively display advertisements to specific predefined consumers segments. As targeted ads aim to reach a more engaged audience than regular ones, they are supposed to be more relevant to consumers (Hof 2008; Unknown Author 2007).

Depending on the targeting method employed, there are different criteria to manage the distribution of online ads. As will be presented in section 2.1.2.2, targeting methods for display advertisements can be classified into *non-behavioral targeting methods*, such as contextual targeting, technical targeting, and geo targeting, as well as *targeting based on online behaviors*, such as behavioral targeting, predictive behavioral targeting, and retargeting. While all targeting methods are enabled through modern advertisement delivery systems, known as ad servers (Chickering and Heckerman 2003; Zhang, Ma and Sun 2008), they require different targeting technologies and consumer information, which will be presented in the following section (2.1.2.1).

2.1.2.1   Technological Foundations of Online Targeting

Advertisement servers (ad servers). Irrespective of whether targeting takes place or not, online advertisements are displayed on websites through ad servers. An ad server is a system to manage and serve advertising space on the Internet (Sherman and Deighton 2001) that can either be a physical server or a software solution (Kopp 2008). Its most important function is to serve ads on web pages based on

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different rules, and to log information on the number of ads delivered as well as the number of clicks in a reporting database (Nolet 2007).

For an advertisement to be delivered to a website through an ad server, a publisher has to include an ad tag in the HTML code of its site. Such an ad tag is a piece of HTML code reserving advertising space on a website and containing a command to the respective ad server. Generally speaking, when a surfer accesses the website, the ad tag requests the surfer's browser to retrieve an advertisement from the predefined ad server. As this process happens in real time, an ad server can apply different rules to determine which advertisements to display to the respective user. The rules employed by the ad server can be classified into two categories: (1) rules related to the targeting of advertisements, and (2) general delivery rules, such as daytime of delivery or frequency capping (see process description of ad selection by an ad server below). The rules applicable to the targeting of advertisements depend on the data available (Nolet 2007).

Usually, all players involved in the implementation of an ad campaign wish to collect data. Those players include the advertiser, the agency, the publisher, and potentially an advertising network the publisher belongs to. That is because data on ad impressions are the basis for billing that all players involved want to have transparency on (Nolet 2007). Furthermore, some advertisers or media agencies want to create their own consumer profiles for targeting (Rauchhaupt 2010; Simons 2010). For each party to be able to collect their own data, all ad servers need to be involved in the ad delivery process. Therefore, when requesting an advertisement, a website usually communicates not only with one ad server but with several ad servers (Nolet 2007; Picard 2007)[9]. Figure 1 shows the typical interaction between a web page and different ad servers through a surfer's browser.

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[9] Due to a lack of concise academic literature, the section on the ad serving process is based on descriptions by two industry experts. Their descriptions are consistent and their blogs can be commented on by other users. Similar to a peer review process, this interactivity provides some quality control. Therefore, in combination, these two blogs are considered reliable sources.
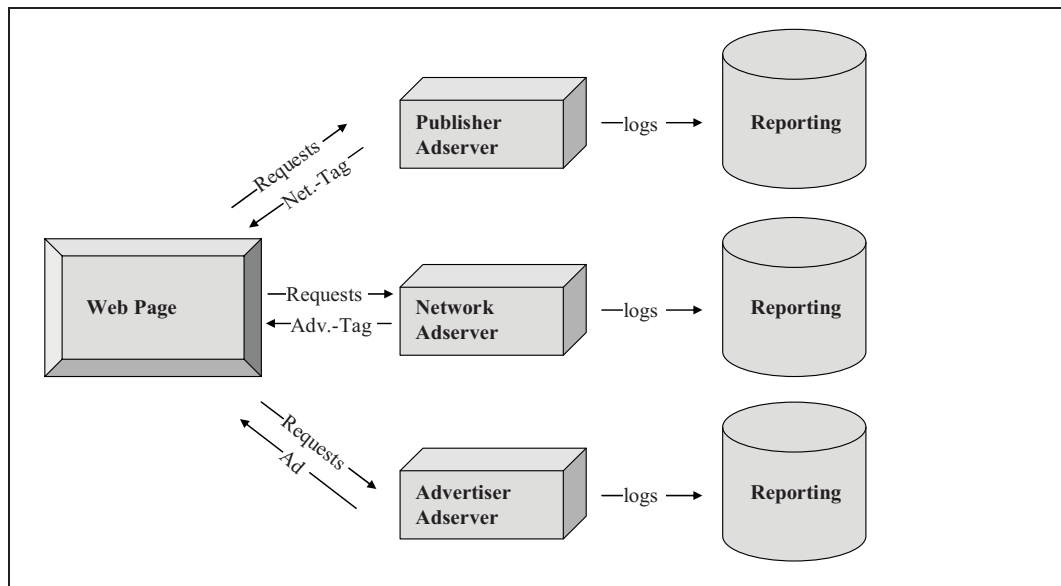
Source: Nolet (2007)

Figure 1: Process of Ad Delivery Involving Different Ad Servers

When a user accesses a website, the ad tag points the surfer's browser to the publisher's ad server. Instead of immediately returning an ad, the publisher's ad server returns a second ad tag that points the surfer's browser to the server of the respective ad network. Based on targeting information, the ad network's server might select an ad, but it might not deliver it to the browser. Instead it might return a further ad tag pointing toward the ad server of the advertiser or its agency. Finally, the server of the advertiser or its agency returns the address from which the browser can load the advertisement (Nolet 2007; Picard 2007).

Process of ad selection by an ad server. When an ad server responsible for selecting an advertisement receives an ad request from a particular website, it performs several steps: (1) First, it checks whether the respective browser is part of any targeting groups. In particular, it requests potential cookies containing information relevant for targeting. (2) It then checks the parameters of all campaigns assigned to the respective website. For all advertisements matching the delivery criteria, the ad server compares the different yields to optimize revenues. (3) Finally, the ad server selects the advertisement that delivers most revenues. Usually, the more targeted an advertisement is, the more valuable is its delivery. To target an advertisement, an ad server or an external Application Service

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Provider (ASP) connected to the ad server can employ different data sources (Kopp 2008; Nolet 2007; Picard 2007).

Potential data sources employed by ad servers. There are different data sources available to target the delivery of advertisements. As will be detailed in section 2.1.3, privacy laws restrict the collection and usage of consumer information in general and personally identifiable information in particular.

Log files store all requests to a web server (Tyagi, Solanki and Wadhwa 2010). They contain a visitor's IP address, potential user name (if required for authentication), a time stamp, documents requested such as texts and pictures, bytes transferred, results status, the referring URL including search terms if the user was referred from a search engine, and sometimes information on a user's browser and operating system (Grace, Maheswari and Nagamalai 2011). Log files allow for targeting based on the information stored. They also allow for sophisticated statistical evaluations, such as data mining techniques, to discover typical usage patterns of website visitors, derive association rules, or define user segments (e.g., Sumathi et al. 2010; Vijayalakshmi, Mohan and Raja 2010). However, as Internet service providers often change the IP addresses assigned to their customers' computers, it is not always possible to identify a surfer with repeated visits (Chaffey et al. 2001). Therefore, for targeting purposes, log files are often combined with other data sources and profiling technology such as cookies (Mühling 2007).

Cookies are the most common method of tracking the activities of website visitors (Miyazaki 2008). Cookies are small text files containing a unique tracing ID that a web server (or an ad server) places in a surfer's browser when visiting a website for the first time (Hormozi 2005). The information stored on the cookie can then be retrieved and complemented by the website upon subsequent visits (Hormozi 2005; Linn 2005; Millett, Friedman and Felten 2001). When cookies are shared by different websites and administered by technical service providers, they are called **third-party cookies** (Lavin 2006; Miyazaki 2008). In the context of online targeting, the purpose of a cookie is to record information relevant to consumer profiling, such as the theme of the websites visited by a user (Reagle and Cranor

1999). The information recorded by the cookie can be either passive information, such as information on a user's surfing patterns, or active information, i.e., information directly provided by the user, such as information provided within a registration processes or a survey (Martin et al. 2003; Miyazaki 2008).[10] Generally, cookies identify a browser as well as the computer on which it is placed, but not an individual. Unless a surfer has registered at a website and volunteered personally identifiable information, the cookie does not map the individual's real identity (Sherman and Deighton 2001). Although some "session cookies" are designed to last only for the duration of the current online session, most cookies are configured to last for months or years (Linn 2005). Technically literate online users can control the placement of cookies by adjusting the privacy settings on their computer. In particular, they can delete tracking cookies in their Internet browsers. However, the online advertising industry has developed other highly controversial—and in some countries illegal—tracking mechanisms, such as **web bugs** or **Flash cookies**, which can circumvent those privacy settings.

Web bugs, also called web beacons, are tracking pixels often embedded in an advertisement on a website or in an email (Dwyer 2011; Harding, Reed and Gray 2001). Web bugs are usually invisible to Internet users because they are transparent and only one pixel in size (Goldfarb and Tucker 2011b). Like cookies, they can track users' activities, and can be either administered by the website itself or a third party (Interactive Advertising Bureau 2011a; Martin et al. 2003). Compared with cookies, it is more difficult for consumers to avoid being tracked because those tracking pixels are placed within a picture or an ad displayed to a surfer and cannot be managed through the privacy settings of the browser. Therefore, without inspecting the HTML code of a website, a surfer cannot detect a web bug (Goldfarb and Tucker 2011b).

Flash cookies, also known as local shared objects (LSO), store information not only on the browser but also on a user's local drive (Marshall 2010). Flash cookies are mostly employed by websites offering Flash media to save certain

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[10] Please note that the term 'active information provision' does not necessarily imply that the user is aware that data will be used for targeting purposes, as will be discussed in chapter 3.

Adobe Flash-related settings, such as storing preferences for watching Flash videos or caching a music file for better playback (Larkin 2009). Like regular cookies, they can store unique identifiers of the sites a surfers visits (Larkin 2009). In contrast to regular cookies, if a surfer deletes all cookies in her browser, this does not affect the information stored by Flash cookies (Federal Trade Commission 2010) unless the browser contains a specific application programming interface (API) to clear local shared objects, which is only the case for the latest browser versions, such as Internet Explorer 8 and Mozilla Firefox 4. A recent study by the University of Berkeley found that many websites in the U.S. use this stored information to reinstantiate HTTP cookies deleted by the user (Soltani et al. 2009).

Different targeting methods require different targeting technologies. However, in contrast to regular cookies, web bugs and Flash cookies are not a prerequisite for most behavior-based targeting methods. Rather, they are a means to circumvent users' control over the information stored on them. Such a procedure will be critically discussed throughout the remainder of this work.

2.1.2.2 Online Targeting Methods

Non-behavioral targeting methods normally do not require cookie-based consumer profiling. But with an increasing coalesce of different targeting methods, they also sometimes rely on profiling technology. The most common methods are contextual targeting, technical targeting, and geo targeting.

Contextual targeting can be considered the most basic form of targeted online advertising as it does not involve information on web site visitors. It consists of matching an advertisement to the content of a website (Goldfarb and Tucker 2011a). For example, an advertisement on vacation offerings would appear next to an article on a popular travel destination and thus be expected to be relevant to surfers browsing the respective website (Hegge 2007). Some contextual targeting programs use language-based technology that automatically recognizes and categorizes the content of websites (BVDW 2009). A well-known example of

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contextual targeting is the Google 'AdSense for content' program in which the Google search engine periodically analyzes the content of mostly long-tail websites participating in the program to assign appropriate advertisements to the respective publishers (Kazienko and Adamski 2007). In contrast to other targeting methods, contextual targeting does not deliver advertisements selectively to particular visitors of a website. As such, it is similar to traditional media planning and does not require a profiling of surfers. The important difference from traditional media planning is that websites running advertisements are not selected based on the demographic structure of their audience, but rather on the likely interests of surfers browsing that website.

Technical targeting allows targeting advertisements based on the software and hardware environment of a user (BVDW 2009; Hegge 2007). Most of those methods employ log file analyses to decide which advertisements to display to online surfers (Mühling 2007). Popular technical targeting criteria are browser type, screen resolution, online provider, bandwidth, and the time of day of ad delivery (BVDW 2009). Through technical targeting, a website can, for example, make sure that an ad is displayed correctly on the users' screen or avoid excessive loading time (Mühling 2007). To a limited extent, technical targeting allows the inferring of users' interests, because information regarding the browser or operating system might indicate whether a surfer is technologically savvy. Frequency capping, i.e., limiting the maximum number of banner exposures to a surfer, is a standard procedure in online campaigns and is subsumed under technical targeting (Mühling 2007).

Geo targeting consists of selectively presenting advertisements to surfers based on their geographic location (BVDW 2009). For example, a retailer might want to show advertisements only to consumers living in a certain region. There are different ways to perform geographic targeting. It can be based on surfers' IP addresses stored in a website's log files. With the help of geo-location software, a website can then infer a surfer's approximate location (Mühling 2007). However, this method is at most reliable at a state or metropolitan level (BVDW 2009). Geo targeting can also be achieved through more in-depth user profiling (Mühling

2007). For example, a website might use location data a user submitted during registration processes. It might also derive a surfer's location based on search terms employed or based on other sites the user visited (Mühling 2007). This form of geo targeting can be considered a form of behavior-based targeting and usually requires the use of cookies.

Behavior-based targeting methods generally involve tracking technology, such as cookies or Flash cookies in order to create dynamic user profiles. Most of the recent enthusiasm with regard to online targeting refers to those behavior-based targeting methods (e.g., Hallerman 2008; Hof 2008; McDonald and Cranor 2010), because those behavior-based methods allow inferring consumers' interests which are particularly meaningful in predicting how receptive they are to a particular advertisement (Cartwright 2009; Dwyer 2009, 2011).

Behavioral targeting is the practice of collecting information on a consumer's web-browsing behavior to infer interests and intentions (McDonald and Cranor 2010). Mostly, cookies placed in surfers' web browsers track their online surfing behavior in order to create profiles (Hormozi 2005; Lambrecht and Tucker 2011). Based on those profiles, a website can then exclusively display an advertisement to consumers with specific inferred interests and intentions (Chickering and Heckerman 2003; Szoka 2009). Surfer profiles can be generated within one particular website, such as an online store offering targeted product recommendations to its customers, or across several websites. Many countries prohibit the combination of personally identifiable information with browsing patterns collected covertly (see section 2.1.3). But even in countries where consumer privacy is not strictly protected by law, the vast majority of profiles are anonymous, i.e., they do not contain data that can be linked to a person's name (Dwyer 2009, 2011). Nowadays, the notion of behavioral targeting is generally attached to the creation of consumer profiles and the displaying of targeted advertisements across several websites which are often organized in advertising networks (Bannan 2007; Hormozi 2005), such as the Google Advertising Network, the Yahoo Network or Germany's Ad Audience. This is because the more websites participate in the network, the richer the consumer profiles are, and

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the higher the likelihood that an advertiser obtains a sufficient reach when advertising to a particular target group.

Predictive behavioral targeting is the combination of behavioral targeting and predictive targeting methods (Hegge 2007). Whereas *behavioral targeting* derives probable interests from browsing and clicking behavior, *predictive targeting* collects self-reported, mostly psychographic data, such as product interests, media usage pattern, and lifestyle attitudes (Bauer and Bryant 2008). Those self-reported data are usually collected through questionnaires on websites applying predictive targeting. Generally, those surveys appear to surfers through a Flash layer advertisement on a website they visit and are branded by the respective website itself and the third party company offering the technical solution for predictive targeting. Figure 2 shows several examples of such surveys run on popular German websites. In general, an invitation to participate in a predictive targeting survey is only displayed to a fraction of people visiting a website, and only a small share of those people respond to the survey. The combination of several targeting methods generates richer consumer profiles than one targeting method alone (Bauer and Bryant 2008). With regard to predictive behavioral targeting, the combination of survey data collected on a small subsample with information on the browsing patterns of surfers permits the extrapolation of psychographic or socio-demographic data to a greater population of online surfers with similar surfing patterns (Hegge 2007; Irwin 2008). The notion 'predictive' thus refelcts that most user profiles are based on probabilistic algorithms.

Figure 2: Examples of Predictive Targeting Survey Teasers

Social network targeting refers to advertisements displayed to members of social networks depending on their profile information in the online community, such as age, relationship status, number, and type of online contacts, as well as education and workplace (Facebook 2011; Tucker 2011). Profile information may also be combined with other behavioral information, for example information related to their activities within the social network (Sullivan 2011).

Retargeting allows companies to deliver online advertisements to former visitors of their website (Bannan 2007; Lambrecht and Tucker 2011). The possibility of remaining in contact with surfers after their leaving a site is particularly attractive to online stores. For example, when a surfer visits a website to search for product information or prepare a purchase and leaves before completing the action desired by the website, a website can tag this visitor and then try to retain this visitor by displaying advertisements to him or her on other websites (Bauer and Bryant 2008; Lambrecht and Tucker 2011). For retargeting to be successful, it is important for an advertiser to have access to a large advertising network, i.e., an

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association of different publishers allowing the display of retargeted advertisements on their websites. Otherwise, it would be unlikely that an advertiser reaches its former visitors on their way through the Internet (Mühling 2007).

Keyword targeting permits websites to infer surfers' short-term interests based on the keyword they type into search engines. For example, Google's 'AdSense for Search' program[11] allows publishers to include the Google search box in their page. When a visitor uses this search box, targeted text-based advertisements are displayed next to the search results as sponsored links. For each click on such an advertisement, Google pays the publisher. Thus, keyword targeting is similar to SEM. But in contrast to Google's AdWords program, keyword-targeted advertisements do not appear on the Google website but on the publisher's website. Consequently, a publisher can use keyword targeting to monetize its content (Hegge 2007; Kazienko and Adamski 2007).

Websites and advertising networks can combine different targeting methods to further increase the likelihood of consumers' responding favorably to advertising campaigns and to further increase advertising revenues (McDonald and Cranor 2010; Vijayalakshmi, Mohan and Raja 2010). However, the data a website or its targeting provider are allowed to collect and combine is limited by law.

2.1.3   Legal Limitations on Targeted Online Advertising

Legal limitations on targeted advertising differ substantially between the European Union (EU) and the United States (U.S.) (Baumer, Earp and Poindexter 2004). Whereas the European Union follows a centralized regulatory approach, in the U.S., only a few delimited privacy regulations exist (Sachs 2008). The U.S. pursues a mostly decentralized self-regulatory approach through voluntary codes of conduct by industry organizations. This approach is grounded in the belief that market mechanisms will lead to an adequate level of privacy protection as

consumers are able to choose those offers that correspond best to their privacy preferences (Ashworth and Free 2006; Sachs 2008).

Due to the centralized approach, the level of privacy protection is relatively high and consistent across different EU countries (Goldfarb and Tucker 2011b). National privacy regulations are shaped by three directives: The 'Data Protection Directive' 95/46/EC and the 'ePrivacy Directive' 2002/58/EC, which have been implemented across different member countries (Sachs 2008; Traung 2010), as well as the new 'ePrivacy Directive' 2009/136/EC supposed to come into force in May 2011 (European Commission 2009a) but still needs to be passed into national laws in several EU countries. The Directive 95/46/EC prescribes minimum standards of data protection regarding the processing of personally identifiable information (European Commission 2003). The Directive 2002/58/EC clarifies how the provisions made by the 'Data Protection Directive' affects the electronic communications sector (Goldfarb and Tucker 2011b; Traung 2010).[12] The Directive 2009/136/EC amends the provisions of the 2002/58/EC Directive tightening privacy regulations with regard to security breaches, spyware, cookies, spam, and the enforcement of rules (European Commission 2009a; European Union 2009).

In the context of privacy legislation, German privacy laws, summarized in the next subsection, constitute an example of the high level of privacy protection in an EU member country. For example, the Directive 2002/58/EC was implemented as part of the Telecommunications Act in 2004 (Goldfarb and Tucker 2011b), and

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[11] Although this dissertation does not aim to present specific targeting programs offered by different companies, 'AdSense for Search' is briefly mentioned here due to the predominance of Google in the search engine market.

[12] The EU's striving for a consistently high level of privacy protection is illustrated by its actions regarding behavioral targeting practices by Internet service providers (ISP) in the United Kingdom (UK). In 2008/2009, the EU took legal action against the UK for failing to sufficiently implement the Data Protection Directive and the ePrivacy Directive. This action was triggered by covert trials of British Telecom and other ISPs using a behavioral targeting technology called 'Phorm', which the UK government did not impede (Hordern 2009). The use of the 'Phorm' technology by ISPs is highly controversial and—without explicit consent— illegal in the EU because it intercepts the entire online surfing behavior of a consumer (European Commission 2009b; Hordern 2009; Thomas 2008).

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might be further amended in line with the new 'ePrivacy Directive' 2009/136/EC (Grollmann 2010; Landesdatenschutzbeauftragter Rheinland-Pfalz 2010).

2.1.3.1 Privacy Regulations in Germany

In Germany, privacy laws are grounded in the **basic right of informational self-determination** as acknowledged by the German Federal Court in 1983 with regard to article 2 I in conjunction with article 1 I of the German constitution (Grundgesetz) (Sachs 2008; Wiebe 2008).

German privacy regulations. There are three privacy laws relevant to online advertising with different scopes: (1) The **Telecommunications Act** (Telekommuinikationsgesetz, TKG) mainly applies to the transfer of data, e.g., data required to transfer an email or to establish an Internet connection; (2) the **Telemedia Act** (Telemediengesetz, TMG) for application data generated during the use of an email service or a website; and (3) the **Federal Data Protection Act** (Bundesdatenschutzgesetz, BDSG), which relates to content data, such as the content of emails, letters or telephone conversations (Dix 2006; Eckhardt 2007).

These privacy laws only apply to personally identifiable information (Sachs 2008). Personally identifiable information (PII) is information that can be related to an individual (Eckhardt 2007). Whether data constitute personally identifiable information and are thus protected by German privacy laws depends on the cost it would entail for the company processing those data to relate them to the name of an individual (Sachs 2008). Data are considered anonymous if it would constitute a disproportional effort to relate them to an individual (Simitis 2003). A disproportional effort implies that one can assume that the relating of data to a name will not take place (Sachs 2008).

Although the notion of personally identifiable information may be context specific, some data employed by marketers are generally considered as PII, such as *email addresses* or *telephone numbers* (Eckhardt 2007). In contrast, IP addresses constitute PII when they are static and assigned to individuals instead of a group of people (Sachs 2008). However, s*tatic IP addresses* are mostly assigned

to large corporations or government agencies that organize their computers within networks. If a static IP address is assigned to a large network, it does not constitute PII because it can only be related to a network, but not to an individual computer (Sachs 2008). In practice, most Internet providers assign *dynamic IP addresses* to surfers when logging onto the Internet. Thus, except for the Internet provider who assigns the dynamic IP addresses, dynamic IP addresses do not constitute PII. Consequently, with regard to behavioral targeting, the storage and subsequent use of information within *log files* or *cookies* is regulated by German privacy laws when that information can be related to an individual without disproportional effort (Sachs 2008).

There are three basic principles encoded in German privacy laws relevant to online marketing when dealing with PII: permission, voluntariness, and transparency (Eckhardt 2007).

The principle of **permission** ('Erlaubnisvorbehalt') implies that the collection and usage of PII for other purposes than the original is prohibited unless explicitly allowed, either by law (which is relevant for law enforcement authorities) or through an explicit agreement by the person affected (Eckhardt 2007). For such an agreement to be legal, an individual has to submit an informed consent to the specified collection and usage of the data, which is called 'opt-in' (Sachs 2008). With regard to data usage, a consumer must explicitly allow every use case regarding the collected data. For example, it would be illegitimate to evaluate a consumer's responses to a personalized email if the consumer has only consented to receiving email advertisements (Eckhardt 2007). The principle of **voluntariness** implies that consumers need to have an alternative to consenting to the agreement. As such, companies with a market dominant position are not allowed to condition the provision of a service upon consumers' consent to such an agreement (Dix 2006; Sachs 2008).

The principles of **permission** and **voluntariness** are based on the fact that entities collecting and using PII can circumvent optional privacy regulations through other agreements. If no other agreements are in place, entities collecting information are only allowed to use PII for those purposes for which the data were originally

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collected. Additionally, it is prohibited to share that PII with third parties except for entities responsible for fulfilling part of the contractual relationship. However, this exception only applies to entities within the European Union or to entities in countries that the European Commission considers safe with regard to data protection laws (Sachs 2008).[13]

According to the principle of **transparency**, an entity collecting PII must inform the individuals affected about the specific purpose, the process, and the extent of data collection (Eckhardt 2007; Sachs 2008). The relevant regulations regarding transparency are inalienable, i.e., they cannot be circumvented by other agreements under private law (Sachs 2008). According to the Telemedia Act, it is mandatory to give users the possibility to access a website's description of its privacy practices at any time (Eckhardt 2007). Most websites comply with those regulations by including a link to their privacy policy on the welcome page (Eckhardt 2007). The transparency principle also requires companies to submit all data stored on an individual if requested by the respective person (Sachs 2008). However, in practice, due to the high effort involved, few people make such a request, and if submitted, companies often ignore those requests (Sachs 2008).

Measures by targeting providers to comply with German privacy laws. In order to avoid the tight regulations of the German privacy laws, targeting providers often avoid the collection and usage of PII. Instead, they pseudonymize or even anonymize user profiles (BVDW 2009). **Pseudonymization of profiles** can be achieved by replacing PII by a unique identifier, which precludes a direct connection of the profile to an individual (Arndt and Koch 2002). With the help of the respective key, the identity might be uncovered which would, however, constitute a violation of privacy laws (Arndt and Koch 2002; Sachs 2008). According to the Telemedia Act, if pseudonymous profiles are collected, users need to be informed about this practice, for example through a privacy policy, and

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[13] As data protection laws in the United States are considered insufficient by the European Commission, it is only permissible to transfer PII from an EU country to entities in the United States that are certified in the context of the "Safe Harbor Agreement" between the U.S. and the EU. In order to receive such a certification by the Federal Trade Commission (FTC), a company must adopt a code of conduct meeting several privacy requirements.

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must have the opportunity to object to ('opt-out' of) data collection (Sachs 2008). If users opt-out of pseudonymous profiling, targeting is not allowed (BVDW 2009; Eckhardt 2007). **Anonymous profiles** are profiles containing no reference to a particular person (Arndt and Koch 2002). Anonymization can be achieved by deleting or splitting PII from content data, often through an independent anonymizer, which is a practice employed by German targeting providers (Schröder 2010; ULD 2011). Anonymous profiles are not subject to German privacy laws yet (BVDW 2009; Eckhardt 2007). However, the 'ePrivacy Directive' to be implemented into German national legislation requires tighter regulations regarding tracking technology (Grollmann 2010; Landesdaten-schutzbeauftragter Rheinland-Pfalz 2010). It prescribes that third parties using tracking technology, such as cookies or spyware, need to clearly and comprehensively inform the user about this practice when a user engages in any activity that could result in a storage or accessing of that information, for example when the user browses a website applying a targeting cookie (European Union 2009; Grollmann 2010). Furthermore, users need to consent ("opt-in") to the processing of tracking information (European Union 2009; Grollmann 2010). After a heated debate, regulators compromised with the industry that such an opt-in may be obtained through surfers' browser settings but that surfers must be informed clearly and comprehensively about targeting practices to allow for informed consent. Apart from that, several websites and targeting providers have adopted a self-regulatory code of conduct complementing national legislation in response to a heated public debate on targeting and privacy (Unknown Author 2009). In particular, the companies involved have launched a website offering an opt-out functionality even for anonymous profiles (BVDW 2009, 2011c).

Applicability of German privacy laws. German privacy laws are also applicable to companies having their place of business outside the EU if they use automation technology in Germany. That means that if PII is involved, German privacy laws restrict placing of cookies on computers in Germany.[14] If the company has its

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[14] In contrast, the storage of log files or data submitted in online forms is not subject to German privacy laws, as the technology required to store those data is usually not in Germany but in the country in which the company has its place of business (Sachs 2008).

place of business in an EU country or a country of the European Economic Area, the privacy laws of the respective countries are applicable. The underlying reason is that the privacy regulations are harmonized through the respective directives (Sachs 2008).

Enforcement authorities of German privacy laws. In Germany, government agencies play the primary role in the enforcement of privacy laws. In some federal states, an independent data protection official (Datenschutzbeauftragter) is appointed and authorized to control privacy practices within organizations. In other states, the State Ministry of the Interior is responsible for the enforcement of data protection. Violations of privacy laws can be punished by imprisonment of up to two years and a civil penalty. In contrast to the U.S., private litigations are less important in enforcing privacy laws because the value of potential claims is generally low (Sachs 2008).

2.1.3.2 Privacy Regulations in the U.S.

In contrast to the EU, there is no comprehensive regulation regarding consumers' privacy in the U.S. (Sachs 2008). Only a few privacy laws exist at federal and at state level protecting consumers from privacy intrusions (Peltier, Milne and Phelps 2009). Instead, the U.S. heavily relies on sector-specific, voluntary industry self-regulation (Sachs 2008). This different approach to privacy regulation compared to Europe might be explained by a different conceptualization of individuals' right to privacy as well as the role of the state in governing the interactions of actors within free markets.

U.S. privacy regulations. The current interpretation of the Fourth Amendment of the U.S. constitution only protects citizens from unwanted intrusions into their privacy by the state.[15] As such, the right to privacy is anchored in the U.S.

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[15] The Fourth Amendment does not explicitly refer to the notion of privacy as it reads: "The right of people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized." With regard to the Fourth Amendment, in 1890 in the Harvard Law Review, Warren and Brandeis define the notion of privacy as "the right to be let alone" (p.

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constitution, but in line with the state action doctrine solely applies *to state actors* and not to private actors. U.S. jurisdiction also exhibits a different concept of privacy protection compared to Europe. Whereas the right to self-determination regarding personally identifiable information in Germany is an absolute right, privacy in the U.S. is only protected in areas in which an individual can have a *reasonable expectation of privacy*. This implies that privacy only merits protection where individuals assume they will not be monitored, i.e., the right to privacy is context specific. Information transmitted within a business relationship is not subject to this 'reasonable expectation of privacy'. The rationale is that this information is exchanged consciously, which also applies to IP addresses transferred when requesting a website. As a result, from a U.S. jurisdictive perspective, consumer privacy in a business-to-consumer context is rather considered as a *command of fairness* that should govern business practices than an absolute right. In line with this, the Federal Trade Commission (FTC), as the government agency regulating trade, is responsible for supervising business practices and enforcing federal privacy laws (Sachs 2008).

U.S. federal law contains only a few explicit privacy regulations. Table 2 provides an overview of those regulations. Most of them are not relevant to targeted online advertising as they are sector specific, such as the Fair Credit Reporting Act or the Health Insurance Portability and Accountability Act. The Federal Privacy Act only requires government agencies, not businesses, to apply fair information practices on records containing personal information. As an exception, the Children's Online Privacy Protection Act (COPPA) restricts the collection and processing of personally identifiable information on children under the age of 13 by businesses. The Electronic Communications Privacy Act (ECPA) prohibits third parties to intercept and record information transmitted electronically and to access information stored on commercial IT systems. However, it does not apply to cookies as they are stored on consumers' PCs which do not constitute commercial IT systems (Peltier, Milne and Phelps 2009; Sachs 2008). In addition, federal law contains a sweeping clause prohibiting *unfair and deceptive business*

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193). Nowadays, the notion of privacy is broader, not only comprising physical privacy but also

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practices that can be applied to consumer privacy. In that regard, the sweeping clause prohibits companies from providing *misleading information* to consumers regarding the processing of personal information. However, it does not prohibit the collection and use of personal information per se (Sachs 2008).

Enforcement authority of privacy practices in the United States. In cases of severe violations of federal privacy laws or unfair and deceptive business practices, the FTC can impose monetary penalties, file civil actions, or order an external audit. However, the FTC does not specify which information companies are allowed to collect and process. Instead it aims to foster the implementation of *voluntary industry self-regulations* (Sachs 2008). As a guideline for self-regulation, the FTC promotes its *Fair Information Practices* (FIP) detailing how organizations should deal with personal information (Sheehan and Hoy 2000). Based on the provisions by the Federal Privacy Act, which is only binding for government agencies, the FTC further details those principles of FIP to respond to the privacy challenges entailed by the emergence of the commercial Internet (Sachs 2008). The FIP principles comprise (1) **notice**, meaning that individuals should be *aware* of information collection; (2) **consent**, i.e., consumers should have a *choice* regarding the collection of their information; (3) **access**, allowing consumers to *view* their data and *edit* them; (4) **integrity/security**, requiring mechanisms to ensure the *accuracy* and *protection* of data from unwanted access. The FIP principles also emphasize the importance of **enforcement mechanisms** to remedy improper information practices, either within the self-regulatory framework of companies or through the possibility of legal actions (Federal Trade Commission 1998).

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informational privacy (see section 3).

Law (Year)	Summary
Freedom of Information Act (1966e / 1996a)	Guarantees third party access to federal records, including personal information under the control of federal agencies.
Fair Credit Reporting Act (1970e)	Promotes accuracy, fairness, and privacy of information in the files of every "consumer reporting agency", the credit bureaus that gather and sell information about consumers to creditors, employers, landlords, and other businesses.
Federal Privacy Act (1974)	Applies to the records of federal government agencies. Requires agencies to apply basic Fair Information Practices to records containing personal information.
Electronic Communications Privacy Act (1986)	Prohibits tampering with computers or accessing certain computerized records without authorization. Prohibits disclosure of the contents of stored communications.
Electronic Communications Privacy Act (1986)	Amends federal wiretap law to electronic communications such as email, cell phones, and computer transmissions. Sets restrictions on access to stored wire and electronic communications and transaction records.
Computer Matching & Privacy Protection Act (1988)	Amends the Federal Privacy Act of 1974 to set requirements that federal agencies must follow when matching information on individuals with information held by other federal, state, or local agencies.
Telephone Consumer Protection Act (1992e)	Requires entities that use the telephone to solicit individuals, to provide such individuals with the ability to prevent future telephone solicitations.
Federal Identity Theft Assumption and Deterrence Act (1998)	Makes it a federal crime to use another's identity to commit an activity that violates federal law or is a felony under state or local law.
Financial Services Modernization Act (1999)	Requires financial institutions to issue privacy notices to their customers, giving them the opportunity to opt-out of some sharing of identifiable financial information.
Driver's Privacy Protection Act (1994 / 1997e)	Prohibits State Departments of Motor Vehicles from releasing "personal information" from drivers' licenses and motor vehicle registration records.
Children's Online Privacy Protection Act (2000e)	Requires commercial websites and other online services directed at children 12 and under, or which collect information regarding users' age, to provide parents with notice of their information practices and obtain parental consent prior to the collection of personal information from children.
Health Insurance Portability and Accountability (1996 / 2001e)	Requires healthcare organizations to "maintain reasonable and appropriate technical and physical safeguards to prevent intentional or unintentional use or disclosure of protected health information." Protected health information includes medical records, patient logs, insurance, billing, and other personally identifiable health information.
Do-Not-Call Registry Act (2003)	Authorizes the FTC to implement and enforce a do-not-call registry. The Act also ratified the do-not-call registry provision of the FTC's Telemarketing Sales Rule.
Fair and Accurate Credit Transactions Act (2003)	Amends the existing Fair Credit Reporting Act providing consumers, companies, consumer reporting agencies, and regulators with new tools to expand consumer access to credit, enhance the accuracy of consumer financial information, and help fight identity theft.
CAN-SPAM Act (2003, 2004a)	The Controlling the Assault of Non-Solicited Pornography and Marketing Act establishes requirements for those who send commercial email, spells out penalties for spammers and companies whose products are advertised in spam if they violate the law, and gives consumers the right to ask emailers to stop spamming them.
Identity Theft Penalty Enhancement Act (2004)	Sets rules and penalties for identity theft.

e = enacted; a = amended; source: adapted from Peltier, Milne and Phelps (2009)

Table 2: Overview of U.S. Federal Privacy Regulations

The FTC's approach to targeted advertising. In the past 5 years, the FTC has devoted special attention to behavioral advertising (Federal Trade Commission 2010; Kelley 2007). In order to specify the principles of FIP in the context of behavioral targeting and to encourage more meaningful and enforceable self-regulation that addresses privacy concerns, the FTC released a report on **online behavioral advertising principles** (Federal Trade Commission 2009; Mickey 2008). The report contains four principles: (1) The principle of **transparency and consumer control** expects websites to provide a clear and prominent privacy statement and give consumers the possibility to opt-out of behavioral advertising. (2) Websites are expected to offer **reasonable security and data retention**, i.e., keep data safely and only as long as necessary to fulfill a legitimate business or law enforcement need. (3) Websites are expected to receive **affirmative consent to retroactive changes** of a privacy policy when using data collected before a material change of a privacy policy. (4) **Affirmative consent to the collection of sensitive data**, such as financial information or Social Security number, should also be granted (Federal Trade Commission 2009). By requiring affirmative and not implicit consent to particularly sensitive privacy practices, principles 3 and 4 are stronger that the general version of FIP. Furthermore, with regard to behavioral advertising, the FTC currently promotes the idea of a "Do Not Track" tool. According to the current proposal, consumers should be able to restrict the collection of information about their web browsing behavior through a comprehensive, nationwide opt-out tool (Federal Trade Commission 2010). However, the concept is at a very preliminary stage, and it is unclear how it could be implemented technically. Therefore, it remains to be seen whether and how this idea might be realized.

Self-regulatory bodies in the United States. In response to the FTC's push for self-regulation, two major business associations representing the online industry have been formed: the Online Privacy Alliance (OPA), representing the most important IT companies, and the Network Advertising Initiative (NAI) representing online advertising companies (Sachs 2008). These industry associations have defined codes of conduct for their members. However, these codes of conduct offer a level

of protection that is substantially lower than in Europe (Sachs 2008). In essence, the NAI requires its members to provide an opt-out functionality, and defines transparency requirements for its members regarding their privacy policies, i.e., those texts detailing the privacy practices of a websites (NAI 2008).

Based on the sweeping clause regarding unfair and deceptive business practices, those privacy policies are binding. The FTC therefore monitors the transparency and comprehensibility of privacy policies. It can force companies to clarify their existing descriptions of privacy practices, and even take legal action against companies violating their own privacy policies. In addition, individuals and State Attorneys can file lawsuits against companies not acting in accordance with their privacy policies. U.S. law also allows for class actions, which makes litigation against corporations easier (Sachs 2008).

The U.S. self-regulatory approach also encourages companies and industry associations to involve private organizations in enforcing their privacy standards (Caudill and Murphy 2000; Sachs 2008). These organizations, such as TRUSTe or BBBOnLine, assign privacy seals, serve as arbitrating bodies for consumer privacy complaints, and are obliged to report violations of privacy laws to the FTC (Edelman 2011; Sachs 2008). However, TRUSTe, the organization serving the OPA and NAI, merely requires the existence of a privacy policy detailing a company's practices regarding the collection and procession of information (Sachs 2008). This has led researchers and industry experts to question the effectiveness of these seal programs (e.g., Boutin 2002; Edelman 2011). The FTC's recent proposal of a framework for business and policy makers to protect consumer privacy in an era of rapid change, including the idea of the Do Not Track tool, reveals that the FTC is dissatisfied with the current state of industry self-regulation (Federal Trade Commission 2010). However, so far, the FTC has not pushed congress to enact legislation to force online firms to implement the existing recommendations regarding behavioral advertising.

In conclusion, in spite of some recent initiatives by U.S. congressmen, behavioral advertising is not comprehensively regulated in the U.S. at the federal level (Boortz 2009; Hordern 2009). At the state level, some states such as New York,

Massachusetts, and Connecticut, tried to pass bills introducing tighter privacy regulations on targeting, but which mostly did not pass vote (Arias 2009; Warren 2011).

Overall, the relative absence of rigorous laws in the U.S. compared with Europe increases the challenges of targeted advertising related to consumer psychology (see chapter 3) and ethics (see chapter 4). Yet, it also enables a significantly higher advertising effectiveness as a study by Goldfarb and Tucker (2011b) found that online advertising effectiveness in the EU dropped by 65 percent after the introduction of the e-Privacy Directive 2002/58/EC relative to other countries. Therefore, within a less regulated context, it is even more important for companies to responsibly utilize their discretionary scope of action so as to create sustainable business models utilizing targeted advertisements—something to which this dissertation aims to contribute.

2.2   Targeting as a Means to Increase Advertising Effectiveness

As targeting allows the display of advertisements to specific consumers only, it can be conceptualized as a rigorous continuation of a market segmentation strategy. **Consumer segmentation** is an important marketing concept which has received academic attention for many years (e.g., Freter 2008; Yankelovich 1964). Segmentation consists of subdividing a market into distinct segments with common characteristics (Plummer 1974). The goal of segmentation is to define groups who have similar needs that can be met through products or services (Amine and Smith 2009). A common approach to segmenting consumers is according to lifestyles, also called psychographics (Vyncke 2002). This segmentation approach is based on what is known as *AIO research*, indicating that consumers' *activities*, such as shopping behavior or media consumption habits, as well as *interests*, and *opinions* are suitable dimensions to define target groups (e.g., Plummer 1974; Wells and Tigert 1971).

Defining target groups for products or services is a prerequisite for developing an appropriate product/service positioning and marketing communication strategy

(Dutta-Bergman 2006; Plummer 1974). That is because knowing the characteristics of the target consumer segments helps a company to determine "how to reach and communicate more efficiently and relevantly to the target customers" (Plummer 1974, p. 36). Thus, segmentation in general and targeting in particular allow for a differential treatment of a heterogeneous market (Alreck and Settle 2007).

As targeting enables a selective displaying of advertisements tailored to a particular target segment, it aims to increase advertising relevance (Dwyer 2011). The implicit assumption made by marketing practitioners is that targeting increases advertising effectiveness as more relevant advertisements impact the processing of marketing messages. This assumption can be theoretically backed by analyzing advertising effectiveness models.

2.2.1 Targeting and Advertising Effectiveness Models

Researchers have formulated numerous models of advertising effectiveness, which describe how advertising affects consumers' attitudes and behaviors regarding the advertised object (DuFrene et al. 2005). These models vary in complexity and comprehensiveness. The simplest form of advertising effectiveness models are **stimulus-response models (SR-models)**. They assume that a particular stimulus, such as an advertisement, is followed by a response, such as the purchase of a product (e.g., Lasswell 1927; Sutherland and Galloway 1981). These models are highly simplistic, assuming that an advertisement has the same effect across different individuals and neglecting important mediating personal and environmental variables (Bongard 2002). However, advertising does have certain conscious or unconscious effects on each consumer (Vakratsas and Ambler 1999). Therefore, SR-models appear to be inappropriate in illustrating the effectiveness of targeting. More comprehensive approaches to model advertising effectiveness typically postulate that consumers go through several *stages* or *hierarchies* before purchasing a brand (Bongard 2002). These stages can be summarized into *attention*, *processing*—also known as elaboration—and *behavior*

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(Bargh 2002). These hierarchical models also consider consumers' characteristics (Bongard 2002), and are therefore more suitable in demonstrating the effect of targeting. According to Bongard (2002), they can be broadly classified as **stimulus-organism-response models (SOR-models)** because they consider how consumers cognitively process advertising stimuli, hereby accounting for social and environmental factors (e.g., Howard and Sheth 1969; Petty and Cacioppo 1986) and may also consider consumers' personal characteristics as an intervening variable in the process of advertising effects (e.g., Lavidge and Steiner 1961; Smith and Swinyard 1982).

Description of the ELM. Within these hierarchical models, the **Elaboration Likelihood Model of persuasion (ELM)** (Petty and Cacioppo 1986; Petty, Cacioppo and Schumann 1983) is often claimed to be one of the most popular theories used to explain advertising effectiveness (e.g., Bargh 2002; Cho 1999; SanJosé-Cabezudo, Gutieérrez-Arranz and Gutiérrez-Cillán 2009). Originally, it was developed to understand consumers' processing of persuasive communication from a social psychology perspective (Tam and Ho 2005). Due to the pervasiveness of the ELM in research on online advertising (e.g., Cho 1999; Karson and Korgaonkar 2001; SanJosé-Cabezudo, Gutieérrez-Arranz and Gutiérrez-Cillán 2009), it constitutes an appropriate basis to theoretically derive why targeting would increase advertising effectiveness.

The ELM (Petty and Cacioppo 1986; Petty, Cacioppo and Schumann 1983) presented in Figure 3 suggests that there is a continuum of approaches an individual might employ to process persuasive messages. This continuum extends from not devoting any thoughts to the issue-relevant information, to performing a careful cognitive elaboration of all issue-relevant information. Petty, Cacioppo and fellow researchers (1983, 1986) conceptualize the two extremes of responding to persuasive communication as the *central route* and the *peripheral route.*
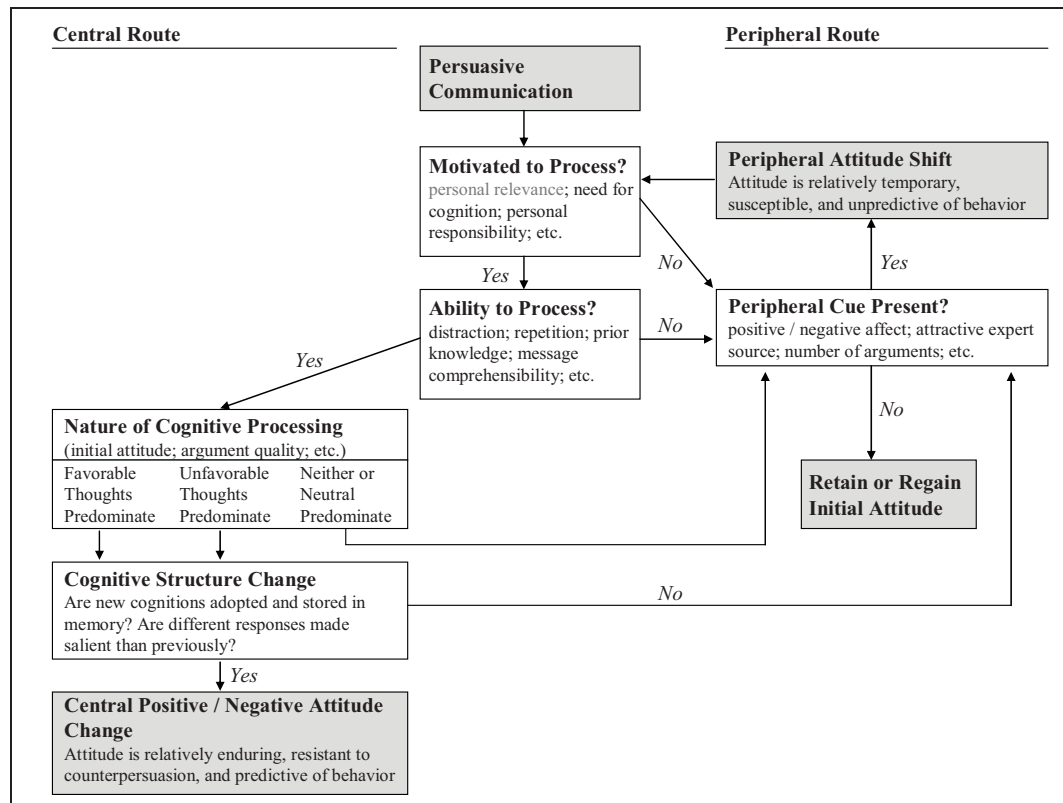
Source: Petty and Cacioppo (1986, p. 126)

Figure 3: The Elaboration Likelihood Model of Persuasion

If a message is processed through the *central route*, an individual engages in highly elaborative processing, thereby generating his or her own thoughts in response to the information presented. In this process, the individual critically elaborates every relevant argument. If favorable thoughts predominate during cognitive processing, the persuasive message will most likely be accepted, meaning that the individual will form an attitude congruent with the content of the message. If unfavorable thoughts predominate, the message will probably be rejected, i.e., the individual might form a negative attitude. As a change in attitude is a result of a person's elaborate cognitive processes, an attitude formed through the central route is relatively stable over time, resistant to counter-persuasion and predictive of future behavior (Petty and Cacioppo 1986; Petty, Cacioppo and Schumann 1983).

If a message is processed through the *peripheral route*, individuals make simple inferences of the validity of the message and employ decision heuristics to

respond to persuasive communication. Attitudes are formed through positive or negative signals, called peripheral cues, instead of processing the content of the message. Those peripheral cues mostly relate to the context in which persuasion takes place. Several studies conducted by Petty, Cacioppo and fellow researchers (e.g., Petty and Cacioppo 1981; Petty, Cacioppo and Goldman 1981; Petty, Cacioppo and Schumann 1983) showed that those peripheral cues usually relate to the execution of (advertising) message delivery, for example the physical attractiveness and the credibility of the person delivering the message (Petty and Cacioppo 1981), the expertise of the person delivering the message (Petty, Cacioppo and Goldman 1981), or the use of a celebrity endorsing a product (Petty, Cacioppo and Schumann 1983). Depending on those cues, people either retain their initial attitude or experience a shift in attitude, which might be temporary, susceptible to counter-persuasion, and unpredictable of future behavior (Cacioppo and Petty 1984, Petty and Cacioppo 1986; Petty, Cacioppo and Schumann 1983).

Whether individuals process persuasive communication through the central rather than the peripheral route depends on their motivation and their ability to engage in elaboration. That means for an individual with high motivation and the required cognitive ability, attitude formation will occur through the central route. Important motivational factors include the personal relevance of the message topic, the individual's need for cognition, i.e., a desire to perform effortful thinking (Cacioppo and Petty 1982), as well as his or her responsibility for evaluating the message topic. Factors influencing a person's elaboration ability include potential distraction, prior knowledge, as well as message comprehensibility. The peripheral route occurs when recipients either lack the motivation or the ability to process the content of the message. In some cases, people can switch from central processing to peripheral processing and vice versa. For example, when neither favorable nor unfavorable thoughts predominate during cognitive processing, people might rely on peripheral cues for attitude formation (Cacioppo and Petty 1984, Petty and Cacioppo 1986; Petty, Cacioppo and Schumann 1983).

Effects of targeting within the ELM. Within the ELM, there are two main ways in which targeting might improve advertising effectiveness. As mentioned in 2.2, targeting constitutes a rigorous implementation of a market segmentation strategy with regard to the delivery of advertisements. A market segmentation strategy aims to position products in a way that they meet the needs of the target segment. Also, it allows tailoring a marketing communication in a way appropriate to the target group.

Against this background, targeting first increases the elaboration likelihood of consumers viewing an advertisement. This is because an ad is displayed exclusively to those people who are assumed to have a *need* for the advertised product. Thus, the advertisement would be *more relevant* to consumers, which increases their motivation to cognitively process the message. Furthermore, an advertiser might phrase the advertisement in a way that it is most likely *comprehensible* for the target group. This ensures that viewers have the *ability* to cognitively process the advertisement displayed. Thus, targeted advertising is more likely to lead to an enduring attitude change, i.e., to increase long-term advertising effectiveness. Second, targeting might also impact advertising effectiveness when a consumer does not cognitively elaborate the message. This is because advertisers might design an advertisement in a way that it represents a peripheral cue that is particularly effective in triggering short-term peripheral attitude shifts in the target group. For example, individuals interested in sports might be particularly receptive to an advertising message delivered by a famous athlete. In conclusion, the ELM enables deriving the prediction that targeted advertising is superior to non-targeted advertising in fostering short-term and long-term attitude shits.

Empirical studies on relevance and advertising effectiveness. There are two empirical studies on the ELM in an Internet context, which support the above prediction. These studies do not explicitly study the phenomenon of targeted online advertising. However, both studies support the prediction that advertising relevance increases elaboration likelihood. A particular strength of these studies is

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that they study the effect of relevance on click rates, which is an important metric to measure advertising effectiveness.

Cho (1999) adapted Petty and Cacioppo's original model to reflect the interactivity of the Internet by including surfers' possibility of clicking on display ads. According to his model, surfers click on banners when they are motivated to process the message or when there are peripheral cues generating curiosity or attention, such as the size, the color, or the animation of a banner. His laboratory experiment shows that a high level of involvement, driven by a high level of *personal relevance* of the advertising message increases the likelihood of a surfer clicking on a banner. Furthermore, Cho (1999) included and empirically tested four variables mediating click behavior: relevancy, repeated exposure, attitude toward the site, as well as overall attitude toward Web advertising. The experiment confirms that *relevancy mediates advertising effectiveness* in that people in high involvement situations (defined as high personal relevance and high product category relevance) are more likely to click on banner ads. Therefore, in general, Cho's (1999) work confirms the positive impact of advertising relevance on advertising effectiveness. Additionally, the experiment shows that banners with a higher *congruency* between the advertised product category and the content of the site generate more clicks. This can be considered as empirical confirmation of the superiority of contextual targeting compared to non-targeting. However, what is missing is an empirical confirmation that targeting increases relevance and thus impacts the processing of messages. This link, though, is confirmed in an e-commerce study by Tam and Ho (2005).

Based on the ELM, Tam and Ho (2005) empirically showed in the context of an e-commerce website that personalization not only increases elaboration, but also surfers' subsequent behavior (i.e., the acceptance of a personalized offer). This study provides further evidence regarding the positive impact of targeting on advertising effectiveness, although it should be mentioned that personalization is not fully equivalent to targeting. Whereas targeting aims to *deliver* advertisements to one or several specific market segments, personalization goes one step further by *tailoring* a particular advertisement to a group or person in real time (e.g.,

Alreck and Settle 2007; Bearne 2009b; Tezinde, Smith and Murphy 2002; White et al. 2008). In the most extreme case, personalization might entail market segments of the size of one. However, both, targeting and personalization aim to increase advertising relevance (e.g., Anderson 2007; Tezinde, Smith and Murphy 2002; White et al. 2008). Furthermore, in their study Tam and Ho operationalized personalization as preference matching between users and the advertised product and showed that personalization increases relevance, which in turn increases elaboration and behavior (2005). As matching advertisements with consumers preferences is also the goal of targeting, their results would seem to be applicable to the context of targeted advertising.

Furthermore, in a recent study, Lambrecht and Tucker (2011) explored factors influencing the effectiveness of retargeting. They found suggestive evidence that personalization of retargeted ads is most effective when consumers have a specific mindset and are highly involved. As such, message specificity is most effective when consumers are at a certain information processing stage and are thus motivated to process a message centrally. Although Lambrecht and Tucker did not study the all aspects of the ELM, their findings are in line with the above explanations.

The discussion of the ELM and the related recent studies shows that targeting not only increases advertising effectiveness by increasing click rates on banner ads. It also shows that targeting might have a positive effect on the long-term effectiveness of online advertising by increasing the likelihood of elaboration. A higher elaboration likelihood would not only improve ad recall but also have a lasting impact on the attitude toward the advertised brand. However, in practice, those attitudinal short- and long-term effects are seldom measured. Rather, advertisers rely on behavioral data such as click rates and conversion rates to assess online advertising effectiveness and to determine performance-based pricing of advertisement campaigns (see also section 2.1.1.2).

2.2.2   Studies on Targeting Effectiveness

As Table 3 displays, there are numerous industry studies (e.g., Value Click 2010) or industry sponsored studies (e.g., Yan et al. 2009) highlighting the better effectiveness of targeted compared to non-targeted advertising campaigns. Reported success metrics include click rates and conversion rates. The reported results are usually based on case studies and do not allow for a generalization of the typical effect size of targeting. One exception is a study published by the NAI (2010) employing data provided by several large U.S. advertising networks covering a three months period. The study finds that on average, users who clicked on a behaviorally targeted advertisement are more than twice as likely to complete a transaction than those who clicked on a standard ad.[16]

Few academic studies on targeting effectiveness exist. Goldfarb and Tucker (2011a) report that matching an advertisement to the content of a website increases purchase intentions, but decreases recall. Comparing data from a campaign run on Facebook, Tucker (2011) shows that the targeting of advertisements based on users' profile information increases conversion rates. However, these academic studies also suggest that the effectiveness of targeted advertisements might be hampered by privacy concerns. Yet, the underlying mechanism of how privacy concerns affect advertising effectiveness are unclear.

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[16] Please note that the study reports neither the data collection methodology employed, nor the sample size or respective click rates. Those data, though, would be required to obtain a reliable estimate of the true effect size of employing targeted vs. non-targeted advertisements.

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Source	Targeting Method	Percentage Increase in Advertising Effectivenss[a]					
		Click Rate	Conversion Rate	Purchase Intentions	Brand Awareness	Brand Attribute	Ad Recall
ACADEMIC STUDIES							
Goldfarb and Tucker (2011)	Contextual			positive			neg.
Tucker (2011)	Social network		~ 180 - 340				
INDUSTRY STUDIES							
Audience Science (2009)	Behavioral					33 - 49	
BVDW (2009)	Predictive behavioral	69					
Ferber (2005)	Behavioral	94 - 225	< 3,000				
NAI (2010b)	Behavioral		142.9				
Nugg.ad (2010)	Predictive behavioral	232		13 - 17	42 - 50		
Value Click (2010)	Behavioral, retargeting		101				
Yan et al. (2009)	Behavioral, keyword		< 670				

[a] Compared with non-targeted campaign

Table 3: Results of Selected Studies on the Effectiveness of Targeted Advertising Campaigns

2.3   Intrusiveness as a Risk to Targeting Effectiveness

There are two research streams relevant to better understanding the potential impact of privacy concerns on advertising effectiveness. One research stream is based on the ELM and studies how consumers' affective response to an advertising stimulus mediates advertising effectiveness (see section 2.3.1). A related research stream studies the causes and consequences of advertising intrusiveness (see section 2.3.2). In combination, their results suggest that targeting can constitute a risk to advertising effectiveness when causing privacy concerns.

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2.3.1 Attitude toward an Advertisement as a Mediator of Advertising Effectiveness

Consumers' attitude towards an advertisement constitutes an affective construct representing consumers' favorable or unfavorable feelings toward a particular advertisement (MacKenzie, Lutz and Belch 1986).[17] According to Lutz (1985) attitude towards an advertisement (Att_{ad}) can be defined as a "predisposition to respond in a favorable or unfavorable manner to a particular advertisement stimulus during a particular advertisement exposure occasion" (p. 46). Beginning in the 1980s, many researchers have empirically shown that consumers' attitude toward a particular advertisement affects advertising effectiveness (e.g., Lutz, MacKenzie and Belch 1983; Mitchell and Olson 1981; Shimp 1981). They found that consumers' attitudes toward a particular advertisement stimulus are transferred to their attitude toward the advertised brand (Muehling 1987). This mediation effect of consumers' attitude towards an advertisement on advertising effectiveness can be explained by classical conditioning implying that, as a result of contiguous presentation, an advertised brand elicits the same affective response as an affectively valenced advertisement itself (Gresham and Shimp 1985; Mitchell and Olson 1981). Furthermore, the mediation effect can be explained by semantic memory which can be conceptualized as a network of cognitive representations (Anderson 1976). If product beliefs are considered as a semantic memory structure, a visual image and the corresponding beliefs related to a brand advertisement might be activated from memory when a consumer is asked to evaluate a brand (Mitchell and Olson 1981).

McKenzie, Lutz and Belch (1986) systematically explored the way in which Att_{ad} mediates brand attitudes (Att_B) and purchase intentions. They tested different structural models and found that a dual mediation hypothesis, presented in Figure 4, is most suitable to describe the relationships between cognitive, affective, and conative responses to an advertisement. The dual mediation hypothesis posits that in addition to a direct link between Att_{Ad} and Att_B, an indirect causal link exists

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[17] Please note that although affective in nature, this construct is subsumed under the general term 'cognitive processes' in this dissertation.

between Att$_{Ad}$ and Att$_B$ which is mediated by brand cognitions (MacKenzie, Lutz and Belch 1986). Several subsequent studies found support for the dual mediation hypothesis (e.g., Brown and Stayman 1992; Homer 1990). With regard to the ELM serving as a theoretical basis for studying advertising effectiveness, an important research question related to whether Att$_{Ad}$ operates as a peripheral cue or whether central processing predominates in the formation of Att$_{Ad}$ (e.g., Lutz, MacKenzie and Belch 1983).

The Dual Mediation Hypothesis of Attitude to Ad and Advertising Effectiveness (MacKenzie and Lutz 1986)

| Ad cognitions | → | Attitude to Ad |

| Brand Cognitions | → | Attitude to Brand | → | Purchase Intention |

Examples of Further Proven Central and Peripheral Antecedents of Attitude to Ad

| Ad Credibility | Ad Perceptions | Ad Attention | Ad Size | Use of Humor |
| Ad Skepticism | Attitude toward Advertising | Attitude toward Advertiser | Ad Repetition | Use of Images |

More central .... *More peripheral*

Figure 4: The Dual Mediation Hypothesis of Advertising Effectiveness

McKenzie and Lutz (1989) found that there are both central as well as peripheral antecedents of Att$_{Ad}$. Within a set of five different tested antecedents, *attitude toward advertiser* has the strongest influence on Att$_{Ad}$. Attitude toward the advertiser is a "learned predisposition to respond in a consistently favorable or unfavorable manner toward the sponsoring organization" (p. 58). This predisposition has peripheral "spillover effects" (p. 53) on consumers' reactions to ads from the advertiser. *Attitude toward advertising in general*, is another peripheral cue with only a weak effect on Att$_{Ad}$. *Ad perceptions* are the second largest predictor of Att$_{Ad}$. Ad perceptions are cognitions related to executional factors of the advertisement stimulus. Thus, the processing and interpretation of

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these executional characteristics is a central process related to Att_{Ad}. *Ad credibility*, representing consumers' perceptions of the truthfulness and believability of an advertisement, constitutes another central antecedent of Att_{Ad}.[18]

Building upon MacKenzie and Lutz' (1989) findings, Homer and Yoon (1992) found that skepticism and attention constitute additional affective antecedents on Att_{Ad}. Similarly, based on Friedstad and Wright's (1994) persuasion knowledge model, Campbell (1995) found that consumers' inferences about an advertisers' manipulative intent have a negative effect on Att_{Ad}. More recent studies on factors influencing consumers' attitude towards an advertisement have focused on tangible executional elements of advertisements, such as the size and the repetition of an advertisement (Pornpitakpan 2004), the use of humor (Lammers 1991; Pornpitakpan and Tan 2000), sexual images (Jones and Reid 2010) or sex appeal (Geng Cui and Xiaoyan Yang 2009), or the matching of text and pictures (Mannetti et al. 2010). Furthermore, whereas MacKenzie, Lutz and Belch (1986) assumed an indirect link from Att_{Ad} on purchase intention through Att_B, Lord, Lee and Sauer (1995) found that Att_{Ad} can even have a direct link to purchase intentions. This finding further emphasizes the important effect consumers' attitudes towards advertisements have on advertising effectiveness.

2.3.2 Intrusiveness as an Antecedent of Attitude toward an Advertisement

A related research stream regarding consumers' attitudes towards advertisements aims at understanding to what extent consumers perceive advertisements as disturbing or annoying. Research on advertising intrusiveness focuses less on theoretically analyzing and complementing the ELM but rather on finding out when consumers develop negative attitudes towards advertisements (e.g., Edwards, Li and Lee 2002; Greyser 1973; Li, Edwards and Lee 2002; McCoy et al. 2008). This research is particularly relevant in an Internet context where consumers' flow of actions and cognitions are often interrupted through advertisements such as pop-ups or pop-unders (McCoy et al. 2008; Rettie 2001)

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[18] Source-credibility may also induce peripheral processing, though (Lord, Lee and Sauer 1995).

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and where consumers report finding advertisements particularly disturbing and annoying (McCoy et al. 2007).

Li, Edwards and Lee (2002) conceptualized intrusiveness as a cognitive process in which a consumer may recognize an advertisement as disturbing. The major source of advertising intrusiveness is the interruption of consumers' goals through an advertisement (Edwards, Li and Lee 2002). Against this background, according to McCoy (2008) intrusiveness is a construct measuring how much an advertisement causes an unwelcomed cognitive distraction from users' current tasks. Several studies show that intrusiveness leads to negative emotions, such as irritation or annoyance (Edwards, Li and Lee 2002; Greyser 1973; McCoy et al. 2008). Irritation can be defined as a measure of dislike of the advertisement a consumer has seen (Aaker and Bruzzone 1985; Wells, Leavitt and McConville 1971), i.e., a negative affective response which McCoy (2008, p. 673) views as a "temporary state of discomfort". Consequently, advertising intrusiveness constitutes an antecedent of Att_{ad} as described in 2.3.1.

Furthermore, four recent studies demonstrate that advertising intrusiveness and the resulting ad irritation lead to cognitive as well as behavioral ad avoidance (Edwards, Li and Lee 2002; Li, Edwards and Lee 2002; McCoy et al. 2008; Morimoto and Macias 2009). Examples of behavioral ad avoidance are closing a pop-up (Li, Edwards and Lee 2002) or changing a TV channel (Abernathy 1991). Cognitive ad avoidance consists of ignoring an ad and focusing on something else (Krugman and Johnson 1991). According to Edward, Li and Lee (2002), reactance is the underlying force of consumers' responses to advertisements they deem intrusive—a finding, which Morimoto and Marcias (2009) also generated in the context of unsolicited emails, also known as spam. Psychological reactance is a motivational state arising in a person who perceives his freedom to be threatened which leads to resistance and attempts to regain control of a situation (Brehm and Brehm 1981).

2.3.3 The Need for a Better Understanding of Intrusiveness in the Context of Targeted Online Advertising

In conclusion, there are two ways in which the perceived intrusiveness of particular advertisements impacts adverting effectiveness. First, perceived intrusiveness can negatively impact a consumer's affective response to an advertisement (i.e., Att_{ad}) which mediates advertising effectiveness, as described in 2.3.1. In the worst case, perceived intrusiveness would worsen consumer attitudes toward the advertised brand and decrease their purchase intentions. Second, consumers' avoidance behavior vis-à-vis intrusive ads might further reduce advertising effectiveness, as it reduces consumers' ad exposure and reduces their attention to advertisements.

The above discussion indicates that targeting might constitute a risk to advertising effectiveness if consumers perceive targeted ads as intrusive because of privacy concerns. In fact, consumers' worrying about their privacy (e.g., "Why is this particular ad shown to me—am I being profiled?", "How does this website profile its consumers?", "Is my privacy at risk?") might make them perceive targeted advertisements as intrusive.

Against this background, it is important to understand the dimensions of consumer privacy concerns, their antecedents and consequences, as well as moderators. Such an understanding allows deriving mechanisms to increase consumers' acceptance of targeted advertisements so that consumers might be more ready to allow online profiling and might have better attitudes toward targeted advertisements. This, in turn, would help websites to fund their (free) content more effectively.

3.   Consumer Privacy Concerns Online

3.1   Foundations of Consumer Privacy Concerns

According to research in psychology and sociology, privacy fulfills important functions (Margulis 2003). Individuals seek privacy to maintain personal autonomy, have time out from social demands allowing for emotional release, have room for contemplation, be able to confide information to trusted others in a protected environment, and have room for creativity (Goodwin 1992; Pedersen 1999; Westin 1967). When people perceive their privacy is threatened, they might experience negative affects and adjust their behavior (see section 3.2).

The notion of privacy and, thus, the sources of privacy concerns are multidimensional. In the 19th century, legal scholars focused on *physical privacy.* Warren and Brandeis (1890) defined privacy as the right to be let alone. Prosser (1960) specified this definition by conceptualizing privacy as freedom from intrusion of a person's seclusion or solitude. Thus, physical privacy allows individuals to control unwanted intrusions into their environment (Goodwin 1991). With the growth of direct marketing, the usage of information technology in organizations, and more recently the Internet as well as mobile communication devices, the academic focus has shifted to *information privacy* (e.g., Malhotra, Kim and Agarwal 2004; Milne and Gordon 1993; Phelps, Nowak and Ferrell 2000). According to Westin (1967) information privacy refers to an individual's ability to control when, how, and to what extent information about him or her is transmitted to others. This conceptualization implies that in a marketing context, the critical element of consumer information privacy is not information disclosure per se, but rather the level of control consumers have over the collection and usage of their information by marketers (e.g., White 2004; Youn 2009). Research on the construct of consumer privacy concerns confirms the importance of control but also identifies further dimensions.

Empirical consumer privacy research spans three broad areas: (1) Privacy researchers study the construct of consumer privacy concerns (see section 3.1.1) as well as the perceived sensitivity of different types of information (see section

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3.1.3). (2) The most extensive research stream studies antecedents and consequences of consumer privacy concerns (see section 3.2). (3) Furthermore, a substantial number of articles focuses on the sub-topic of factors influencing the provision of information to marketers (see section 3.3). Some of these articles base their research model on a theoretical framework, such as social exchange theory or fairness theories, which will be presented in section 3.1.2.

3.1.1 The Construct of Consumer Privacy Concerns

In order to find out what aspects consumers are concerned about in the context of information privacy, a line of research investigates psychological components of privacy (e.g., Malhotra, Kim and Agarwal 2004; Sheehan and Hoy 2000; Smith, Milberg and Burke 1996; Stewart and Segars 2002). Two articles have proven to be highly influential. In line with other privacy researchers (e.g., Buchanan et al. 2007; Dinev and Hart 2006; Stewart and Segars 2002) both articles suggest that concern for privacy constitutes a personal disposition that varies from individual to individual based on individual perceptions and values.

Smith, Milberg and Burke (1996) defined information privacy concern as the extent to which an individual is worried about the practices of organizations regarding the collection and subsequent use of his or her personal information. In an offline direct marketing context, they developed the first scale to measure privacy concerns regarding organizations' informational practices (Chellappa and Sin 2005). They named their instrument Concern for Informational Privacy (CFIP), and identified four factors as dimensions of CFIP: *collection*, *errors*, *secondary use*, and *unauthorized access*. In response to requests for a reinvestigation of CFIP in light of the emergence of technology and the Internet (e.g., Stewart and Segars 2002), Malhotra, Kim and Agarwal (2004) developed a scale called the Internet Users' Information Privacy Concern (IUIPC). Their research found three dimensions of information privacy concern: *collection*, *awareness*, and *control*. Thus, central to consumers' privacy concerns online is not only the way companies collect and handle their information, but also how

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websites inform consumers proactively about data handling practices, as well as the level of control users have over their information. The dimensions of information and control relate to the procedural fairness of the interaction with a marketer. The CFIP and the IUIPC scales are complementary (Malhotra, Kim and Agarwal 2004). In combination, they provide a comprehensive picture of the dimensions of consumers' predisposition to be concerned about their privacy, namely (1) consumers' general level of concern about marketers' *collection* of personal information due to a potential threat of (1.1) *unauthorized access*, (1.2) *secondary use*, and (1.3) *errors*; (2) their attitude about how companies collecting information should ensure consumers' *awareness* of their information practices; and (3) consumers' attitude concerning the level of *control* users should have over their information collected. This general concern for privacy influences consumers' situational attitudes and how they behaviorally respond to situations in which their privacy is potentially threatened, for example when marketers collect information for personalized marketing or targeting (Malhotra, Kim and Agarwal 2004).

With regard to consumers' different levels of privacy concerns, several authors have suggested segmentation logics which are all relatively similar (e.g., Berendt, Guenther and Spiekermann 2005; Hann et al. 2003; Sheehan 2002; Westin 2001). The segment of *privacy fundamentalists* (Berendt, Guenther and Spiekermann 2005; Cranor, Reagle and Ackerman 2000; Westin 2001), also called privacy guardians (Hann et al. 2003, 2007) or alarmed Internet users (Sheehan 2002), views privacy at a particularly high value. According to Westin (2001), those people are unlikely to voluntarily provide information to organizations, and represent about 25 percent of the U.S. population. In contrast, the segment of *privacy unconcerned* Internet users consists of people who do not care about how organizations use information about them and represent 12 to 15 percent of Americans (Cranor, Reagle and Ackerman 2000; Sheehan 2002; Westin 2001). In between those two segments are the *privacy pragmatists* (Cranor, Reagle and Ackerman 2000; Westin 2001), or circumspect and wary Internet users (Sheehan 2002). Those consumers care about privacy but are willing to provide information

in situations where they see sufficient benefits and where they believe an organization makes sure their information will not be misused (Cranor, Reagle and Ackerman 2000; Westin 2001). They represent about 63 percent of the American public (Westin 2001). Hann et al. (2007) identify two segments similar to privacy pragmatists: *convenience seekers* are willing provide information in exchange for convenience, whereas *information sellers* are willing to do this in exchange for money.

While the studies mentioned identify comparable segments, their underlying assumptions and methodologies differ. Whereas Westin (2001) segments individuals based on their general concern about privacy, Sheehan (2002) segments consumers based on their reported level of privacy concerns in particular situations from which she infers their overall privacy sensitivity. Hann et al. (2007), in turn, classify consumers based on their actual behavior. Those different approaches reveal a lack of consistency in the privacy literature. Whereas many authors studying the construct of consumer privacy concerns conceptualize privacy concerns as a *personal trait* (e.g., Buchanan et al. 2007; Dinev and Hart 2006; Malhotra, Kim and Agarwal 2004), other authors refer to privacy concern when studying *situational attitudes*, i.e., people's affective response in certain situations in which their privacy is at risk (e.g., Joinson et al. 2010; Sheehan and Hoy 2000; Wirtz, Lwin and Williams 2007). As privacy concerns as a personal characteristic are proven to influence people's situational response to privacy threats as well as their behavioral intentions (Malhotra, Kim and Agarwal 2004), the two constructs are distinct. Malhotra, Kim and Agarwal (2004), for example, measure situational privacy concerns as trusting and risk beliefs, which are influenced by the personal characteristic of IUIPC. To differentiate between the two constructs, the remainder of this document will employ the terms 'privacy concerns', 'privacy sensitivity', or 'general concern for privacy' when referring to a personal characteristic. When presenting findings on privacy concerns as a situational attitude, it will refer to 'situational privacy concerns'.

3.1.2   Theories in Consumer Privacy Research

Within the consumer privacy literature, social exchange theory and justice theories have proven to be particularly influential in explaining how consumers conceive privacy concerns and react to various forms of data collection.[19] At the same time, a high number of empirical consumer privacy studies has not been built upon a particular theory (e.g., Joinson et al. 2010; Meinert et al. 2006a; Tezinde, Smith and Murphy 2002), but rather derived hypotheses from practical observations or related studies.

3.1.2.1   Social Exchange Theory

Many privacy researchers argue that the collection of information for marketing purposes can be viewed as a 'social exchange' in which the consumer renders some privacy in exchange for some benefits (e.g., Chellappa and Sin 2005; Hui, Teo and Lee 2007; Malhotra, Kim and Agarwal 2004; Milne and Gordon 1993; White 2004; Xie, Teo and Wan 2006). Most studies employing a social exchange framework in the context of information privacy seek to identify factors influencing consumers' provision of information for marketing purposes.

Theoretical background. Social exchange theory (SET) (e.g., Blau 1964; Homans 1961; Thibaut and Kelley 1959) is a theoretical approach within sociology and social psychology seeking to understand exchange relationships between individuals over the course of one or repeated interactions (Emerson 1976). As such, it does not constitute a rigid theory but rather a theoretical frame that might incorporate other theories (Emerson 1976). In its most general form, social exchange theory proposes that individuals perform a subjective evaluation of their relationships with regard to costs and rewards (Carrell and Dittrich 1978). As this evaluation aims to maximize their own utility, individuals weight the potential outcomes of different courses of actions (Murninghan 1995). Consequently,

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[19] Some authors also refer to social contract theory in their privacy studies (e.g., Culnan 1995; Malhotra, Kim and Agarwal 2004; Milne and Gordon 1993; see also chapter 4). Furthermore, singular articles are based on theory of planned behavior (Lwin and Williams 2003), choice

individuals' cost-benefit assessment guides their subsequent behavior such that they only participate in an exchange relationship if their expected rewards outweigh or at least compensate their costs resulting from participation (Thibaut and Kelley 1959).[20]

Social exchange theory in privacy research. With regard to the cost-benefit evaluation proposed by SET, the privacy literature describes a corresponding process known as *privacy calculus* or *calculus of behavior* (Laufer and Wolfe 1977). In this privacy calculus, individuals weight social or economic benefits of revealing information against the associated privacy cost (Laufer and Wolfe 1977). Although this early research on a 'balancing test' in the context of information privacy focuses on interpersonal situations, it has also proven to be applicable in a commercial context. In order to study consumer privacy behavior in a marketing context, several researchers have employed a social exchange perspective by assuming a utilitarian privacy calculus (e.g., Culnan and Bies 2003; Lwin and Williams 2003; White 2004; White et al. 2008; Xie, Teo and Wan 2006). These studies seek to understand the conditions under which consumers are willing to provide information for marketing purposes. The assumed privacy cost usually relates to the perceived risks of providing information (Hann et al. 2003; Youn 2009). Such risks may relate to *monetary harm*, for example resulting from an abuse of credit card numbers, identity theft or the sharing of sensitive information with government authorities or companies (e.g., Buchanan et al. 2007; Milne 2003; Milne, Rohm and Bahl 2004; Miyazaki and Fernandez 2001; Norberg et al. 2007; Youn 2009). Or they may relate to *psychological harm* resulting from the annoyance of privacy intrusions, for example though recurring spam, as well as anxiety or embarrassment related to a potential disclosure of personal information (Dinev and Hart 2006; White 2004). Overall privacy studies based on SET found that consumers are usually willing to provide personal

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theory (Hui, Teo and Lee 2007), or information processing theory of motivation (Hann et al. 2007).

[20] Social exchange theory also makes propositions regarding individuals' satisfaction and power within relationships, which is particularly relevant to research in organizational science (Murninghan 1995), but is not a focus of this dissertation.

information in spite of privacy concerns if they receive sufficient benefits (see section 3.3).

Link between SET and justice theories in a privacy context. Based on Bagozzi's (1975) argument that marketing can be considered an exchange, some privacy researchers employ SET as a frame in which to discuss the role of fairness perceptions in the context of information privacy concerns (e.g., Ashworth and Free 2006; Culnan and Bies 2003; Sheehan and Hoy 2000; see also the review in next the section 3.1.2.2). They base their propositions on research by social psychologists who systematically introduced psychological justice theories (e.g., Adams 1965; Thibaut and Walker 1975) within the general frame of SET. Their findings suggest that the cost-benefit assessment individuals perform when deciding whether to provide information is not merely a rational cognitive process assessing the risks, but also includes an assessment of justice (Culnan and Armstrong 1999; Sheehan and Hoy 2000; Son and Kim 2008) as will be detailed in the next section.

3.1.2.2   Psychological Justice Theories

Several authors argue that consumers' privacy concerns revolve mainly around the question of whether marketers deal with their information in a fair manner (e.g., Culnan and Armstrong 1999; Culnan and Bies 2003; Malhotra, Kim and Agarwal 2004). According to those researchers, at the core of consumer privacy concerns are consumers' fairness perceptions regarding a marketer's information practices. This view is consistent with the appreciation of privacy within U.S. law that considers consumer privacy rather as a command of fairness than an absolute right (see section 2.1.3). In this context, Ashworth and Free (2006) systematically derived how consumer privacy concerns relate to established psychological theories of justice. They argue that consumer privacy concerns relate to two facets of their interaction with a marketer. When dealing with a marketer collecting information, consumers assess the possibility of harmful outcomes, such as the risks of information abuse or identity theft. This process is also referred to as

threat appraisal (Rifon, LaRose and Lewis 2007). This threat appraisal is reflected in the privacy concerns dimension of *collection* as identified by Malhotra, Kim, and Agarwal (2004). Additionally, consumers make judgments regarding the fairness of the interaction. These judgments are reflected in the privacy concerns dimensions of *awareness* and *control*. Both kinds of judgments influence situational privacy concerns. Thus, psychological justice theories (e.g., Adams 1965; Bies and Moag 1986; Greenberg 1993; Thibaut and Walker 1975) are particularly apt in explaining how consumers conceive privacy concerns (Ashworth and Free 2006).

Theoretical background. There are two broad components of justice, namely distributive and procedural justice (e.g., Homans 1961; Thibaut and Walker 1975). Some authors also suggest interactive justice as an additional dimension of justice (e.g., Bies and Moag 1986; Colquitt et al. 2001; Greenberg 1993). However, it is appropriate to assume that judgments related to procedural justice also cover interactive justice because both reflect the same underlying concern in the context of information privacy (Ashworth and Free 2006).

Distributive justice and privacy concerns. Distributive justice refers to the perceived fairness of the allocation of outcomes that a party receives from another in an exchange relationship (Homans 1961; Martinez-Tur et al. 2006). There are a number of theories of distributive justice, which are all comparative in nature (Ashworth and Free 2006). They assume that individuals compare their own output to some referent standard based on concepts such as accomplishment, need, rights, or duties (Deutsch 1975). In order to perceive an exchange as fair, individuals' outputs need to meet the referent standard people believe they are entitled to based on the respective concept of justice they apply. In this context, according to Ashworth and Free (2006), perceptions of distributive justice can help explain why consumers consider marketers' selling of their personal information unacceptable, regardless of the intended use of the information. Supposedly, a company's monetization of consumers' information increases a company's outcome without increasing the outcome of the consumer (Ashworth and Free 2006). Consequently, distributive justice can explain why consumers

report a lower level of situational privacy concerns when they receive a compensation—a result obtained in several studies (e.g., Sheehan and Hoy 2000; Youn 2009; see also section 3.2.1).

Procedural justice and privacy concerns. Procedural justice refers to the perceived fairness of procedures and the way they are enacted (Leventhal 1980; Thibaut and Walker 1975). In its original sense, it refers to the rules and policies used to allocate outcomes, which is why a 'voice', i.e., an individual's possibility of influencing the material outcomes of the procedures, is important in influencing justice perceptions (Ashworth and Free 2006). In addition to giving a 'voice' to individuals, respect is another central determinant of procedural justice (Ashworth and Free 2006; Miller 2001). An important way that individuals make judgments about procedural justice is by comparing the way they are treated to normative standards of respectful behavior (Miller 2001), i.e., to prescriptive norms (Cialdini 1993; Cialdini and Trost 1998; for a discussion of norms, see also section 4.2.). Ashworth and Free (2006) suppose that there are a number of standards, or prescriptive norms, conveying a company's respect for and value of its consumers (Ashworth and Free 2006). The norms of *openness* and *honesty* require that marketers provide consumers with clear and concise descriptions of information practices (Ashworth and Free 2006). These norms related to procedural justice might explain *awareness* as a dimension of IUIPC. The norm of *permission* requires marketers to ask for consent, before collecting information, while the norm of *information access* would allow consumers to view, change or delete stored information on them (Ashworth and Free 2006). The role of these two norms in influencing privacy concerns might be reflected in the IUIPC dimension of *control*. Besides communicating respect and value, allowing consumers to control how their information is collected and subsequently used enables consumers to better evaluate the risks associated with information collection, namely unauthorized access, secondary use, and errors.

Interactive justice and privacy concerns. Interactive Justice refers to the perceived fairness of interpersonal treatment by another party (Bies and Moag 1986). Some authors argue that interactive justice might be further subdivided into

informational justice and *interpersonal justice* (Colquitt et al. 2001; Greenberg 1993). Informational justice relates to the disclosure of information on how outcomes are determined. In the context of information privacy, just like procedural justice, it relates to the prescriptive norms of *honesty* and *openness*. Interpersonal justice is comparable to the original definition of interactive justice. The fairness of interpersonal treatment conveys respect for an individual during a social interaction (Ashworth and Free 2006). As such, interactive justice and procedural justice serve the same function in a privacy context.

Against this background, Ashworth and Free (2006) conclude that different components of justice reflect two basic concerns consumers have in the context of information privacy, namely the *concern for the personal material outcome* and the *concern for being treated with respect*. Therefore, distributive and procedural justice are the overarching relevant fairness dimensions in the context of information privacy.

3.1.3 Perceived Sensitivity of Different Types of Information

Information sensitivity is defined as the perceived intimacy of certain data (Margulis 2003; Westin 2003). Sensitive information is information that can cause harm to the person it relates to if released to or shared with others (Gandy 1993). In a commercial context, the potential harms resulting from a release of sensitive information can be classified into two categories. First, it can consist of risks to an individuals' *material wellbeing* resulting from identity theft or credit card fraud (Ashworth and Free 2006; Miyazaki and Fernandez 2000), a disadvantageous processing by insurance companies or tax authorities (Dinev and Hart 2006), as well as price discrimination by retailers or service providers (Acquisti and Varian 2005; Wathieu 2003). Second, the harm associated with the releasing or sharing of sensitive information can relate to an individual's *cognitive and affective wellbeing*, thereby harming the psychological functions of privacy, such as personal autonomy, emotional release, or contemplation (see section 3.1). More specifically, psychological harm can consist of embarrassment, loss of face, or

general annoyance over the loss of control over personal information (White 2004). Thus, the higher the potential harm, i.e., the associated risks of data collection, the more sensitive individuals perceive that information.

There are two major approaches employed in the privacy literature to determine the relative sensitivity of different types of information. It is either measured directly by asking consumers to rate the sensitivity (Hui, Teo and Lee 2007; Xie, Teo and Wan 2006) or associated risks (Treiblmaier and Chong 2007) of certain data, or it is inferred from consumers' willingness to provide certain information to marketers, which is either measured through surveys (Cranor, Reagle and Ackerman 2000; Phelps, Nowak and Ferrell 2000) or experiments (White 2004). Overall, those studies show that data can be classified into five categories with regard to their perceived sensitivity, as can be seen in Figure 5.[21]

Level of risk regarding material and / or cognitive and affective well being				
High		*Medium*		*Low*
Personal identifiers, e.g.	**Financial and physical well being**, e.g.	**Purchase behavior**, e.g.	**Demogra-phics**, e.g.	**Lifestyle**, e.g.
▪ SSN ▪ Credit card number ▪ Telephone number	▪ Income ▪ Medical records	▪ Shopping locations ▪ Products purchased	▪ Gender ▪ Martial status ▪ Age	▪ Interests ▪ Hobbies ▪ Media taste

Figure 5: Perceived Sensitivity of Different Data Categories

Information deemed most sensitive constitutes *personal identifiers*, involving a high level of monetary risk if abused. They include data such as Social Security Numbers (Cranor, Reagle and Ackerman 2000; Phelps, Nowak and Ferrell 2000), credit card numbers (Cranor, Reagle and Ackerman 2000; Treiblmaier and Chong 2007; Xie, Teo and Wan 2006) or telephone numbers (Cranor, Reagle and

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[21] Some slight variations in the perceived sensitivity of certain information in these studies might be due to the operationalization of the construct and to the cultural context of the studies.

Ackerman 2000; Hui, Teo and Lee 2007; Phelps, Nowak and Ferrell 2000; Treiblmaier and Chong 2007; Xie, Teo and Wan 2006). Generally, individuals are willing to share these kinds information the least.

The class of information that comes second in perceived sensitivity contains *information on individuals' financial and physical wellbeing*, such as income (Cranor, Reagle and Ackerman 2000; Hui, Teo and Lee 2007; Phelps, Nowak and Ferrell 2000; Xie, Teo and Wan 2006) and medical records (Cranor, Reagle and Ackerman 2000). The abuse of those might not only entail a monetary risk but could also be embarrassing. Thus, information on individuals' political or religious views would probably belong to this group, too.

The third group consists of *purchase related data* and is of medium sensitivity. It comprises information on where individuals usually shop and what they buy (Phelps, Nowak and Ferrell 2000). However, when purchase related data include potentially embarrassing information, such as the purchase of contraceptives or erotic magazines, the information is perceived as being highly sensitive and consumers are not comfortable providing it to marketers (White 2004).

The fourth category comprises *demographic information*, such as marital status, age, education, or occupation (Cranor, Reagle and Ackerman 2000; Hui, Teo and Lee 2007; Phelps, Nowak and Ferrell 2000; Xie, Teo and Wan 2006). Interestingly, while consumers perceive this information as more sensitive than lifestyle-related information (Xie, Teo and Wan 2006), they are most willing to provide demographic information to marketers (Phelps, Nowak and Ferrell 2000). This might be due to fact that, although relatively intimate, this information is usually well-known by other people within their social environment.

The class of information generally deemed least sensitive consists of *lifestyle information* relating to consumers' interests like hobbies, media usage, favorite television programs, or tastes (Cranor, Reagle and Ackerman 2000; Phelps, Nowak and Ferrell 2000; Xie, Teo and Wan 2006). This information is highly relevant to marketers when segmenting a market and targeting advertisements (see

section 2.2 presenting the activities-interest-opinion approach to lifestyle segmentation).

3.1.4   Consumer Privacy Concerns and the Internet

The construct of consumer privacy concerns as well as its antecedents and consequences in an online environment are predominantly a logical extension of its fundamentals in an offline context (Peltier, Milne and Phelps 2009). A limited number of studies in the context of direct mail and relationship marketing published in the 1990s (e.g., Campbell 1997; Culnan 1995; Milne 1997; Nowak and Phelps 1992; O'Malley, Patterson and Evans 1997) constitute seminal work on privacy concerns resulting from the commercial usage of consumer information. While these studies deliver important insights, for example regarding the role of trust and fairness (e.g., Culnan and Armstrong 1999; Milne and Gordon 1993), the emergence of the Internet requires further research on the construct, the causes, and the consequences of consumer privacy concerns (Peltier, Milne and Phelps 2009; Stewart and Segars 2002). This is because the Internet entails a vast range of new opportunities for companies to collect and process consumer information (Peltier, Milne and Phelps 2009), which go far beyond the traditional forms of consumer surveillance, such as point-of-sale information (Ashworth and Free 2006). Besides collecting users' information during purchases in online stores, companies can track online surfers' behavior on general interest websites and combine that information with information collected from other sources (see section 2.1.2). Furthermore, online marketers have the ability to access and collect information about online surfers in a way that surfers might not be able to detect and avoid (Ashworth and Free 2006; Miyazaki 2008; Miyazaki and Fernandez 2000; see also section 2.1.2). As a result, consumers can no longer rely on their intuitive sense of place and presence governing their behavior to ensure that they are not watched or tracked (Rust, Kannan and Peng 2002). Against this background, Westin (2001) reports that within about a decade, consumer privacy attitudes changed substantially. While in the 1980s people expressed a modest concern for privacy, already by 2001, they had become significantly more privacy

sensitive and overall, reporting a higher level of privacy concerns (Westin 2001). Today, more than a third of Internet users in the UK believe that going online per se constitutes a risk to privacy (Dutton, Helsper and Gerber 2009). Overall, it appears that consumers experience data collection for electronic or Internet marketing more disturbing than for traditional marketing channels such as direct mail (e.g., Marimoto and Chang 2006).

This increasing consumer concern brought about a substantial number of scholarly articles studying consumer privacy concerns in an Internet context (e.g., Hoffman, Novak and Peralta 1999; O'Neil 2001; Rust, Kannan and Peng 2002). Many of these studies stress that the Internet has entailed a loss of consumers' control over their information (e.g., Hoffman, Novak and Peralta 1999; Malhotra, Kim and Agarwal 2004; Sheehan and Hoy 2000). This is considered problematic because control over personal information constitutes a major prerequisite for information privacy to exist (see section 3.1). It might also explain why Malhotra, Kim and Agarwal (2004) identifed control and awareness as dimensions of privacy concerns in contrast to the study conducted by Smith, Milberg and Burke (1996) in an offline context (see section 3.1.1). As the emergence of the Internet entails new aspects that are relevant to studying consumer privacy concerns, the following subchapter (3.2) will focus on findings regarding consumer privacy concerns in an Internet context.

3.2   Findings on Consumer Privacy Concerns Online

An extensive body of literature in the fields of marketing, IS, and public policy seeks to better understand the causes and consequences of consumer privacy concerns in a commercial Internet context. Nearly all papers published in the past decade report results of empirical studies that examine antecedents, consequences, and/or factors moderating or mediating consumer privacy concerns in an e-commerce context. These studies mostly employ surveys (e.g., Chen and Rea 2004; Joinson et al. 2010; Son and Kim 2008; Youn 2009) or laboratory experiments in which survey respondents are presented with a certain scenario

and asked to report their likely response to the situation described (e.g., Lwin, Wirtz and Williams 2007; Malhotra, Kim and Agarwal 2004; Miyazaki 2008). These studies have helped to ensure a better understanding of the cognitive processes related to consumer privacy concerns and resulting behavioral intentions. They mostly relied on structural equation modeling (SEM) to validate the hypothesized relationships (e.g., Chellappa and Sin 2005; Lwin, Wirtz and Williams 2007; Malhotra, Kim and Agarwal 2004). Studies employing behavioral data are rare. The few existing studies that employ real behavioral data (Goldfarb and Tucker 2011a; Tucker 2011) do not combine them with survey data. Therefore, they can make suggestive inferences on the effect of potential privacy concerns on the observed behavior, but not validate those assumptions with self-reported data.

3.2.1   Antecedents of Consumer Privacy Concerns Online

Factors influencing consumer privacy concerns, i.e., consumers' situational attitudes and personal characteristics, can be classified into external factors, i.e., factors that cannot be influenced immediately by a marketer, situational factors that marketers collecting information can influence, as well as individual specific factors, i.e., personal traits of the affected consumers, as can be seen in Table 4.

	Definition of Privacy Concerns	
	Situational Attitude	**Personal Characteristic**
External Factors	▪ **Privacy regulations** (Lwin and Wirtz 2009) ▪ **Corporate business policy** (Lwin and Wirtz 2009)	
Situational Factors	▪ **Sensitivity of information collected** (Malhotra, Kim, and Agarwal 2004; Phelps, Nowak, and Ferrell 2000; Sheehan and Hoy 2000) ▪ **Contextual congruency** (Lwin and Wirtz 2007; Sheehan and Hoy 2002) ▪ **Fairness perceptions** (Wirtz and Lwin 2009)	▪ **Fairness perceptions** (Malhotra, Kim, and Agarwal 2004)
Individual Specific Factors	▪ **Internet experience** (Malhotra, Kim, and Agarwal 2004; Miyazaki and Fernandez 2001; Youn 2009) ▪ **Demographics: education** (Malhotra, Kim, and Agarwal 2004), and **age** (Malhotra, Kim, and Agarwal 2004)	▪ **Perceived Internet privacy risk** (Dinev and Hart 2006) ▪ **Perceived vulnerability to privacy risks** (Youn 2009) ▪ **Demographics: gender** (Chen and Rea 2004; Sheehan 1999; Youn 2009), **education** (O'Neil 2001; Sheehan 2002), and **age** (O'Neil 2001; Sheehan 2002)

Table 4: Proven Antecedents of Privacy Concerns

3.2.1.1 External Factors

Two external factors have been proven to influence consumers' situational privacy concerns when surfing on websites. Although not explicitly tested in the relevant studies, an explanation of this effect might be that both factors may affect situational privacy concerns by influencing consumers' assessment of privacy risks and the associated expected cost of privacy breaches (see section 3.1.2).

Regulation. Lwin and Wirtz (2007) found that the degree to which consumers are concerned about their privacy differs depending on national privacy regulations. More specifically, the stronger respondents perceive the level of protection of national privacy laws, the lower their situational privacy concerns (Lwin, Wirtz and Williams 2007; Wirtz, Lwin and Williams 2007). Obviously, this factor can

hardly be influenced by a marketer, and if at all, only in the mid-term through extensive lobbying.

Corporate business policy. A strong business policy a website outlines through its privacy policy also has an effect on situational privacy concerns (Wirtz, Lwin and Williams 2007). It constitutes an external factor that a website can influence immediately. However, it is only effective in reducing situational privacy concerns when a website collects low sensitivity data; thus, information sensitivity mediates the effectiveness of a strong privacy policy (Lwin, Wirtz and Williams 2007).

3.2.1.2   Situational Factors

Sensitivity of information. The intensity with which consumers worry about their privacy depends on the type of information a marketer is collecting in a specific situation. Specifically, Malhotra, Kim and Agarwal (2004) found that the collection of highly sensitive information results in lower trusting beliefs and higher risk beliefs than the collection of less sensitive information. This finding might be explained by the fact that the less sensitive the information collected, the lower the potential harm of an abuse of that information (see previous section, 3.1.3). The role of information sensitivity was also confirmed by Sheehan and Hoy (2000) in an Internet context as well as by Phelps, Nowak and Ferrell (2000) in a traditional direct marketing context.

Congruency. According to Lwin and Wirtz (2007), consumers' situational privacy concerns are lower if the information being collected is relevant to the context of an e-commerce transaction. This might be due to the fact that in the case of a high level of congruency, consumers can better comprehend the purpose of data collection so that data collection appears to them to be more justified (White et al. 2008). Thus, they might consider a harmful use of those data less likely. This assumption appears to be supported by Sheehan and Hoy (2000) and Sheehan (2002) who found that consumers are less concerned about their privacy when information is only used for the purpose of a single transaction, but concerns

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increase as data are used beyond that transaction. The effect of congruency is moderated by the sensitivity of the information collected, in that congruency is only effective in reducing privacy concerns if information collected is not highly sensitive (Lwin, Wirtz and Williams 2007).

Fairness. Consumers' perceptions of a websites' fairness when interacting with them influences how much they worry about their privacy in a given situation (Wirtz and Lwin 2009; see also the literature review in section 3.1.2.2). Their empirical finding is consistent with earlier studies yielding that consumers are more concerned about their privacy when knowing that a website tries to collect data without their awareness, i.e., when procedural justice is not given (Sheehan 2002; Sheehan and Hoy 2000). A finding relating to distributive justice includes a decrease in privacy concerns when surfers receive something valuable in exchange for data collected (Sheehan 2002; Sheehan and Hoy 2000).

3.2.1.3 Individual Specific Factors

Several studies identify factors influencing privacy concerns which relate to individuals' *beliefs and attitudes*, *demographics*, and *experiences*. In contrast to external and situational factors, those individual specific factors mostly influence consumers' privacy sensitivity, which, in turn, influences situational privacy concerns, such as trusting and risk beliefs.

Beliefs and attitudes. According to a survey by Dinev and Hart (2006), an individual's perceived Internet privacy risk influences his general level of privacy concerns regarding the Internet. Youn (2009) found that for young adolescents, privacy concerns are higher if they perceive themselves as vulnerable to privacy risks.

Demographics. Youn (2009) reported that young female adolescents are generally more privacy concerned than young male adolescents, thereby confirming a finding on the impact of *gender* by Sheehan (1999) based on an adult sample in an offline context. In line with this, Chen and Rea (2004) explained a similar result by the fact that women have been found to process information in more detail

(Meyers-Levy and Maheswaran 1991), and are thus more aware of and sensitive to changes in their environments than men. However, the authors also found that men are more likely to engage in active privacy protection behaviors as they tend to be more technologically savvy. That might explain why Malhotra, Kim and Agarwal (2004) did not find a significant impact on Internet users' privacy sensitivity or on situational privacy concerns. Furthermore, consumers with a high level of *education* and *older* people are more privacy sensitive (O'Neil 2001; Sheehan 2002), and thus experience a higher level of situational privacy concerns (Malhotra, Kim and Agarwal 2004) than younger consumers and consumers with a lower level of education. While this finding is consistent across the Internet privacy literature, no study so far has delivered a well-grounded theoretical explanation.

Experience. Several studies confirm that the more savvy and Internet experienced people are, the lower their situational privacy concerns (Malhotra, Kim and Agarwal 2004; Miyazaki and Fernandez 2001; Youn 2009). It appears that these people rely more on their own experiences than on media stories when assessing privacy risks. This assumption is based on the fact that exposure to reports on information abuse increases surfers' situational privacy concerns (Malhotra, Kim and Agarwal 2004).

3.2.2   Consequences of Consumer Privacy Concerns Online

While situational privacy concerns may also have psychological consequences like fear, discomfort, annoyance, or embarrassment (e.g., Dinev and Hart 2006; Norberg et al. 2007; White 2004; see also the systematic explanation of this process in section 3.1), the literature in a commercial Internet context has focused on its behavioral consequences (e.g., Chellappa and Sin 2005; Goldfarb and Tucker 2011a; Malhotra, Kim and Agarwal 2004).

Nearly all the studies on the behavioral consequences of privacy concerns rely on self-reported data on respondents' behavioral intentions (if not otherwise stated, the empirical results presented in the following subchapters stem from self-

reports). It is important to note that these results might not fully reflect respondents' real behavior when confronted with privacy threats. According to the theory of reasoned action (Fishbein and Ajzen 1975), behavioral intentions depend on individuals' attitude, subjective norms, and perceived control of the outcome. Generally, research in social sciences finds that behavioral intentions do not fully translate into actual behavior, with intention-behavior correlations of about 50 percent (Norberg et al. 2007; O'Keefe 2002). Some privacy researchers have reported a notable disjunction between stated privacy attitudes, behavioral intentions, and actual privacy behavior. In an online experiment, Berendt, Günther and Spiekermann (2005) found that individuals communicated a wide range of personal information even if they had reported being highly privacy sensitive. Norberg, Horne and Horne (2007) report a finding they called 'privacy paradox': Consumers disclose much more information than their intended disclosure behavior allows. That might be due to the fact that other factors influence behavior independently of intentions, such as the routinization of behavior (Norberg et al. 2007; Ouellette and Wood 1998), and heuristic as well as selective processing of information (Berendt, Guenther and Spiekermann 2005; Norberg et al. 2007).

Consequently, while the empirical results presented in the next sections and summarized in Table 5 provide interesting insights into potential behavioral consequences of privacy concerns, consumers may engage less intensively in privacy protective behaviors in reality.

Category	Consequence
Behavioral Protection	▪ **Misrepresentation** (Lwin, Wirtz, and Williams 2007; Son and Kim 2008) ▪ **Reading of privacy notice** (Milne and Culnan 2004) ▪ **Refusal of information provision** (e.g., Dinev and Hart 2006; Malhotra, Kim, and Agarwal 2004; Sheehan and Hoy 1999) ▪ **Website avoidance** (Chellappa 2005; Sheehan and Hoy 1999; Wirtz and Lwin 2009; Youn 2009) ▪ **Reduction of online activities** (Brown and Muchira 2004)
Technological Protection	▪ **Use of privacy enhancing technology** (Wirtz, Lwin, and Williams 2007; Wirtz and Lwin 2009)
Public and Private Action	▪ **Complaining to 3rd party organization** (Sheehan and Hoy 1999; Son and Kim 2008; Wirtz, Lwin, and Williams 2007; Wirtz and Lwin 2009) ▪ **Complaining to company** (Son and Kim 2008) ▪ **Flaming of company** (Sheehan 1999) ▪ **Request for name removal** (Sheehan 1999; Wirtz and Lwin 2009) ▪ **Negative word-of-mouth** (Son and Kim 2008; Wirtz and Lwin 2009)
Response to Advertisements	▪ Potentially (as causal link not proven): **Lower click rates on advertisements** (Tucker 2011) ▪ Potentially (as only suggestive evidence): **Different**, i.e. more negative, **perception of advertisements** (Goldfarb and Tucker 2011)

Table 5: Proven Consequences of Privacy Concerns

3.2.2.1   Behavioral Protection

In order to protect themselves from privacy threats, consumers can adjust their behavior. Many studies have reported that, as a result of privacy concerns, consumers provide false information about their identity to a website (Sheehan and Hoy 1999), a behavior also referred to as *misrepresentation* (Son and Kim 2008) or *fabrication* (Lwin, Wirtz and Williams 2007). Surfers have also been found to *read privacy notices* (Milne and Culnan 2004) as privacy concerns make them place a higher importance on information transparency (Awad and Krishnan 2006). Furthermore, consumers often *refuse to provide a website with information* (e.g., Dinev and Hart 2006; Malhotra, Kim and Agarwal 2004; Sheehan and Hoy 1999), an issue that is of central concern to marketers, and one which will be discussed in more detail in section 3.3. Sometimes privacy concerns even lead to consumers' *avoidance of a website* (Chellappa and Sin 2005; Sheehan and Hoy

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1999; Wirtz and Lwin 2009; Youn 2009) or a reduction of their entire online activities, such as online purchasing (Brown and Muchira 2004).

3.2.2.2 Technological Protection

Consumers have been reported as employing privacy enhancing technologies to protect themselves from potential threats (Wirtz and Lwin 2009; Wirtz, Lwin and Williams 2007). For example, Internet users may configure their browser based on the standards offered by the *Platform for Privacy Preferences (P3P)* (Rust, Kannan and Peng 2002), a system backed by the Online Privacy Alliance (Ashworth and Free 2006; see also section 2.1.3.2). P3P offers a standard protocol to convert a privacy policy into extensible markup language (XML) that can be detected and read automatically by P3P-enabled Internet browsers such as Microsoft's Internet Explorer (Culnan and Bies 2003; Lauer and Deng 2007). Within these browser settings, a surfer can, for example, define what kind of cookies he or she wants to accept (Rust, Kannan and Peng 2002). If a surfer sets the privacy preferences in his or her browser, a P3P enabled website will signal through a message on the surfer's screen whether it meets those limits.

A growing number of privacy protection tools (Bhasin 2008) has lead researchers to predict the emergence of a *market for privacy* that will allow consumers to choose a certain level of privacy (e.g., Acquisti 2004; Anderson and Moore 2006; Rust, Kannan and Peng 2002). A market for privacy requires consumers to be willing to pay a premium for privacy protection. While Hann et al. (2003) found in a conjoint study that protection against errors, improper access, and secondary use is worth a certain dollar amount, the size of such a market might be rather small, because many consumers do not take advantage of technological possibilities to manage their privacy even if they are offered them for free (e.g., Ashworth and Free 2006; Joinson et al. 2010; Milne, Rohm and Bahl 2004). Thus, Wirtz, Lwin, and William's (2007, 2009) results on consumers' usage of privacy enhancing technology as a behavioral response to privacy concerns might be attributed to the fact that these studies rely on self-reported data. To some extent,

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they might be subject to the described disjunction between stated attitudes and actual behaviors in a privacy context.

3.2.2.3   Public and Private Action

In order to obtain better privacy protection in the future, to warn other customers about privacy threats or to express resentment or engage in retaliation, online surfers have been found to engage in different forms of public and private action (Wirtz and Lwin 2009; Wirtz, Lwin and Williams 2007). Consumers *complain to 3rd party organizations*, like TRUSTe, about perceived privacy violations (Sheehan and Hoy 1999; Son and Kim 2008; Wirtz and Lwin 2009; Wirtz, Lwin and Williams 2007). They also *complain directly to the company concerned* (Son and Kim 2008), for example in order to *request the removal of their name from a mailing list* (Sheehan 1999; Wirtz and Lwin 2009) or in order to express their anger through *flaming* (Sheehan 1999). Additionally, consumers have been found to spread *negative word-of-mouth* (Son and Kim 2008; Wirtz and Lwin 2009).

3.2.2.4   Response to Advertisements

Two studies based on real behavioral data suggest that privacy concerns may have an impact on advertising effectiveness by triggering a cognitive and behavioral response. However, the underlying cognitive mechanisms are still unclear and will be examined theoretically and empirically in chapters 5 and 6.

Goldfarb and Tucker (2011a) found that contextual targeting and increasing the obtrusiveness of an advertisement independently increase purchase intent. However, their data show that when applied simultaneously, these strategies are less effective. They supposed that this effect might be related to privacy concerns, because the negative effect of combining contextual targeting and obtrusiveness is strongest within product categories where privacy is particularly important and for people who refuse to provide information on their income.

Tucker (2011) compared click rates on targeted and personalized advertisements on Facebook before and after Facebook's change of privacy policy that made it easier for users to control their information. She found that after this policy change users were twice as likely to click on personalized ads, while there was no change in the effectiveness of ads that did not signal that they used private information. Knowing that a corporate business policy influences privacy concerns (Lwin, Wirtz and Williams 2007; Wirtz, Lwin and Williams 2007) (see also 3.2.1.1), these results suggest that situational privacy concerns lead to lower advertising effectives.

3.2.3   Trust as Moderator of Privacy Concerns

Within models comprising antecedents and consequences of consumer privacy concerns online, trust has emerged as the most important moderator of the effect of privacy concerns.

There are many definitions of trust. For example, Morgan and Hunt (1994) define trust as confidence in the reliability and integrity of an exchange partner resulting in a willingness to rely on that exchange partner. Mayer, Davis and Schoorman (1995, 2007) define trust as the willingness to be vulnerable to the actions of another party, based on the expectation that the other party will perform a certain action that one might not be able to control. In the context of information privacy, trusting beliefs refer to the degree to which people believe an organization is dependable in protecting consumers' personal information and feel secure about sharing information with that organization (Gefen, Karahanna and Straub 2003; Malhotra, Kim and Agarwal 2004; Milne and Boza 1999).

Against this background, Joinson et al. (2010) reported that trusting beliefs moderate the effect of privacy concerns on consumers' disclosure of information. Further studies have confirmed the effect of trust on consumers' willingness to interact with a company online (e.g., Malhotra, Kim and Agarwal 2004; Schoenbachler and Gordon 2002; van Slyke et al. 2006). Malhotra, Kim and Agarwal (2004) found that trusting beliefs have a negative effect of risk beliefs.

Wirtz and Lwin (2009) measured a strong correlation between situational privacy concerns and trust, with trust influencing consumers' promotion focused behavior with regard to their relationship with the company. In line with this, a study by Chellappa and Sin (2005) revealed that trust building factors such as familiarity with an organization and past experience are correlated with privacy concerns and increase consumers' likelihood of using a personalization service.

3.3   Factors Influencing the Provision of Information

As consumers' willingness to provide personal information constitutes an important prerequisite for relationship marketing (Schoenbachler and Gordon 2002), e-commerce transactions (Malhotra, Kim and Agarwal 2004) or targeted advertising, a research stream has investigated factors affecting the provision of information. With regard to consumers' perceptions and characteristics, those studies suggest that consumer privacy concerns, both as a personal characteristic and as situational attitude, have a negative influence on the provision of information (Awad and Krishnan 2006; Dinev and Hart 2006; Joinson et al. 2010; Lwin, Wirtz and Williams 2007; Malhotra, Kim and Agarwal 2004), while trust increases the provision of information (Joinson et al. 2010; Malhotra, Kim and Agarwal 2004; Schoenbachler and Gordon 2002). In order to develop recommendations for marketers, many studies have investigated tangible factors increasing disclosure. Most of these studies employed a social exchange framework, assuming that consumers perform a privacy calculus in which they weight the potential cost and benefits of providing information (see section 3.1.2.1). Table 6 provides an overview of their findings. It also illustrates that those factors derived from different theoretical foundations, such as choice theory (e.g., Hui, Teo and Lee 2007) or information-processing theory of motivation (e.g., Hann et al. 2007), can be classified as either reducing the *risks* associated with information provision or as increasing the *benefits* within *consumers' privacy calculus*. It also shows that most studies were conducted in the e-commerce context.

Study	Study Context	Theoretical Framework	Methodology (number of scenarios)	Main Evaluation Method	Findings on Factors Decreasing Risks	Findings on Factors Increasing Benefits
Chellappa and Sin 2005	E-commerce	Social exchange theory	Survey	SEM	• Familiarity • Past Experience with website	
Hann et al. 2007	E-commerce	Information-processing theory of motivation	Conjoint experiment (3*3*2*2)	Conjoint analysis	• Protections against secondary use, improper access, and errors	• Rewards: 5, 10 or 20 USD • Convenience, i.e. time-saving
Hui et al. 2007	E-commerce	Choice theory	Field experiment[a] (3*9*19)	Logit analysis	• Amount of information requested (-) • Presence of Privacy Policy	• Check between 1 and 9 Singapore Dollars
Kobsa and Teltzrow (2004)	E-commerce	na	Quasi-field experiment[b] (2)	Chi-square test	• Contextualized explanation of privacy practices	
Malhotra et al. (2004)	E-commerce	Social contract theory	Questionnaire interviews (2)	SEM	• Shopping preferences vs. financial information	
Meinert et al. (2006)	E-commerce	na	Laboratory experiment & survey (3)	ANOVA	• Contact vs. biographical vs. financial information • Strength of protection	
Metzger (2007)	E-commerce	na	Survey (3*2)	MANCOVA	• Reputation (n.s.) • Strength of protection (n.s.)	
Milne (1997)	Brick and mortar store	na	Field experiment[c] (2*2*2)	Chi-square test	• Information that third party receiving information offers relevant products • Euphemism reg. data sharing practice • No vs. asking for phone number (n.s.)	• Question format (interest in mailing list vs. opt-out)
Milne and Gordon (1993)	Direct mail	Social contract theory	Conjoint experiment (3*3*3*2)	Conjoint analysis	• Permission for future information usage required	• Coupons, discounts • Advertising relevance • Reduction of mail volume
Milne and Rohm (2000)	Direct channels	Fair Information Practices	Survey	Regression analysis	• Possibility of name removal	
Phelps et al. (2000)	Direct mail	Several, e.g. social contract theory	Survey incl. a.o. conjoint scenarios (4*3*2*2)	Different, a.o. conjoint analysis	• Demographic/lifestyle vs. purchase-related vs. financial information • Control over information usage	• Convenience (future shopping time savings vs. greater selection) • Reduction of mail volume
Schoenbachler (2002)	Relationship	Trust	Survey among recent mail oders buyers	Regression analysis	• Reputation • Perceived dependability	
Tezinde et al. (2002)	Email marketing	na	Field experiment (2*2)	Binary regression	• Affiliation (n.s.)	• Hand written note
Ward, Bridges and Chitty (2005)	E-commerce	na	Laboratory experiment & survey (2*2*2)	MANCOVA	• Request for financial information (-) • Request for name and address (n.s.)	• Price discount (n.s.) • Personalized service (n.s.)
White et al. (2004)	Brick and mortar store	Social exchange theory	Quasi-field experiment (2*2)[d]	ANOVA	• Relationship depth with marketer • Privacy related vs. embarrassing information	• Personalized discounts (vs. non-personalized)
Xie et al. (2006)	E-commerce	Social exchange theory	Laboratory experiment & survey (2*2*2)	Multivariate regression	• Existence of privacy policy, seal and secure connection • Firm reputation	• 20 USD gift voucher
Zhang, Wang and Chen (2000)	E-commerce	Social exchange theory	na	na		• Financial rewards

[a] Respondents asked to evaluate a survey about mobile computing products   [b] Participants told they were evaluating a future bookstore   [c] Customers invited to join a mailing list
[d] Respondents asekd to complete a customer profile for a grocery store   (-) Factor specification has negative effect on provision of information

Table 6: Studies on Factors Increasing the Provision of Information

3.3.1 Factors Reducing Privacy Risks

Some factors proven to increase the provision of information to marketers appear to reduce consumers' perceptions of privacy risks. As such, they can be classified as reducing consumers' privacy cost within their privacy calculus.

3.3.1.1 Information Requested

As the perceived sensitivity of information determines consumers' situational privacy concerns (see section 3.2.1.2), the type and amount of data requested influences their willingness to provide information to marketers. Three empirical studies show that consumers are more willing to provide shopping preferences, contact, biographical, and lifestyle information than financial information (Malhotra, Kim and Agarwal 2004; Meinert et al. 2006a; Phelps, Nowak and Ferrell 2000; see also section 3.1.3). Additionally, Ward, Bridges and Chitty (2005) found that asking for financial information reduces consumers' willingness to provide information in order to apply for a membership to an online bookstore. In contrast, the request for telephone numbers (Milne 1997) or name and address does not impact data provision (Ward, Bridges and Chitty 2005). An experiment by White et al. (2004) showed that consumers are overall more willing to reveal their address and phone number than potentially embarrassing information. Hui et al. (2007) showed that the more personal information a website requests, the less likely consumers are to respond to a market research survey sponsored by an online store. In conclusion, it appears that by reacting to the type and amount of information requested, consumers actively manage their exposure to potential privacy risks.

3.3.1.2 Privacy Statements

Although most surfers do not read privacy statements, or if they do read them, do not fully understand their contents (Berendt, Guenther and Spiekermann 2005; Milne and Culnan 2004), privacy policies decrease consumers' privacy concerns by engendering trust (e.g., Hoffman, Novak and Peralta 1999; Milne and Culnan

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2004; Phelps, Nowak and Ferrell 2000) and thus increase consumers' willingness to provide information (Hui, Teo and Lee 2007; Xie, Teo and Wan 2006). This is because privacy policies have a signaling function emphasizing a company's commitment to protecting consumer privacy and observing Fair Information Practices (Xie, Teo and Wan 2006). In addition to the mere existence of a privacy statement, also the content and the form of privacy statements can drive disclosure. With regard to the content, giving consumers the possibility of removing their names from a mailing list (Milne and Rohm 2000), limiting the future information usage by requiring an opt-in (Milne and Gordon 1993) and assuring protection against secondary use, improper access, and errors (Hann et al. 2007; Meinert et al. 2006a) increase data provision. Regarding the form of privacy statements, Kobsa and Teltzrow (2005) developed a design recommendation for privacy practices based on specific human computer interaction (HCI) guidelines they defined. They found that providing consumers with specific, contextualized explanations of privacy practices increases voluntary data provision. For example, when asking for an opt-in to set a cookie, a website would clearly explain to users how it analyzes the recorded information and how this might affect the user with regard to privacy reductions and potential benefits. Whereas this mechanism would provide more clarity and more transparency, Milne (1997) found that marketers can also increase data provision by using euphemisms with regard to the commercial use of their information. His experiment demonstrated that customers are more willing to provide information if they are not made aware that a marketer receives money by sharing their information with third parties—a finding that supports the role of distributive justice in the context of information privacy but also highlights that firms might be tempted not to fully inform consumers about targeting practices.

Due to the importance of privacy policies in driving consumer information disclosure, many articles have developed recommendations regarding the design of privacy statements. These can be classified into theoretical approaches that derive how privacy statements should be designed based on justice and ethical theories (Culnan and Bies 2003; Pollach 2005), descriptive studies that derive

recommendations based on analyses of the content of privacy statements and theoretical considerations (Fernback and Papacharissi 2007; Milne, Culnan and Greene 2006; Papacharissi and Fernback 2005; Pollach 2006; Storey, Kane and Stewart Schwaig 2009), and empirical studies (Kobsa and Teltzrow 2005; Milne and Culnan 2004; Meinert et al. 2006a, 2006b). Table 7 provides an overview of the findings of those studies.

Article	Nature and research question	Theoretical foundation	Findings/recommendation regarding		
			Content of privacy statements (PS)	Form of privacy statements	Other aspects
Culnan and Bies (2003)	Conceptual and normative: How do fairness perceptions influence privacy concerns? How can FIP be implementted?	Justice theory framework	Companies need to adhere to Fair Information Practices: notice, choice, access, and security		
Kobsa and Teltzrow (2005)	Empirical testing of developed guidelines: How can a user interface allow comprehension, consciousness, control, and consent?	n.a.	Mentioning of user benefits of information collection	Contextualized explanation of privacy practices	
Meinert et al. (2006a; 2006b)	Exploratory survey: How does the level of privacy protection influence willingness to provide information?	Trust models (propensity to trust, trust in the Internet, trust in the market)	Strength of protection • Strong: no sharing of data • Moderate: limited sharing • Weak: no guarantee		
Milne and Culnan (2004)	Empirical testing of theoretical model: Why do consumers read privacy notices?	Utilitarian framework (PS as means to minimize the risk of disclosure)		Comprehensibility (for consumers to read and trust PS)	Consumers are most likely to read PS during a first time interaction
Milne, Culnan and Greene (2006)	Automatic assessment of readability of 500 online PS: How well is the readability of PS and how has it evolved?	Implicitly: PS as means to mitigate the risks of online transactions		Clarity and ease to understand (length does not automatically lead to lower readability)	Most PS are not clear and under-standable

(Table 7 continued on next page)

(Table continued)

Article	Nature and research question	Theoretical foundation	Findings/recommendation regarding		
			Content of privacy statements (PS)	Form of privacy statements	Other aspects
Pan and Zinkhan (2006)	Interperson experiments: How does a PS affect consumers' trust in an e-tailer?	n.a.		Short, straight-forward (more comprehensible; however wording does not affect trust)	A clear PS makes shoppers respond more favorably to a site
Fernback and Papacha-rissi (2007); Papacha-rissi and Fernback (2007)	Empirical; coding of 97 privacy statements and evaluation by trained coders: How efficient are privacy statements in improving perceived credibility and protecting users?	n.a.	Perceived levels of protection • High: Protection of PII and non-PII • Moderate: Protection of PII, and some of non-PII • No specification of protection	Factors increasing credibility • Clarity of legal and computer terms • Few computer terms • Perceived level of protection	PS prime users for protection but usually offer insufficient protection and just serve as legal safeguard
Pollach (2005)	Normative and qualitative textual analyses of > 20 commercial websites: Is the language of PS adequate to enable an informed consent by users on data handling practices?	Ethical theories (deontology, teleology, virtue ethics, justice), theory of informed consent	Implicitly: PS must be exhaustive to enable informed consent	Objective, neutral, clear and concise language	Most PS use language that does not allow an informed consent which is unethical
Pollach (2006)	Content analyses and computer-assisted textual analysis of 50 PS: How can a PS contribute to uncertainty reductions in www interactions?	Uncertainty reduction theory	• Explain under what circumstances a practice is carried out • Also tell user what a firm does not do	• Exact lexical choices • Additional tabular and short version • P3P-enabled PS also effective	
Storey, Kane and Schwaig (2009)	Software assisted keyword and qualitative analysis of PS of all Fortune 500 firms, regression: What factors drive the substance and the quality of companies' stated information practices?	Resource dependency theory	Development of 13-item measure to assess the quality of privacy protection according to FIP		

Table 7: Studies on the Design of Privacy Statements

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3.3.1.3 Other Trust-enhancing Factors

As trust mediates privacy concerns (3.2.3), several studies have analyzed trust-enhancing factors that are relevant in the context of personalized marketing. In summary, they find that a user's *familiarity* and *past experience* with a website (Chellappa and Sin 2005), as well as a firm's *reputation* (Schoenbachler and Gordon 2002; Xie, Teo and Wan 2006) and *perceived dependability* (Schoenbachler and Gordon 2002) have a positive effect on the provision of information for personalized marketing. Their results are in line with Malhotra, Kim and Agarwal (2004) who showed that *trusting beliefs* reduce the perceived risks of information provision.

3.3.2 Factors Increasing Benefits

Several factors proven to increase disclosure for personalized marketing can be considered to provide tangible and intangible benefits to consumers.

3.3.2.1 Financial Rewards

Regarding potential benefits, Hann et al. (2007) found in a conjoint experiment that financial rewards work best in increasing Internet users' motivation to provide information to a website. While Ward, Bridges and Chitty (2005) did not measure a significant effect of a price discount within a student convenience sample, several experimental studies have confirmed that financial benefits such as gift vouchers, checks or discounts positively influence the provision of information, both in an offline direct mail (Milne and Gordon 1993) as well in an e-commerce context (Hui, Teo and Lee 2007; Xie, Teo and Wan 2006; Zhang, Wang and Chen 2000).

3.3.2.2 Personalization

Personalization may comprise several types of benefits. Many studies test the effect of *convenience* on the provision of information. Although only about half as

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important as financial rewards (Hann et al. 2007), convenience in terms of shopping time-saving increases a users' motivation to provide information (Hann et al. 2007; Phelps, Nowak and Ferrell 2000). This is in line with Kobsa and Teltzrow (2005) who found that emphasizing benefits of data provision while explaining privacy practices increases disclosure. Furthermore, some studies suggest that *relevance* might constitute a benefit. In a study by White et al. (2004), offering personalized discounts proved to be more effective than offering non-personalized discounts in driving the provision of information. Milne (Milne 1997) found that consumers are more willing to join a mailing list when informed that third parties receiving their information offer relevant products.[22] Also, when asked whether they wished to join a mailing list in a yes-or-no format instead of being asked whether they wished to opt-out, consumers more often choose to subscribe. Supposedly, the yes-or-no format better allows consumers to consider potential benefits, whereas an opt-out format primes consumers to focus on the disadvantages of subscribing. In a conjoint experiment, Milne and Gordon (1993) confirmed in a direct mail context that, although only about half as important as financial rewards, advertising relevance constitutes a benefit to consumers. Finally, in the context of a university alumni club, Tezinde at al. (2002) unveiled that *personalization in the narrower sense*, for example through a hand-written note, increases consumers' consent for future email communication.

3.3.2.3   Reduction of Advertisements

Two conjoint studies conducted in a direct mail context illustrate that consumers consider a reduction in mail volume resulting from targeting as a benefit (Milne and Gordon 1993; Phelps, Nowak and Ferrell 2000). Relative to other benefits, a reduction of mail volume is about as important as advertising relevance but only half as important as financial compensation (Milne and Gordon 1993).

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[22] In addition to relevance, another explanation of the effectiveness of this mechanism might be that it reduces the perceived risks of information disclosure. Mentioning that third parties receiving information offer relevant products reduces the number of potential information recipients and creates some congruency between the type of information requested and the purpose of the information collection.

3.4   The Need for an Investigation of Factors Increasing the Acceptance of Targeted Online Advertising

As discussed in chapter 2, targeting constitutes a means of increasing the effectiveness of online advertising, and thus allows websites to fund their content more effectively. However, studies presented in section 3.2 indicate that consumers' privacy concerns online might have negative consequences for publishers and advertisers alike, such as website avoidance, negative word-of-mouth, or potentially even lower advertising effectiveness. As targeting often raises privacy concerns among consumers (Alreck and Settle 2007; McDonald and Cranor 2010; Turow et al. 2010), it is important for free content websites to find mechanisms to increase the acceptance of targeting. Studies presented in section 3.3 show that in general, there are factors that can increase the acceptance of personalized marketing. That is because consumers' conscious and voluntary provision of information as investigated in these studies can be considered an informed consent to these practices (e.g., Malhotra, Kim and Agarwal 2004; Milne and Gordon 1993).

However, the applicability of these studies to targeted advertising in the context of content websites might be limited, as concerns about privacy may be highly situational (see section 3.1.1). Existing studies on factors influencing the provision of information were conducted in contexts other than targeted advertising, namely e-commerce, direct mail, brick and mortar retailing or email marketing (see Table 6 on page 80). Those settings are qualitatively different from targeted online advertising. With regard to e-commerce, for example, data provision in an online store might appear less risky and trigger less situational privacy concerns than allowing targeting on any content website. There are several reasons to believe this: First, in online stores, consumers have to submit information in order to complete transactions. After many years of conducting e-commerce transactions, they may be used to submitting information in online stores and to being exposed to personalized product recommendations, and thus to being profiled in online stores. Therefore, consumers are most likely aware that online shops store data about them. In contrast, information collection for targeted

advertising on non-e-commcerce websites often happens covertly and might thus raise more privacy concerns once consumers learn about it. Second, due to a higher awareness of data collection in online stores, consumers might feel they have more control over their information. In fact, by deciding which products to shop online and which products to shop offline, consumers can control which information they to provide to an online shop.

Furthermore, existing findings are also of limited applicability in the context of free content websites because of practical implementation hurdles. Providing consumers with checks, vouchers, or discounts on (free) content websites might entail further privacy challenges when consumers are required to submit their email address or name in order to receive the respective compensation. Additionally, offering users financial benefits would be costly and thus thwart the goal of better financing (free) content.[23]

Against this background, it is important to validate and extend existing findings on factors increasing the acceptance of personalized marketing in the context of targeted advertising, particularly on advertising supported websites. As privacy constitutes a highly sensitive and personal issue, I believe that mechanisms derived descriptively need to be in line with a solid normative foundation, which I present in the next chapter.

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[23] Most likely, free content websites would not be able to provide financial benefits that still allow them to remain profitable while being high enough to incentivize surfers to provide information. A simple estimation illustrates this. Assuming a relatively aggressive scenario: A regular user is exposed to 25 different campaigns on a website per month. The CPM of that website is 30 Euros and the price premium of targeted advertising is 100 percent. Thus, the incremental monthly revenue per user from offering targeting would be about 75 cents, which is the maximum value the publisher would be willing to offer to a surfer. This is a value substantially lower than the benefits offered to consumers in the studies by Hann et al. (2007), which range between 5 and 20 USD.

4.   Targeted Advertising as a Social Contract

4.1   Social Contract Theory as Appropriate Normative Foundation for Targeted Advertising

The goal of this dissertation is to identify and test mechanisms to increase the acceptance of targeted online advertising so that targeting may become a more powerful marketing tool for advertisers and a more effective revenue source for (free content) websites. As mentioned in chapter 3, nearly all studies on factors increasing the acceptance of personalized marketing in the context of information privacy have been conducted from a descriptive research perspective. While this descriptive approach has delivered highly relevant findings, I argue that it is appropriate to set my research on an explicit normative foundation. This is because information privacy constitutes a highly delicate and personal issue. As described in chapter 3, most consumers believe that privacy is a fundamental right, one they are highly concerned about (e.g., McDonald and Cranor 2010).

However, with regard to online advertising, this 'fundamental right' is not always fully protected by law due to frequent and numerous technological innovations, which often outpace privacy legislation. Furthermore, some countries, like the U.S., do not consider privacy as an absolute right but rather as a matter of fairness between agents in a free market and thus limit their regulatory interventions (see section 2.1). Consequently, with regard to consumer privacy, companies performing targeted online advertising have a substantial discretionary scope of action.

Therefore, defining and adhering to normative standards in the context of targeted online advertising appears to be of utmost importance. This argument also clearly applies to research on factors increasing the *acceptance* of targeting. In fact, a purely descriptive research approach might yield factors increasing the acceptance of targeting that might be deemed unethical. For example, findings by Milne (1997) in the context of a brick and mortar store suggest that the use of euphemisms, i.e., obscuring the goals of information collection and the privacy practices employed, might be effective means for companies to obtain more

consumer information for commercial use. The fact that many predictive behavioral targeting surveys currently use some euphemisms when collecting consumer information further supports the appropriateness of a normatively grounded research approach. Therefore, while marketing research should always implicitly respect ethical standards, research that might ultimately help the Internet industry to increase revenues and profits by using consumer information, should do so explicitly. Based on previous research on business ethics, I therefore derive normative boundaries (chapter 4), which I systematically respect in setting up my research model (chapter 5).

According to Dunfee, Smith and Ross (1999), social contract theory (SCT) is particularly apt at providing guidance in ethical issues in marketing due to "its shared focus on exchange" (p. 17). I argue that SCT in general constitutes a highly appropriate frame for my research because targeting can be considered an exchange in which a website offers free content to a consumer. In return, the consumer would view advertisements and may allow targeting so that the website could receive advertising revenues from a third party, the advertiser, who targets this consumer. Thus, whether and how much money a websites receives from a third party depends upon consumers' accepting the exchange. As will be shown subsequently, SCT allows adding a normative layer to a social exchange framework employed in many previous studies on personalized advertising in the context of information privacy.

4.1.1 The Roots of Social Contract Theory

Social contract theory is one of the most dominant theories within moral and political philosophy throughout the modern Western hemisphere (Friend 2004). It has its origins in the social upheavals of the 17th and 18th centuries in Europe, when citizens started to question the divine right of kings as a basis for obedience to the state (Dunfee, Smith and Ross Jr. 1999). Thomas Hobbes (1588-1679), John Locke (1632-1704) and Jean-Jacques Rousseau (1712-1778) are the first and

best known proponents of SCT (Friend 2004).[24] In short, SCT is the philosophical view that individuals' moral and/or political obligations depend on an agreement or contract they make to form the society they live in (Friend 2004).

In his masterpiece *Leviathan* (1651), Hobbes argued for the institution of a sovereign with absolute authority who people agree to (Wempe 2005). Hobbes' argument assumes a hypothetical state of nature, i.e., a world without a state, in which resources are limited but where there is no power to force men to cooperate (Friend 2004). According to Hobbes life in such a state would be "solitary, poor, nasty, brutish, and short" (p. 84) because humans are naturally self-interested and would fight against others to obtain some advantages. In such a situation, people would constantly be in fear and have no capacity to obtain long-term satisfaction. As Hobbes also assumed humans to be rational, he concluded that they would first agree to common laws allowing for a better life than in a state of nature, and then to an absolute sovereign to enforce the laws that constitute the social contract (Friend 2004). Thus, according to Hobbes, it is in men's own interest to submit some freedom to create a civil society governed by the rules of justice and morality, which are to be enforced by a government or sovereign (Rachels 2003).

Influenced by Hobbes' idea of people consenting to the authority of the law, John Locke wrote his *Two Treatises of Government* (1690). Locke also used the theoretical construct of a state of nature as a basis for legitimizing state authority (Friend 2004). However, his image of men as well as his reasoning and proposed solution with regard to the nature of political authority is different (Wempe 2005). According to Locke, the state of nature is a "state of perfect freedom" (Locke 1690, sect. 4) where people are equal. The state of nature is "pre-political, but it is not pre-moral" (Friend 2004, para. 18), because God has given to people the "law of nature" which commands that individuals not harm others' "life, health, liberty, or possessions" (Locke 1690, sect. 4, 6). War only begins when "one man declares war on another, by stealing from him, or by making him his slave" (Friend 2004, para. 19). Contracting for a civil government is only required as

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[24] Already in the ancient world, Socrates made arguments in his Platonic dialogues *Crito* and *Republic* that related to the ideas of SCT. However, Hobbes is the first philosopher to give a full

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people "tend to overreact in their role of judges in their own cause" (Wempe 2005, p. 122) so that war would be likely to continue once started. Therefore, people create a political society that includes laws, judges, and executive power to enforce laws by consenting to giving up power to protect themselves and punish those who transgress the Law of Nature. As the justification for government authority is to protect people's property and wellbeing, a government devolving in tyranny puts itself at war with the people, i.e., back into a state of nature (Friend 2004). In such a situation, people have the right to resist the authority, an argument which proved highly influential in the democratic revolutions of the 18th century and civil rights movements of the 19th century (Dunfee, Ross and Smith 1999; Rachels 2003).

In his writing *Du Contrat Social* (1762), Jean-Jacques Rousseau answered the fundamental question how humans "can be free and live together" (Friend 2004, para. 30). This "normative, or idealized theory of the social contract" (para. 25) follows Rousseau's description of how human beings evolved morally and politically from the state of nature to a modern society, which he presented in his essay *Discours sur l'origine et les fondements de l'inegalité parmi les hommes* (1755), also referred to as *Second Discourse* (Friend 2004). In the Second Discourse, Rousseau argues that man is naturally good and equal but "inevitably corrupted by living in larger societies" (Wempe 2005, p. 122). In particular, the invention of property brought about "greed, competition, inequality, vanity and vice" and the formation of a government that claims to be in the interests of everyone "is really in the interest of the few who have become stronger and richer as a result of the development of privacy property" (Friend 2004, para. 27, 28). Against this background, Rousseau argues in his normative writing *Du Contrat Social* that men should submit themselves under the direction of a general will that is created through an agreement with other free and equal people (Dunfee, Smith and Ross Jr. 1999). As such, Rousseau is a strong advocate of democratic principles (Friend 2004).

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exposition of SCT (Friend 2004).

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In summary, traditional political social contract theories usually contain three elements: "(1) consent of the individual, (2) agreement among moral agents, and (3) a device or method by which an agreement (actual or hypothetical) is obtained" (Dunfee, Smith and Ross 1999, p. 17).

4.1.2 Justice, Morality and Norms within Social Contract Theory

More recent social contract theorists focus less on the rise and legitimization of political authority and more on the role of justice, morality, and norms in enabling a cooperative social living.

In his highly influential publication *A Theory of Justice* (1972), John Rawls (1921-2002) identified two principles of justice that should regulate a society (Meyer 1996). The first principle states that each person should have as much civil liberty as possible, but that civil liberty needs to be "distributed equally" (Friend 2004, para. 35). According to the second principle, subordinate to the first, "economic inequalities are only justified when the least advantaged member of society is nonetheless better off" (Friend 2004, para. 35) compared to alternative arrangements. Rawls argues that rational people would choose those principles if put into an original position in which they have no knowledge about their own real circumstances like gender, talents, or social status (Meyer 1996). Because the conditions under which the principles of justice are uncovered are fair, Rawls describes his theory as "justice as fairness" with justice "proceeding out of fairness" (Rawls 2003, p. 3). Hence, Rawls does not focus on demonstrating that individuals contract to establish a government, rather he puts some constraints on the contract that people can agree to in order to construct a well-ordered society (Friend 2004).

Other philosophers also emphasize morality in enabling social living. For example, James Rachels (1941-2003) explained that according to SCT "the state exists to enforce the most important rules necessary for social living, while morality *consists in* the whole set of rules that facilitate social living" (Rachels 2003, p. 144), thereby making a distinction between social contracts referring to

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political authority and social contracts raising out of morality. He argues that "*morality consists in the set of rules, governing how people are to treat one another, that rational people will agree to accept, for their mutual benefit, on the condition that others follow those rules as well*" (Rachels 2003, p. 145).

The idea that morality is reflected in rules that individuals would consent to in order to shape a cooperative social living can be applied to ethical business questions. Several researchers studying business ethics operationalize those rules determining morality of behavior as 'norms' (e.g., Ashworth, Milne and Gordon 1993). Dunfee, Smith and Ross (1999, p. 18) note that "researchers have referred to 'norms', an implicit reference to generally understood standards or obligations derived from social contracts". Such a procedure appears to be appropriate with regard to psychological research on norms: Sherif (1936) offers an early description of norms as jointly negotiated rules for social behavior, i.e., the "customs, traditions, standards, rules, values, fashions, and all other criteria of conduct which are standardized as a consequence of the contact of individuals" (p. 3; quotation from Cialdini and Trost 1998, p. 151-152). Cialdini and Trost further specify this description with regard to "norms that are primarily social in nature" (p. 152). They define social norms as "rules and standards that are understood by members of a group, and that guide and/or constrain social behavior without the force of laws" (p. 152). Social norms may be stated explicitly, but very often they are implicit (Cialdini and Trost 1998). Within the marketing literature, Heide and John (1992, p. 34) define norms as "expectations about behavior that are at least partially shared by a group of decision makers".

Furthermore, in several publications, Cialdini and colleagues (e.g., 1991, 1998, 2004) argue that the psychological literature reveals there are two major types of norms. *Descriptive norms* inform individuals of "what is typically done" (Cialdini and Goldstein 2004, p. 597). The more people respond to a given situation in a particular way, the more correct individuals will perceive this behavior to be (Thibaut and Kelley 1959). As people are motivated to achieve their goals effectively, social norms serve as decision heuristics in how to respond to ambiguous situations (Cialdini and Trost 1998). Following others saves time and

cognitive effort while entailing a great chance that the outcome of a particular behavior will be effective (Cialdini and Trost 1998). *Injunctive norms* closely correspond to the most popular use of the norm construct (Cialdini and Trost 1998). Injunctive norms inform people "what is typically approved/disapproved" (Cialdini and Goldstein 2004, p. 597). Behavior in accordance with injunctive social norms is accompanied by social acceptance and approval by others (Allison 1992; Cialdini and Trost 1998). Therefore, injunctive norms have motivational power, as they promise social rewards or punishments resulting from certain behaviors (Cialdini and Trost 1998). Thus, injunctive norms prescribe appropriate behavior, and therefore constitute the "moral rules of the group" (Cialdini and Trost 1998, p. 157).

In conclusion, social norms constitute a link between social contract theory and social exchange theory. While social contract theory emphasizes the need for rules that individuals consent to in order to enable social order, cooperative behavior, and the production of social goods (Friend 2004), social exchange theory conceptually and empirically studies social norms that can be considered as implicit rules of such a social contract. Integrative social contracts theory constitutes a concept of business ethics that systematically integrates these two views and is thus highly applicable to the research focus of this dissertation.

4.1.3   Integrative Social Contracts Theory as Guidance for Business Ethics

Integrative social contracts theory (ISCT) has been suggested as a guideline for a normative assessment of ethical problems in business, and has been applied to a variety of problems in marketing (Donaldson and Dunfee 1994; Dunfee, Smith and Ross Jr. 1999). ISCT incorporates empirical findings and prescriptive research on business ethics (Donaldson and Dunfee 1994). The term "integrative" represents the fact that ISCT assumes a hypothetical social contract whose terms allow recognizing existing social norms as binding ethical obligations (Dunfee 2006). In a manner analogous to classical political social contract theory as proposed by Thomas Hobbes, John Locke, and Jean-Jacques Rousseau, ISCT

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assumes that individuals in a hypothetical "state of individual production" (Donaldson 1982, p. 44) would consent to the formation of corporations as productive organizations in order to increase the welfare of society. It further assumes that "corporations exist only through the cooperation and commitment of society" with the firm offering "advantages to society—its customers and employees—in exchange for the right to exist and even prosper" (Dunfee, Smith and Ross Jr. 1999, p. 17). As corporate legitimacy is based on this 'macrosocial contract' between members of society, the "social contract model is one of the most promising theoretical constructs which is presently available to argue for norms of corporate morality" (Wempe 2005, p. 113).

ISCT posits that the original contractors agree to search for manifest universal values, called hypernorms, which provide guidance in resolving ethical dilemmas in business (Donaldson and Dunfee 1999; Dunfee 2006). This is because ISCT assumes that rational individuals would be willing to restrict themselves by moral principles in order to ensure "the generation of wealth and the maintenance of an environment conductive to a good and productive life" as there would otherwise be a "threat of social denigration into Hobbes' 'war of every one against every one'" (Dunfee, Smith and Ross Jr. 1999, p. 18). ISCT assumes that, as a result of bounded moral rationality[25], "contractors may not be able to identify and agree to an omnipotent comprehensive moral theory" (Dunfee, Smith and Ross Jr. 1999, p. 18). Thus, it argues that 'macrosocial' contractors would allow the existence of 'microsocial' contracts. As a consequence, local economic communities, like a firm and its customers, may form their own 'microsocial contract' by having a set of ethical rules for conducting business that most members implicitly approve (Dunfee, Smith and Ross Jr. 1999). ISCT argues that *existing norms* may represent such rules because injunctive norms prescribe morally appropriate behavior (see also Cialdini and Trost 1998 who define injunctive norms accordingly from a social psychological perspective).

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[25] Bounded moral rationality assumes that individuals as moral agents cannot make perfect judgments that are fully consistent with their moral preferences due to a lack of information, time, and emotional strength (Dunfee, Smith and Ross Jr. 1999).

ISCT defines two normative requirements for these 'microsocial' contracts (Donaldson and Dunfee 1994). First, members of the community must have the freedom to exit the contract if distressed by particular rules. As choice requires knowledge, such a contract "must be grounded in informed consent" (Donaldson and Dunfee 1994, p. 19). Second, the rules of the microsocial contract "must be compatible with hypernorms" (Dunfee, Smith and Ross Jr. 1999, p. 19), i.e., moral principles fundamental to human existence that may be "reflected in a convergence of religious, philosophical and cultural beliefs" (Donaldson and Dunfee 1994, p. 265).

Research Issue	Article
Marketing of Credit Cards to Students	Lucas (2001)
Corporate Governance in Russia	McCarthy and Puffer (2008)
Globalization Debate, e.g., Power of Multinational Enterprises	Madsen (2003); Mayer (2001)
Gender Discrimination in Certain Countries	Mayer and Cava (1995)
Drug Pricing in Developing Countries	Reisel and Sama (2003)
Social Marketing, e.g. Marketing Family Planning in Bangladesh	Smith (2000)
Drug Testing Programs	Strong and Ringer (2000)
Corporate Downsizing	van Buren (2000)
Allocation of Scarce Jobs	van Buren (2003)
Deviance and Whistle Blowing in Organizations	Warren (2003)

Table 8: Applications of Integrative Social Contracts Theories in Marketing and Business Research

As any new theory in general and theory on business ethics in particular, ISCT has received criticism. Many comments have criticized that ISCT does not clarify how to identify social norms, making ISCT impractical for managers, and that Donaldson and Dunfee do not offer a set of hypernorms that 'microsocial rules' can be tested against, consequently leaving room for opportunism (e.g., Rowan 2001; Shaw 2000; Soule 2002; for a detailed review, see also Dunfee 2006). In response to this criticism, the authors emphasize that ISCT suggests a search for universal moral principles as a bottom-up process "in the sense that it is used to

identify potential hypernorms relevant to a particular decision" (Donaldson and Dunfee 2000, p. 483). As such, the application of hypernorms in a particular business context "is an inductive rather than deductive exercise" (Dunfee 2006, p. 305).[26] In fact, "a major virtue of ISCT is that it causes decision makers to identify and focus on essential elements required for ethical decision-making in business" (Dunfee 2006, p. 313), which has been recognized by a number of authors (e.g., Brenkert 2009; Gilbert and Behnam 2009; Glac and Kim 2009; see also Table 8 for examples of applications of ISCT). As norms that are relevant in the context of targeted advertising are highly specific to the context of consumer privacy, it appears appropriate that ISCT is not highly rigid in predefining specific norms. Furthermore, with a high number of studies employing ISCT as normative guidelines (as presented in Table 8), it has been proven as a useful tool for assessing ethical problems in business. Finally, in the context of consumer privacy, some researchers have argued that consumers view an exchange involving their information as an implied social contract (e.g., Caudill and Murphy 2000; Culnan 1995; Milne and Gordon 1993). Thus ISCT constitutes a well applicable and highly appropriate normative foundation for research on mechanisms to increase the acceptance of targeted advertising.

4.2 Applying Integrative Social Contracts Theory to Targeted Advertising

Motivated by SCT emphasizing the importance of rules of behavior that people would consent to in general and ISCT in particular, this dissertation conceptualizes targeted advertising as a 'microsocial contract' between a website and its surfers which should be governed by rules of fairness that can be derived from social norms. This allows building on descriptive findings regarding consumers' acceptance of personalized marketing which usually presume a cost-benefit analysis as suggested by social exchange theory while adhering to normative standards of business ethics.

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[26] For example, "global convergence of opinion" regarding a norm is one proxy for hypernorms, but should be ratified by other norms before drawing a final conclusion regarding the existence of a particular hypernorm (Dunfee 2006, p. 306).

Table 9 provides an overview of the terms suggested by ISCT, which Dunfee, Smith and Ross (1999) present as a practical guideline for marketing problems in an article in the Journal of Marketing. In summary, the terms say that (1) local economic communities, i.e., "self-defined and self-circumscribed" groups of people "who interact in the context of shared tasks, values, or goals" (Donaldson and Dunfee 1994, p. 262), can establish their own ethical rules of doing business; that (2) those rules need "to be supported by the attitudes and behaviors of a substantial majority of the members" while allowing members to "exercise voice" or "leave the community" if distressed by a particular rule[27]; and that (3) those rules need to be consistent with hypernorms, i.e., universal normative principles (Dunfee, Smith and Ross 1999, p. 19). They also say that (4) in the case of a conflict between different rules, which most often occurs in international settings, priority rules should be applied that can be derived from principles of international conflicts of law and dispute resolution.

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[27] This term implies that if members remain in the group, they implicitly approve its rules.

Terms of the 'Macrosocial Contract' according to ISCT (Dunfee, Smith and Ross 1999, p. 18-20)	Ways to Incorporate the Requirements of ISCT Terms into Research on Targeting Acceptance
1. Local economic communities may specify ethical norms for their members through microsocial contracts	*[Term 1 as basis for conceptualizing targeting as 'microsocial contract' between a website and its customers; specific terms of different contracts may vary, in particular across websites or regions]*
2. Norm-generating microsocial contracts must be grounded in informed consent, buttressed by the right of exit and voice	M. Minimum standard of targeting: Consumers must be **aware** of targeting practices, targeting must be conditional upon consumers' explicit **consent** (whereby *explicit* consent entails the right of exit and voice)
3. To be obligatory, a microsocial contract norm must be compatible with hypernorms	N. Derive mechanisms to increase the acceptance of targeting from **social norms** (if social norms are not universal norms, mechanisms must not conflict with universal moral principles)
4. In the case of conflicts among norms that satisfy terms 1-3, priority must be established through the application of the rules consistent with the spirit of the overall macrosocial contract	*[If the levers derived from social norms (N) are not contradictory and consistent with minimum standards (M), no conflict exists]*

Table 9: Implications of ISCT for the Research Model

Table 9 also shows how those terms can be incorporated into the research model of this dissertation. My conceptualization of targeted advertising as a social contract between a website and its consumers is in line with term 1 of ISCT, saying that economic communities can form their own microsocial contracts. Furthermore, it is possible to respect terms 2 and 3 by following two principles: First, by deriving levers to increase the acceptance of targeting from universal social norms (N), I meet the requirement of term 3 as mechanisms derived from universal norms are by nature compatible with those norms. If social norms are not universal, they must not conflict with moral universal principles.[28] Second, I meet term 2 by respecting the following requirements that can be considered minimum standards of targeted advertising: (M) Consumers must be **aware** of

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[28] Please note that identifying and mechanically testing levers against potential hypernorms is not the focus of this dissertation. Rather, employing the framework of ISCT is meant to systematically incorporate a normative perspective into the research on targeted advertising. This appears to be in line with the intention of ISCT, with Dunfee (2006, p. 313) noting that "ISCT is not intended as a formal calculus to be applied robotically in making decisions".

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targeting practices and targeting must be conditional upon consumers' explicit **consent** to these practices. By requiring consent to be explicit, consumers are given the possibility to exercise voice or exit the 'microsocial contract'.[29] If the mechanisms derived from social norms do not contradict each other, and are consistent with the defined minimum standards, there is no substantive conflict, and thus term 4 is not applicable.

In summary, I assume that mechanisms increasing the acceptance of targeted advertising can be deemed ethically acceptable if they are derived from social norms which do not conflict with universal moral principles and are in accordance with minimum requirements regarding informed consent.

Overall, choosing fairness as implicit rules that should govern a 'targeting microsocial' contract appears indicated for two reasons: First, from a descriptive perspective, as privacy concerns closely relate to fairness perceptions (see 3.1.2.2.), employing mechanisms to increase the perceived fairness of the consumer-website relationship might be an effective way to reduce privacy concerns and increase the acceptance of targeting. Second, these rules of fairness allow for meeting the normative requirements of ISCT. Thus, before presenting my research model (chapter 5), I will demonstrate how rules of fairness can be derived from social norms. In this way, I show that mechanisms increasing the perceived fairness of the relationship between the surfer and the website meet the above mentioned criteria of ethical business practices.

4.2.1   The Role of Procedural Justice and Fair Information Practices

Rules of procedural justice can be derived from injunctive and prescriptive norms. As mentioned in section 3.1.2.2., an important way in which individuals make judgments of procedural justice in the context of information privacy is by comparing their treatment to standards of respectful behavior (Miller 2001), i.e.,

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[29] By requiring the consent to be explicit, I somewhat exceed the requirements of ISCT which argues for individual's implicit consent. However, I argue that without receiving explicit consent, it is not possible to control that the requirement of awareness of the terms of the microsocial contract is met.

to injunctive norms. Ashworth and Free (2004) argued that those standards of respectful behavior in the context of privacy are the norms of *openness*, *honesty*, *permission*, and *information access*. Furthermore, rules of procedural justice may also be derived from descriptive norms. In the context of direct mail, Milne and Gordon (1993) supposed that consumers intuitively view an exchange involving their information as an implied social contract. They argued that consumers expect a certain pattern of behavior, and consider a deviation from this pattern as a violation of their rights. One of the minimum behavioral pattern of marketers might be that they protect their IT systems and databases from hacker intrusions resulting in a descriptive *norm of data security*.

The FTC's Fair Information Practices (FIP), including *notice*, *consent*, *access, integrity/security*, and *enforcement mechanisms*, constitute potential rules for targeted advertising, which are clearly compatible with the above mentioned norms relating to procedural justice: While the principle of notice can be derived from the norms of openness and honesty, the principle of consent relates to the norm of permission and the principle access to the norm of information access. Furthermore, the principle of integrity/security corresponds to consumers' supposed expectations regarding data security. Term 2 of ISCT specifies a further procedural norm relevant to microsocial contracts, namely informed consent. As just highlighted, the FIP include requirements of informed consent and go even further in empowering consumers. Therefore, I conclude that when mechanisms to increase the acceptance of targeted advertising are compatible with FIP, they meet the ethical requirements as summarized by Dunfee, Smith and Ross (1999).

4.2.2 The Role of Distributive Justice, Equity, and Reciprocity

Norms relating to distributive justice govern how individuals behave in relationships and allocate goods and services to others (Cialdini and Trost 1998; see also section 3.1.2.2). There are different values that might underlie judgments of distributive justice. According to Deutsch (1975, p. 139) distributive justice can be viewed as consisting of treating all people "(1) so as all receive outcomes

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proportional to their incomes (as is the notion of equity), (2) as equals, (3) according to their needs, (4) according to their ability, (5) according to their efforts, (6) according to their accomplishments, (7) so that they have equal opportunity to compete without external favoritism or discrimination, (8) according to the supply and demand of the marketplace, (9) according to the requirements of the common goods, (10), according to the principle of reciprocity, (11) so that none falls below a specific minimum". Which norm people apply to assess distributive justice depends on numerous factors, such as the type of exchachange relationship (Clark 1993), personal characteristics such as their equity preference (Mayser and v. Wangenheim 2011), as well as situational cues (Cialdini, Kallgren and Reno 1991). In exchange relationships, two norms typically prevail. (1) In exchange relationships with short-term business partners, individuals' "motivation is to get something back in return, that is quid pro quo" (Aggarwal 2004, p. 88) as indicated by the norm of equity (see section 4.2.2.1). In exchange relationships with friends and relatives, also referred to as communal relationships, people provide benefits to express a concern for others and feel obliged to help others (Clark and Mils 1993) as indicated by the norm of reciprocity (see section 4.2.2.2).

Thus, equity and reciprocity constitute two applicable norms relating to distributive justice from which one can derive levers to increase the acceptance of targeting on a website as I will elaborate in the next two sections.

4.2.2.1   Equity as a Referent Standard for Distributive Justice

The norm of equity is given its most prominent express within equity theory, a cognitive theory of motivation developed by Adams (1963; 1965), most commonly employed in an organizational science context. According to equity theory, individuals evaluate social exchange situations by comparing their own contributions and outcomes with the contributions and outcomes of their relational partner (Carrell and Dittrich 1978). Equity exists if individuals perceive their

input/output ratio corresponds to the input/output ratio of the comparison other (Adams 1963), i.e.,

$$Equity\ if: \frac{Individual's\ perceived\ output}{Individual's\ perceived\ input} = \frac{Perceptions\ reg.\ comparison\ other's\ output}{Perceptions\ reg.\ comparison\ other's\ input}.$$

In a critique of Adams' work, Pritchard (1969) expanded the concept of perceived equity by introducing the notion of an 'internal standard'. According to this concept, an individual does not necessarily need a comparison other to perceive a situation as inequitable. Rather, she evaluates her inputs and outputs into a relationship according to an internally derived standard. This internal standard is based on an individual's past experience regarding exchange relationships and his knowledge of the market value of various inputs (Pritchard 1969). Thus, the general premise of equity theory is that people have a preference for equitable input/outcome ratios, termed the 'norm of equity' (Carrell and Dittrich 1978; Walster, Berscheid and Walster 1976). Compared with other norms of distributive justice, such as equality, the norm of equity can be assumed to be particularly salient in exchange relationships.

Equity and mechanisms to increase the acceptance of targeting. Within the context of information privacy, I argue that mechanisms increasing consumers' perceived benefits of targeted advertising, hereby improving their perceptions of distributive justice, are compatible with the norm of equity. The major restriction of such mechanisms is to be compatible with other (universal) norms, such as the norm of honesty. Thus, deceptive business practices that might increase the perceived benefits of targeting are excluded from my research.

Motivational power of equity and link to reciprocity. Several researchers have argued that the social norm of equity has motivational power because inequity creates dissatisfaction, distress, or guilt (Adams 1965; Carrell and Dittrich 1978; Huseman, Hatfield and Miles 1987). They argue that cognitive dissonance leads people to restore equity (Adams 1965; Carrell and Dittrich 1978). The greater the distress, the more effort an individual will put into reducing it. For this purpose, individuals use different equity restoring techniques (Adams 1965). Those techniques include altering or cognitively distorting own inputs or outcomes,

acting on or changing the comparison other's inputs or outputs, or leaving the field, i.e., ending the relationship (Huseman, Hatfield and Miles 1987). Therefore, the norm of equity is related to the universal norm of reciprocity, which is proven to have a particularly high level of motivational power.

4.2.2.2 Reciprocity as a Universal Norm

Most commonly, reciprocity is defined as a generalized social norm to return benefits for benefits received (Cialdini 1993; Pervan, Bove and Johnson 2009). Reciprocity implies treating other people the same way as they treat you on a voluntary basis instead of a binding exchange agreement (Kolm 2008). According to Gouldner (1960), a feeling of indebtedness towards the benefactor drives this norm. Most ostensibly, reciprocity can be thought of as a person's desire to repay a favor provided by someone else (Regan 1971). The tradition of social sciences restricts the term to favorable items (Kolm 2008). Still, many authors also subsume negative affections and behaviors, i.e., individuals' retaliation against those who acted against the individual (e.g., Becker 1986; Perguini et al. 2003). As a universal norm, reciprocity is present in all value systems (Gouldner 1960), and is the common principle of all major religions (Webster et al. 1999). As such, it is, for example, encoded in Jesus' phrase "As you would that men should do to you, do ye also to them likewise" or Confucius' "What you do not want done to yourself, do not do to others" (Singer 1981, p. 135-136).

The awareness on the power of reciprocity as a social norm dates back to ancient times, with Cicero noting: "There is no duty more indispensable than that of returning a kindness […] All men distrust one forgetful of a benefit" (Kolm 2008, p. 324). In the 1950s, researchers in sociology, psychology, and philosophy systematically started investigating reciprocity as an interpersonal construct that is fundamental to social stability (e.g., Becker 1986; Gouldner 1960; Homans 1958). As such, reciprocity comprises two minimal demands: "(1) people should help those who have helped them, and (2) people should not injure those who have helped them" (Gouldner 1960, p. 171). As a consequence, receiving a reward

entails a cost—the moral obligation to repay the benefactor (Gergen, Greenberg and Willis 1980).

Subsequently, different scientific disciplines have employed the concept of reciprocity to explain phenomena such as intimacy in close relationships (Surra and Longstreth 1990), altruism (Trivers 1971), corruption (Steidlmeier 1999), employee motivation and performance (Eisenberger et al. 2001), tariff reductions in international relations (Keohane 1986), and even animal behavior (de Waal and Berger 2000).

Reciprocity in economic research. In recent years, the concept of reciprocity and fairness considerations has also gained considerable attention in economic research (Kim, Natter and Spann 2009). An increasing activity in the field of experimental economics (e.g., Andreoni and Miller 2002; Bolton and Ockenfels 2000; Fehr, Ernst and Schmidt 2000; Fehr and Schmidt 1999; Rabin 1993) contributes to its increasing popularity. This research questions the idea of the "homo economicus"—a fully rational and self-utility maximizing individual—which has long been the basis of microeconomic theory, thereby acknowledging that fairness and reciprocity may guide individuals' behavior.[30]

Reciprocity in marketing research. The scholarly literature provides evidence that reciprocity may also be salient in marketing relationships. For example, consumers may feel indebted to purchase more if a salesperson serves them well, or feel obliged to make a donation when receiving a gift by a charitable organization (Cialdini and Trost 1998; Goranson and Berkowitz 1966). Morales (2005) found that consumers' reciprocate a firm's effort to make or display products nicely by increasing their willingness to pay (as long as they do not perceive the firm's effort as a sales strategy and thus perceive ulterior motives).

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[30] In this context, one commonly cited microeconomic experiment is the Ultimatum Game (e.g., Bolton 1991) in which two participants have to allocate a fixed amount of money between each other. According to the rules of the game, the proposer can determine the split of the money between the participants, and the responder can either accept or reject the proposal. If the responder rejects it, neither will receive anything. Empirical results indicate that an equal split (i.e., 50:50) is common. Also, respondents usually reject an offer of less than 20 percent. These results are in contrast to neoclassical economic theory, which suggests that the proposer will offer the responder an incrementally small amount and that the responder will accept any amount greater than zero (Kim, Natter and Spann 2009).

Reciprocal behavior is also found in price negotiations: If one negotiator makes a concession, the other negotiator is likely to reciprocate a concession; in turn, when one negotiator does not act in accordance with the norm of reciprocity, the other one retaliates (Cialdini and Trost 1998; Maxwell, Nye and Maxwell 1999, 2003). Kim, Natter and Spann (2009) found in several experiments that when individuals are told that they can freely chose how much to pay for a certain service received, they voluntarily pay an amount significantly greater than zero, i.e., reciprocate money for a benefit received.

Reciprocity and levers to increase the acceptance of targeting. Within the context of information privacy, I argue that any mechanism that induces people to reward a website for free content received is compatible with the social norm of reciprocity and meets normative requirements of business ethics (as long as such a mechanism is not contradictory with other norms in general and the minimum standards of informed consent in particular).

5.   Research Model and Hypotheses

5.1   Integrative Social Contracts Theory and Social Exchange Theory as a Research Frame

As detailed in chapter 4 outlining the normative foundation of this research, I conceptualize targeted advertising as a 'microsocial contract' grounded in the norms of fairness. This 'microsocial contract' should govern the exchange relationship between a website and its surfers. In this exchange relationship, a website offers free content to a consumer, and in return the consumer watches advertisements and may allow targeting so that the website can receive advertising revenues from a third party, the advertiser, who targets this consumer. Thus, the idea of a 'microsocial contract' as introduced by ISCT sets the normative requirements of my research.

Within my descriptive research model, I assume that consumers perform a cost-benefit tradeoff in which they weight potential benefits of targeted advertising against the psychological or monetary cost of a potential privacy intrusion. This is in line with several privacy researchers who have conducted studies based on a social exchange framework, providing evidence that consumers perform a privacy calculus when deciding whether to provide information (e.g., Chellappa and Sin 2005; White 2004; Xie, Teo and Wan 2006). Based on previous empirical evidence, I assume that mechanisms increasing consumers' fairness perceptions are effective in influencing the cost-benefit tradeoff.

In conclusion, fairness norms as a basis for deriving pragmatic, tangible mechanisms for websites to increase revenues through targeted advertising are central to this dissertation for two reasons. First, from a descriptive perspective, they appear effective in influencing my target variables, which I will elaborate in setting up my hypotheses (see sections 5.4 and 5.5.). Second, from a normative perspective (see chapter 4), they constitute appropriate rules to govern a 'microsocial contract'. As such, deriving mechanisms from fairness norms allows the assumption that most consumers would implicitly approve these mechanisms—the constituting criterion of a 'microsocial' contract. Furthermore,

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in order to meet the requirement of informed consent entailed by ISCT, I make sure that consumers tracked by a website are aware of targeting practices and have the possibility to opt-in or opt-out.[31] Figure 6 illustrates how this dissertation integrates a descriptive perspective and a normative perspective on factors to increase the acceptance of targeting through fairness norms.

	Descriptive Perspective (Chapter 5: Research Model) SOCIAL EXCHANGE THEORY	Prescriptive Perspective (Chapter 4: Normative Frame) SOCIAL CONTRACT THEORY
Purpose of application:	Derive hypotheses on factors to increase the acceptance of targeting	Set ethical boundaries to a quest for factors to increase the acceptance of targeting
Theory implications:	Factors should ▪ reduce the (psychological) cost and/or ▪ increase the perceived benefits of targeted advertisements	▪ Factors should be compatible with social norms ▪ Rules governing the "targeting contract" should be grounded in informed consent
Role of fairness norms:	Based on previous empirical privacy research, increasing procedural and distributive fairness appears as an effective way to address privacy concerns	Based on previous research on business ethics, existing fairness norms may constitute an operationalization of rules of a contract that individuals would consent to

ISCT integrates prescriptive research on business ethics and empirical findings regarding social norms; fairness norms allow deriving effective leavers while respecting normative requirements of business ethics

Figure 6: Research Framework of Dissertation Integrating a Descriptive and a Normative Perspective on Targeted Advertising

While the main focus of this dissertation is to study the effect of potential levers on two target variables which are of high managerial interest (to be presented in the next subchapter, 5.2), I also study consumers' underlying cognitive processes. The consideration of cognitive processes is important because they explain the effect of the mechanisms on the target variables. An understanding of those

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[31] Indeed, several authors agree that marketers breach an implied social contract when collecting information without consumers' awareness (e.g., Culnan 1995; Milne and Gordon 1993; Miyazaki 2008; Phelps, Nowak and Ferrell 2000).

cognitive processes will allow future research to develop further mechanisms helping websites to better finance their content and advertisers to reach their target group more efficiently. Furthermore, it allows for checking how consumers perceive those mechanisms and for control of other influences related to consumers' personal characteristics.

5.2 Acceptance of Targeting and Perceived Intrusiveness as Relevant Target Variables

In my research model, I study two related target variables relevant to websites employing targeted advertising: (1) customers' acceptance of targeted advertising carried out by a website; and (2) the perceived intrusiveness of targeted advertisements on a website.

Consumers' acceptance of targeted advertising on a website can be measured as informed, voluntary provision of information for targeting purposes, i.e., as informed consent (see also Culnan and Bies 2003; Dunfee, Smith, and Ross Jr. 1999 for a discussion regarding the requirements of informed consent). This construct is of high academic and managerial relevance. That is because recent academic studies found that most consumers are concerned about their privacy with regard to behavioral targeting (Alreck and Settle 2007; McDonald and Cranor 2010). In a survey by Turow et al. (2010), 66 percent of American adults rejected behavioral targeting. Alreck and Settle (2007) report that more than half of online surfers think that online tracking should be illegal. These findings suggest that targeting might entail risks to marketers because, in general, privacy concerns can lead to harmful consumer reactions, such as website avoidance (Chellappa and Sin 2005; Sheehan and Hoy 1999; Wirtz and Lwin 2009; Youn 2009; see also chapter 3 for a detailed review). As websites require high traffic to monetize their inventory, increasing acceptance is important for a manager in order to mitigate those risks, in particular the risk of website avoidance. It is also of high managerial relevance due to the fact that more and more websites depend

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on consumers' acceptance of targeting practices, for example when offering opt-out functionalities in response to increasing (self-) regulatory pressure.

Perceived intrusiveness, as detailed in section 2.3.2., is a cognitive process in which a consumer recognizes an advertisement as disturbing (Li, Edwards and Lee 2002). It is a construct that measures how much an advertisement causes an unwelcomed cognitive distraction which leads to negative affective responses, such as ad irritation, annoyance, or avoidance behaviors (Edwards, Li and Lee 2002; McCoy et al. 2008; see also section 2.3). Consumer attitude toward a particular advertisement is proven to mediate advertising effectiveness (e.g., MacKenzie, Lutz and Belch 1986). Hence, advertising intrusiveness is an important target variable because of its negative indirect effect on advertising effectiveness. In a recent seminal study on targeting and obtrusiveness of display advertisements, Goldfarb and Tucker (2011a) suspect that privacy concerns might negatively affect advertising effectiveness. Based on a subsequent laboratory experiment, Tucker (2011) suggests that this effect may be explained by reactance. However, the potential link between situational privacy concerns resulting from targeting practices and the perceived intrusiveness of targeted advertisements has not been systematically studied. Thus, the underlying reason for the reduction of advertising effectiveness that Goldfarb and Tucker (2011) find for highly obtrusive and targeted ads is not fully clear yet. Therefore, studying the cognitive processes related to privacy concerns and perceived intrusiveness will fill an important research gap and is of high practical relevance. That is because in addition to website traffic, advertising effectiveness is an important metric determining a website's revenues from advertising (see section 2.1.1.2.).

5.3   The Effect of Knowledge about Targeting Practices on Intrusiveness

Acceptance, i.e., informed consent, by definition requires proactively informing website visitors about targeting practices carried out by that website.

In the first instance, as most consumers are not fully aware of targeting practices (McDonald and Cranor 2010), I suppose that transparency results in a higher perceived intrusiveness. That is because surfers who know or suspect that an advertisement shown to them has been delivered via behavioral targeting might perceive this as a loss of control and as a threat to their ability to avoid being profiled when surfing online. This might lead to reactance (Brehm 1966), a motivational state arising in a person who perceives his freedom to be threatened, which leads to resistance and attempts to regain control of a situation (Brehm and Brehm 1981). As shown by Edwards, Li and Lee (2002), reactance is a mediator of advertising intrusiveness. Similarly, Marimoto and Macias (2009) found that unsolocited spam emails cause reactance and are perceived intrusive. Furthermore, the cognitions related to a potential threat of their privacy resulting from behavioral targeting, in particular trusting and risk beliefs, require additional mental processing, and thus interrupt surfers' cognitive processes. Thus, as intrusiveness measures how much an advertisements causes an unwelcomed cognitive distraction (Edwards, Li and Lee 2002; McCoy et al. 2008), I predict:

H$_1$: When informed about behavioral targeting practices employed by a website, customers perceive its advertisements to be more intrusive than if not informed.

Against this background, in the next subsections, I derive three mechanisms to alleviate the perceived intrusiveness and to increase the acceptance of targeting within three research models. As these research models all relate to the same target variables, they can be combined into one comprehensive research model, which I will do fur hypotheses testing.

5.4 Mechanisms Derived from Procedural Justice

According to SET, in order to be effective in influencing the target variables, mechanisms derived from procedural justice should *reduce the psychological cost of targeted advertising*. This is because previous privacy studies employing a cost-benefit framework have shown that factors reducing risks, and thus the psychological cost of information collection, drive consumers' provision of

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information for personalized marketing (e.g., Chellappa and Sin 2005; White 2004; Xie, Teo and Wan 2006; see chapter 3.3.1 for a detailed review).

In order to decrease the psychological cost of targeting, websites may employ mechanisms reducing consumers' assessment of potential harms related to targeting, or they may increase the consumers' perceptions of procedural fairness, or they may do both. This is because the recent online privacy literature indicates that consumers' privacy concerns relate to two facets of the interaction with a marketer (Ashworth and Free 2006): First, consumers are concerned about potentially harmful consequences of information *collection* (Malhotra, Kim and Agarwal 2004). These concerns relate to the risk of information abuse, including monetary harm resulting from identity theft or sharing of sensitive information with authorities (e.g., Buchanan et al. 2007; Milne 2003; Milne, Rohm and Bahl 2004; Youn 2009) and psychological harm resulting from annoyance, anxiety, or embarrassment (e.g., Dinev and Hart 2006; White 2004). Second, consumers are concerned about the fairness of their interaction with a marketer involving their information (e.g., Ashworth and Free 2006; Culnan and Armstrong 1999; Culnan and Bies 2003). With regard to procedural fairness, consumers' concerns revolve around being *aware* of marketers' information practices and about having *control* over their information (Malhotra, Kim and Agarwal 2004).

As shown in Table 10, my research model assumes that the principles of Fair Information Practices (FIP) as suggested by the FTC (Federal Trade Commission 1998) constitute a suitable basis to derive levers to increase the acceptance of targeting and reduce the perceived intrusiveness of targeted advertising. This assumption is based on both, normative and descriptive considerations. First, as detailed in 4.2.1, the FIP are in line with norms related to procedural justice, and therefore meet the normative requirements of ISCT: The principle of notice can be derived from the norms of openness and honesty, the principle of consent relates to the norm of permission, access to the norm of information access, and integrity/security corresponds to the norm of data security as can be seen in columns one and two of Table 10. Second, FIP are relevant from a descriptive perspective because they address the dimensions of privacy concerns as identified

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by Malhotra, Kim and Agarwal (2004) presented in chapter 3. Columns one and three of Table 10 show that the principle of notice addresses the dimension of *awareness* that consumer privacy concerns revolve around. The principle of consent partially addresses the dimension of *control* as it allows consumers to influence whether a company uses their information or not. As such, FIP should counter situational privacy concerns.

Principle of FIP	Normative Perspective: Related Social Norms	Descriptive Perspective: Dimension of Privacy Concerns	Main Focus of Privacy Dimension	Role within Research Framework
Notice	Openness, honesty	Awareness	Fairness	Prerequisite of informed consent
Consent	Permission	Control (consent)	Fairness	
Access	Information access	Control (information practices)	Fairness	Mechanism providing an additional level of control
Integrity/ Security	Data security	Collection (errors, secondary use, unauthorized access)	Risks, potential harms	Addressed indirectly through a high level of control
Source: Federal Trade Commission (1998)	Source: Ashworth and Free (2006); own	Source: Malhotra, Kim and Agarwal (2004); Smith, Milberg and Burke (1996)	Source: Own	Source: Own

Table 10: FIP as a Suitable Basis for Deriving Mechanisms Influencing the Target Variables

5.4.1 Research Model related to Providing a High Level of Control

Addressing customers' desire for control over their information. There is empirical evidence that addressing the privacy concern dimension of *control* reduces the psychological cost of personalized advertising and thus drives the provision of information for personalized marketing. People worry less about information collection when they have the possibility to opt-out (Nowak and Phelps 1995). Furthermore, consumers who are informed about data collection and name removal opportunities are less likely to request name removal from a

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mailing list (Milne and Rohm 2000). Similarly, Phelps et al. (2000) reported that people want to have more control over their information, and are thus more likely to purchase from direct channels if they have control over subsequent information use. In a survey by Hanley, Becker and Martinsen (2006), 23 percent of respondents indicated they would consider accepting ads on their cell phone if they could turn the ads off.

Specific mechanism to provide a high level of control. According to Malhotra, Kim and Agarwal (2004), the privacy concern dimension of control comprises that consumers believe they should be "allowed to control, i.e., add, delete, and modify at will, the information in the organization's database" (p. 350). Consequently, granting consumers **access** to their information—in addition to asking for consent to targeting practices which is a 'conditio sine qua non' of informed consent—constitutes a high level of control if users can *view* and *edit* the information stored on them. Although granting consumers access to their information is practically implementable this practice is currently not employed across the whole industry.

5.4.2 Perceived Procedural Justice

Consumer control over their information is at the core of procedural justice in the context of information privacy. According to Thibaut and Walker (1975), consumers view procedures as fair when they are vested with control of the procedures. Westin (1967) defined information privacy as the ability to control when, how and to what extent their information is shared with others. Son and Kim (2008) found that in order to increase the perceived fairness of procedures, companies need to give their customers control over the collection and use of their personal information. As described above, giving consumers access to their information, thereby allowing them to view and edit this information, increases consumer control. Furthermore, consumers' **access** to their information communicates a website's respect and value for its customers (Ashworth and Free

2006) and signals a strong commitment to ethical standards of procedural fairness. Therefore, I predict:

H$_2$: Providing customers with a high level of control by allowing them to view and edit the information stored on them increases perceived procedural justice.

5.4.2.1 Risk Beliefs

Situational privacy concerns are a central, empirically proven mediating variable affecting consumers' acceptance of personalized marketing practices (Malhotra, Kim and Agarwal 2004; Wirtz and Lwin 2009). Situational privacy concerns can be measured as risk beliefs, i.e., consumers' expectation of a high potential for loss associated with the release of information to a marketer (Dowling and Staelin 1994; Malhotra, Kim and Agarwal 2004). Consequently, risk beliefs may constitute a major component of the psychological cost of targeted advertising.

I believe that perceived procedural justice resulting from a high level of consumer control over their information alleviates situational privacy concerns because it informs consumers' assessment of privacy risks. In general, risk can be defined as uncertainty resulting from the potential of a negative outcome (Havlena and DeSarbo 1991; Norberg et al. 2007). An individual's evaluation of risk is determined by the perceived *likelihood* that the negative event occurs and the perceived *severity* of that event (Norberg et al. 2007; Peter and Tarpey Sr. 1975). Consumers' perception that a website employs fair procedures might reduce the perceived *likelihood* that the negative event, such as secondary use or unauthorized access occurs. Furthermore, when consumers perceive a high level of procedural fairness because of being able to manage what information a website stores on them, they should also be able to better assess the *severity*, i.e., the magnitude of psychological or monetary harm if a negative event occurs. Thus overall, perceived procedural justice should reduce uncertainty, thereby preventing consumers from overrating potential harmful consequences related to targeted advertising. Consequently, fair procedures should reduce the concerns

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revolving around potential risks resulting from a collection of personal information.

Empirical studies conducted in similar settings provide some support for my arguments. In a direct mail context, Culnan (1995) found that privacy concerns were lower among consumers who were aware of name removal procedures. In a study on location based services, Xu (2007) showed in three laboratory experiments that people have fewer privacy concerns when given explicit control over the publication of their location data. In an e-commerce setting, Wirtz and Lwin (2009) found a direct effect of procedural justice on situational privacy concerns. Furthermore, several privacy researchers have confirmed that Fair Information Practices mediate situational privacy concerns raised by the disclosure and subsequent use of personal information (e.g., Bies 1993; Culnan and Armstrong 1999; Culnan and Bies 2003). Therefore, I predict:

H$_3$: Perceived procedural justice reduces risk beliefs related to targeted advertising.

As consumers are assumed to weight the psychological cost of personalized marketing against potential benefits within what is known as the 'privacy calculus' (e.g., Chellappa and Sin 2005; Laufer and Wolfe 1977; White 2004; Xie, Teo and Wan 2006), risk beliefs are a central determinant of whether or not consumers provide information to a marketer. This argument is supported by findings that overall risk perceptions regarding information disclosure have a negative impact on consumers' intentions to provide a marketer with information (Malhotra, Kim and Agarwal 2004; Norberg et al. 2007). It is also in line with a study by Brandimarte, Acquisti and Loewenstein (2010) yielding that control over the publication of private information reduces situational privacy concerns and increase respondents' propensity to disclose sensitive information even when the objective risks associated with a disclosure do not change. Thus, I propose:

H$_4$: Risk beliefs have a negative effect on the acceptance of targeting.

As predicted in H$_1$, consumers may perceive targeted advertisements as more intrusive than non-targeted because of reactance that may arise when consumers

perceive targeted advertisements as a threat to their ability to avoid being profiled while online. In a recent laboratory experiment by Tucker (2011), consumers experienced more reactance towards personalized advertisements when they were given low control than when given more control. This suggests that the more severe consumers perceive a potential privacy threat, the stronger their reactance. This, in turn, should increase the perceived intrusiveness of targeted advertisements. Furthermore, an evaluation of potential risks requires mental processing capacity, and therefore constitutes a cognitive disruption, which is another source of intrusiveness. Therefore, I predict:

H₅: Risk beliefs have a positive effect on the perceived intrusiveness of targeted advertisements on a website.

5.4.2.2 Trusting Beliefs

In addition to situational privacy concerns, i.e., risk beliefs, trusting beliefs are the second central mediating variable that affects consumers' acceptance of personalized marketing practices (Malhotra, Kim and Agarwal 2004; Wirtz and Lwin 2009). Many studies have shown that trust and risk are the two most salient beliefs in situations in which information privacy is relevant (e.g., Malhotra, Kim and Agarwal 2004; Milne and Rohm 2000; Miyazaki and Fernandez 2000; Sheehan and Hoy 2000). While trusting and risk beliefs are often negatively correlated, they are not the same construct (Wirtz and Lwin 2009). In fact, consumers can perceive a low level of trust and a low level of situational privacy concerns or a high level of trust and a high level of situational privacy concerns at the same time (Milne and Boza 1999). With regard to consumers' decision about whether to provide a marketer with information, high trust has been found to compensate for low privacy and vice versa (Joinson et al. 2010).[32]

Mayer, Davis and Schoorman (1995, 2007) define trust as the willingness to be vulnerable to the actions of another party, based on the expectation that the other

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[32] Thus, reducing situational privacy concerns and building trust may constitute two different approaches to encourage consumers to disclose information (Wirtz and Lwin 2009).

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party will perform a certain action that one might not be able to control. Fair procedures convey a marketer's adherence to normative standards of respectful behavior (Ashworth and Free 2006). Consequently, if customers perceive that a website employs fair procedures when dealing with their data, they should expect that the website will not abuse their personal information. Enacting fair procedures should thus increase a company's trustworthiness, which should then increase consumers' trust in that website (Lauer and Deng 2007). As such, procedural fairness would constitute an intermediary to build trust (Culnan and Armstrong 1999). Therefore, I predict:

H$_6$: Perceived procedural justice increases trusting beliefs.

As trust in the context of information privacy is based on the expectation that a website will not abuse a customer's personal information, trust reflects consumers' willingness to assume the risks related to a provision of information (Culnan and Bies 2003). Accordingly, trust has been proven to be an important determinant in consumers' disclosure behavior (e.g., Chellappa and Sin 2005; Dinev and Hart 2006; Joinson et al. 2010; Malhotra, Kim and Agarwal 2004; Wirtz and Lwin 2009). As the trust-provision of information for personalized marketing relationships has been proven in different e-commerce settings (e.g., Chellappa and Sin 2005; Malhotra, Kim and Agarwal 2004), I believe that it also exists in the context of targeted advertising and that respondents' intentions to provide a marketer with information measured in those studies translates into customers' acceptance of the respective marketing practices. Therefore, I predict:

H$_7$: Trusting beliefs have a positive effect on the acceptance of targeting.

Customers who trust in an online firm may be more likely to infer that the firm will not use their information beyond the original purpose because they assume the firm adheres to high normative standards (Ashworth and Free 2006). If consumers believe this, they may perceive its targeting practices as less threatening to their freedom. Thus, trust should alleviate reactance, a proven mediator of intrusiveness. Therefore, I predict:

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H₈: Trusting beliefs reduce the perceived intrusiveness of advertisements on a website.

5.4.3   Overall Effect of Providing a High Level of Control

Figure 7 summarizes my research model regarding the predicted effects of providing a high level of control on consumers' cognitive processes, which I, in turn, hypothesize to have an effect on the two target variables—acceptance of targeting and perceived intrusiveness of targeted advertisements. This mediation model, or SOR-model, considers an indirect effect of the high control mechanism on the target variables.
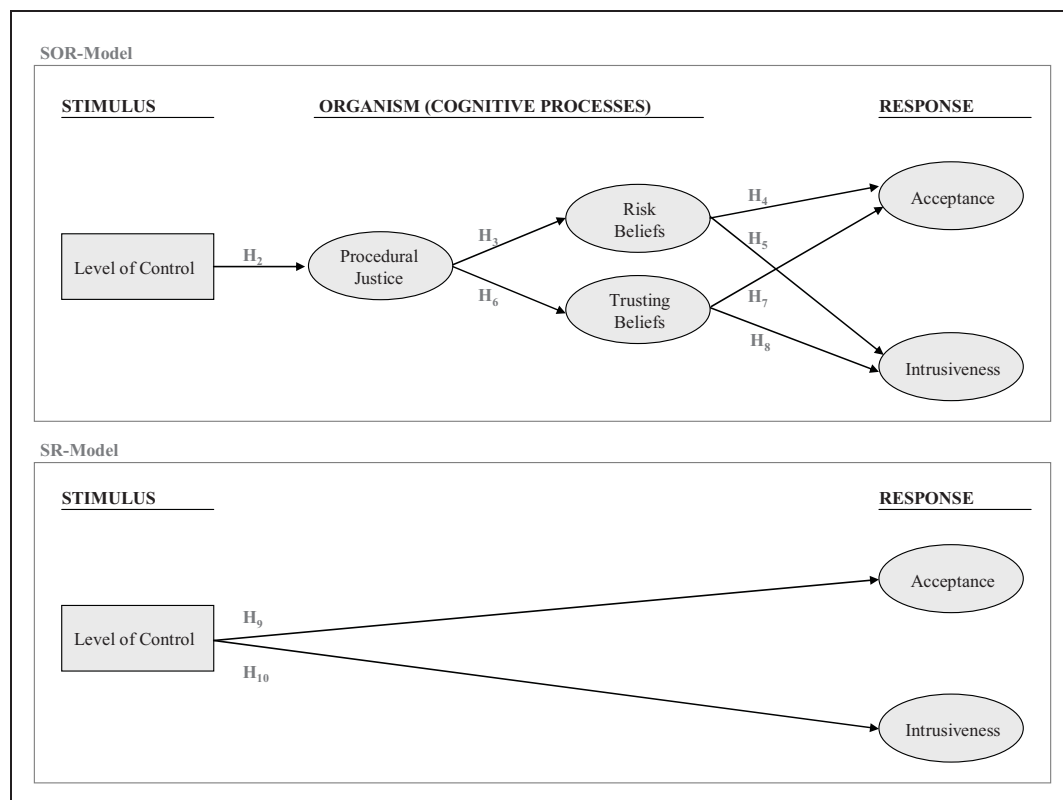
Figure 7: Research Model Related to Providing a High Level of Control

However, from a managerial perspective, the most relevant question is how the mechanism affects the target variables, irrespective of the mediating cognitive processes. In fact, currently only few online firms allow consumers to access and

edit their information[33] while other firms appear highly reluctant (Federal Trade Commission 2010). Therefore, I also introduce hypotheses on the effect of providing a high level of control on targeting acceptance and intrusiveness. This allows me to also test the mechanism within an SR-model as depicted in Figure 7, too. Thus:

H9: Providing customers a high level of control by allowing to view and edit the information stored about them in addition to asking for consent increases the acceptance of behavioral targeting compared with only asking for consent.

H10: Providing customers a high level of control by allowing to view and edit the information stored on them in addition to asking for consent reduces the perceived intrusiveness of targeted advertisements on a website compared with only asking for consent.

5.5 Mechanisms Derived from Distributive Justice

Given existing evidence that consumers perform a cost-benefit privacy calculus with regard to the provision of information for personalized marketing (Chellappa and Sin 2005; White 2004; Xie, Teo and Wan 2006), mechanisms related to distributive justice should increase the perceived benefits of targeted advertising. More specifically, in order for those mechanisms to be effective in increasing targeting acceptance and reducing intrusiveness, they should make sure that consenting to targeting is a rewarding action for consumers. This is because according to social exchange theory, individuals tend to perform actions that generate outcomes which are rewarding to them (Emerson 1976).

5.5.1 Research Model related to Emphasizing Advertising Relevance

In line with the norm of equity which implies that people have a preference for equitable input/outcome ratios (Carrell and Dittrich 1978; see chapter 4.2.2.1 for a

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[33] For example, the Google Ad Preferences Tool and the Yahoo Ad Interest Manager give users the possibility to access and edit the interest categories stored about them or to opt-out of the ad-targeting cookie (Google 2009; Yahoo 2011).

detailed review) consumers may feel relatively under rewarded when a marketer uses their information without a corresponding outcome for them (Ashworth and Free 2006). Therefore, in order to increase the acceptance of targeting, websites should emphasize consumers' benefits from targeted advertising. As targeting aims to match advertisements with customers' interests, an instantaneous benefit from targeting might higher advertising relevance.

5.5.1.1 Relevance Anticipation

The advertising industry often claims that targeting makes advertisements more relevant and more useful to consumers, and thus constitutes a benefit (Alreck and Settle 2007; Ehrlich 2007; Hof 2008). Many websites argue that targeting is in the best interests of the consumer as surfers are provided with offers or information they are most interested in (Alreck and Settle 2007). As the primary function of advertising is information (Nelson 1974), this argument appears reasoned. Thus, when trying to convince consumers to provide information for targeted advertising, websites often claim that targeting makes advertisements displayed to consumers more interesting (e.g., "You do not see more, but more interesting ads"; see also screenshots in Figure 2 on page 27). Apparently, there is a widespread belief in the advertising industry that consumers are not sufficiently aware of advertising relevance as a supposed benefit of targeted advertising. In fact, according to research by the Interactive Advertising Bureau (IAB), only 28 percent of consumers are aware of the term 'online behavioral targeting' (2009a). Therefore, the industry currently aims to inform online consumers that targeting increases advertising relevance. Based on this observation of current industry practice, I predict:

H_{11}: Informing customers that targeting makes advertisements more relevant increases customers' anticipation to see relevant advertisements as a result of targeting practices.

As SET assumes individuals to perform actions that are rewarding to them, customers' anticipation that targeting makes advertising more relevant will have a

positive effect on the target variables if they perceive interesting advertisements as a benefit. In that regard, several academic studies have suggested that consumers do perceive relevance as a benefit. Krishnamurthy (2001) identified message relevance as a factor that drives permission marketing adoption. Bauer et al. (2005) found that information value contributes to consumer acceptance of mobile marketing. A conjoint study in a direct mail context by Milne and Gordon (1993) showed that respondents prefer less mail and more targeted mail. Milne (1997) observed that consumers are more willing to provide permission to a third party if informed that the third party offers products or services that match the consumer's interest. Furthermore, in two recent surveys, 45 percent and 32 percent of respondents respectively expressed a preference for relevant advertisements (McDonald and Cranor 2010; Turow et al. 2010). In line with these findings, Alreck and Settle (2007) emphasized the advantage of targeting as it reduces irrelevant advertisements. Also Chandra (2006, 2009) supposed that consumers derive lower disutility or even higher utility from advertising products that are more relevant to them. Thus, I predict:

H$_{12}$: Customers' anticipation to see relevant advertisements as a result of targeting increases the acceptance of targeting.

Perceiving relevant advertisements as benefit also appears to translate into consumers' more favorable perceptions of targeted ads. Edwards, Li, and Lee (2002) found that consumers rate advertisements they perceive more informative as less intrusive than less informative advertisements. White et al. (2008) reported that reactance towards highly personalized advertisements is particularly strong if consumers perceive the utility of the advertised service as particularly low. This is consistent with findings by Aaaker and Bruzzone (1985) that ads perceived as containing useful information are perceived less irritating than ads not deemed useful. This effect may be explained by the fact that (advertising) communication creates two opposed psychological forces: Whereas highly persuasive communication can lead to reactance, communication deemed helpful or delivered by a liked or respected person creates so-called positive social influence (Clee and Wicklund 1980). Thus, the perceived value of an advertisement might create some

positive social influence. Based on those findings, I believe that the degree to which consumers perceive benefits from targeted advertisements counters their perceptions of intrusiveness. Specifically, I propose:

H₁₃: Customers' anticipation for relevant advertisements due to targeting practices reduces the perceived intrusiveness of targeted advertisements on a website.

5.5.1.2 Overall Effect of Emphasizing Advertising Relevance

Taking into consideration the above hypothesized relationship between informing consumers about a higher level of advertising relevance resulting from targeting, relevance anticipations, and the two target variables within a mediation model (SOR-model) as depicted in Figure 8, I also propose that the effect of emphasizing advertising relevance exists on an SR-level, thus:

H₁₄: Informing customers that targeting makes advertising more interesting to them increases consumers' acceptance of targeting compared with not emphasizing relevance.

H₁₅: Informing customers that targeting makes advertising more interesting to them reduces the perceived intrusiveness of targeted ads compared with not emphasizing relevance.

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positive social influence. Based on those findings, I believe that the degree to which consumers perceive benefits from targeted advertisements counters their perceptions of intrusiveness. Specifically, I propose:

H_{13}: Customers' anticipation for relevant advertisements due to targeting practices reduces the perceived intrusiveness of targeted advertisements on a website.

5.5.1.2 Overall Effect of Emphasizing Advertising Relevance

Taking into consideration the above hypothesized relationship between informing consumers about a higher level of advertising relevance resulting from targeting, relevance anticipations, and the two target variables within a mediation model (SOR-model) as depicted in Figure 8, I also propose that the effect of emphasizing advertising relevance exists on an SR-level, thus:

H_{14}: Informing customers that targeting makes advertising more interesting to them increases consumers' acceptance of targeting compared with not emphasizing relevance.

H_{15}: Informing customers that targeting makes advertising more interesting to them reduces the perceived intrusiveness of targeted ads compared with not emphasizing relevance.

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Figure 8: Research Model Related to Emphasizing Advertising Relevance

5.5.2   Research Model related to Appealing to Reciprocity

Targeting should constitute an indirect benefit to consumers in that it helps a website to finance content that consumers may use free of charge. According to the norm of reciprocity, individuals have an innate desire to return benefits for benefits received. Thus, with regard to the norm of reciprocity, free content might constitute a benefit to consumers that they might wish to reciprocate, for example by consenting to targeting, hereby allowing a website to generate higher advertising revenues.

Yet, after many years of receiving online content for free, consumers have developed a "free mentality", i.e., they take free content for granted as they are not used to paying a website for the content received (Dou 2004). Thus, the norm of reciprocity would not be salient in the context of targeted advertising. Salience means that beliefs or attitudes are readily accessible in an individual's cognitive field, and are thus "on top of [an individual's] mind", thereby occupying the

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individual's attention (Krech and Crutchfield 1948, p. 48). However, for norms to have motivational power and to guide behavior, they need to be salient (Cialdini, Kallgren and Reno 1991; Kallgren, Reno and Cialdini 2000).

As the norm of reciprocity has high motivational power (Adams 1965; Carrell and Dittrich 1978; Huseman, Hatfield and Miles 1987) if salient, a mechanism that makes the norm of reciprocity focal should be effective in driving the acceptance of targeting. In fact, a substantial number of empirical studies on priming have shown that certain stimuli or cues can activate existing knowledge, thereby influencing an individual's response to a subsequent stimulus or task (for a detailed literature review see Higgins 1996; Wyer Jr. 2008). This priming effect can be explained through research on knowledge accessibility and salience, which are "synonyms for the same basic concept" (Higgins 1996, p. 133). Accessibility is the activation potential of existing stored knowledge[34], i.e., the likelihood that certain knowledge will be used in information processing (Förster and Liberman 2007; Higgins 1996; Wyer Jr. 2008). Priming refers to procedures that activate stored knowledge and so increase knowledge accessibility temporarily, which, in turn, increases the likelihood that this knowledge will be activated by a subsequent stimulus (Higgins 1996). Consequently, I believe a website's appealing to reciprocity may increase the likelihood that a consumer employs the concept of reciprocity when making subsequent judgments and decisions regarding targeted advertising, which should increase the likelihood of reciprocal behavior.

5.5.2.1 Normative Reciprocity

An appeal to reciprocity in which a website points out to a visitor that he or she has received a benefit from the website should make the reciprocity norm focal and thereby create a feeling of moral obligation to reward the website. That is because the norm of reciprocity leads people to feeling indebted toward a donor

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[34] In neuropsychology, existing knowledge is also referred to as available knowledge (Häusel 2007; Higgins 1996; Raab, Gernsheimer and Schindler 2009). Availability implies that a certain knowledge is stored in memory, which is a condition for accessibility (Higgins 1996).

from which one has received a benefit (Gouldner 1960; Greenberg 1980). In fact, individuals have been found to be psychologically and emotionally averse to over-benefiting from social interactions (Uehara 1995). I believe that this also applies to the context of free online content if the norm of reciprocity is focal. Thus, I propose:

H16: Appealing to reciprocity increases customers' feeling of indebtedness towards the website offering free content.

Indebtedness is a state of "arousal and discomfort" (Greenberg 1980, p. 4). People try to relieve this negative feeling by reciprocating the donor, which explains the high motivational power of the norm of reciprocity (Greenberg 1980). A considerable body of literature confirms the indebtedness-reducing function of reciprocal behavior (e.g., Aikawa 1990; Goranson and Berkowitz 1966; Morales 2005; Regan 1971). Against this background, I believe that the more a customer experiences a feeling of indebtedness after having received free content from the website, the more he or she is motivated to reward the website by consenting to targeting. Thus, I predict:

H17: A feeling of indebtedness towards the website offering free content increases the acceptance of targeting.

Consumers who feel a state of moral obligation to repay the website after having received free content should experience lower reactance towards targeted advertisements than they would otherwise do. This is because cognitions related to potential ways to reciprocate the website should be more salient than cognitions related to a potential threat of their ability to avoid being profiled, a source of reactance. Furthermore, consumers may recognize targeted advertisements as a useful means to reciprocate the website and thus recognize them as useful, which, in turn, should lower reactance and perceived intrusiveness. Therefore, I predict:

H18: A feeling of indebtedness towards the website offering free content reduces the perceived intrusiveness of its targeted advertisements.

5.5.2.2 Perceived Distributive Justice

While an appeal to reciprocity may gain its motivational power by creating a feeling of indebtedness, it may also be driven out of a mere preference for distributive justice. Both constructs are closely related, as a feeling of indebtedness is rooted in a desire for equitable outcomes of exchanges (e.g., Morales 2005; Regan 1971; Uehara 1995). However, they are different in that indebtedness is more of a negative affect, whereas consumers' preference for distributive justice is positively valenced.

As mentioned previously, one cause of consumers' rejection of personalized or targeted advertising practices may be that consumers feel relatively under-rewarded when a marketer uses their information without a corresponding outcome for them (Ashworth and Free 2006). An appeal to reciprocity in which a website asks for permission to conduct behavioral targeting *in exchange for providing free content* should increase consumers' awareness that the website has already made a substantial contribution to the exchange relationship. As such, consumers should recognize free content as a benefit received and include it into their evaluation of distributive fairness with regard to targeted advertising. Consequently, consumers should feel less under rewarded, which should positively impct their assessment of distributive justice. Therefore, I predict:

H$_{19}$: Appealing to reciprocity increases customers' perception of distributive justice with regard to targeted advertising.

As individuals tend to have a preference for equitable input/output ratios in exchange relationships with business partners (Aggarwal 2004), they should be more willing to accept targeting once they recognize that free content provided by the website constitutes a benefit to them. That is because within their assessment of distributive justice customers might come to the conclusion that consenting to targeting in exchange for receiving free content constitutes a matter of distributive fairness. As empirical evidence suggests that acting in line with ones preference for distributive fairness increases satisfaction (Maxwell, Nye and Maxwell 1999), customers should then be more inclined to reward the website by consenting to

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targeting. This assumption is in line with a recent study by Kim, Natter and Spann (2009) who found that people act in a fair or altruistic manner by paying something for a service received on a fully voluntary basis. Therefore, I predict:

H$_{20}$: Customers' perception of distributive justice with regard to targeting increases the acceptance of targeting.

With regard to the proven effect of positive social influence on reactance discussed previously, consumers' perception that a website's conducting of targeting is fair should counter their reactance vis-à-vis targeted advertisements. Therefore, I predict:

H$_{21}$: Customers' perception of distributive justice with regard to targeting reduces the perceived intrusiveness of targeted advertisements on a website.

5.5.2.3   Utilitarian Reciprocity

While distributive fairness-driven reciprocal behavior has received most attention in social psychological research, the literature also describes other motivational sources of reciprocal behavior (e.g., Greenberg 1980; Kolm 2008; Webster et al. 1999). Different motivations of reciprocal behavior are not mutually exclusive, but the strength of their influence in certain situations may vary (Greenberg 1980). Among them, *utilitarian reciprocity* should be of particular relevance with regard to mechanisms to increase the acceptance of targeting. Utilitarian reciprocity reflects that reciprocal behavior may be induced by a recipient's desire to receive further benefits from the donor in the future (Greenberg 1980). In contrast to normative reciprocity, the reciprocal actions can be purely economically self-interested (Kolm 2008) and not driven out of justice considerations.[35]

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[35] The literature also describes *liking reciprocity* (Kolm 2008) and *extrinsic reciprocity* (Webster et al. 1999). The term liking reciprocity reflects that reciprocal behavior may be driven by a recipient's increased attraction to the donor, which is mediated by attribution processes related to receiving a reward (Greenberg 1980). Returning a benefit to the initial donor enables the initial recipient to have further interaction with the donor and use the gift as a sign of appreciation, which might, in turn, increase the donor's affection (Greenberg 1980). Extrinsic reciprocity reflects that the motivation for reciprocal behavior may stem from social rewards and cost (Webster et al. 1999). In this case, an individual behaves in a reciprocal manner to gain

In fact, the suggested mechanism of appealing to reciprocity, which consists of asking customers to consent to targeting in exchange for receiving free content from the website should also increase consumers' awareness that the website needs revenues to sustain its free content, and that targeting constitutes an important revenue source. Thus, I predict:

H$_{22}$: Appealing to reciprocity increases customers' expectation that targeting will allow the website to continue providing free content in the future.

As utilitarian reciprocity can be considered a typical microeconomic sequential exchange in which an agent reciprocates a benefit in order to increase the probability of receiving another benefit in the future (Greenberg 1980; Kolm 2008), consenting to targeting should constitute a way to increase the likelihood of receiving free content from the website in the future. Thus, I predict:

H$_{23}$: Customers' expectation that targeting will allow the website to continue providing free content increases the acceptance of targeting.

Recognizing that targeting serves the function of increasing the likelihood of receiving free content in the future should also create positive social influence, hereby reducing consumers' reactance and consequently reduce the perceived intrusiveness of targeted advertisements. Thus, I predict:

H$_{24}$: Customers' expectation that targeting will allow the website to provide free content in the future will reduce the perceived intrusiveness of targeted advertisements on a website.

5.5.2.4 Overall Effect of an Appeal to Reciprocity

As depicted in Figure 9, I predict an appeal to reciprocity will have a positive effect on three motivational sources of reciprocal behavior, which are all, in turn, hypothesized to influence the two target variables. As the direction of the effects

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social acceptance and avoid social shame (Eisenberger et al. 2001). Although gaining or losing social acceptance in an interpersonal exchange situation is rooted in the norm of reciprocity, it is different from normative reciprocity in that it is not driven by a person's intrinsic desire, but by external pressure. Overall, due to the anonymity of most free content websites, such as newspaper websites those two motivational sources would appear not to be central to the issue of targeted advertising and free content, but are mentioned here for the sake of completeness.

of the motivational states on the dependent variables are hypothesized to be the same, the effect of an appeal to reciprocity on the target variables can also be appropriately captured by SR-level hypotheses. Thus:

H$_{25}$: An appeal to reciprocity increases customers' acceptance of targeted advertising on a website compared with not appealing to reciprocity.

H$_{26}$: An appeal to reciprocity reduces the perceived intrusiveness of targeted advertisements on a website compared with not appealing to reciprocity.
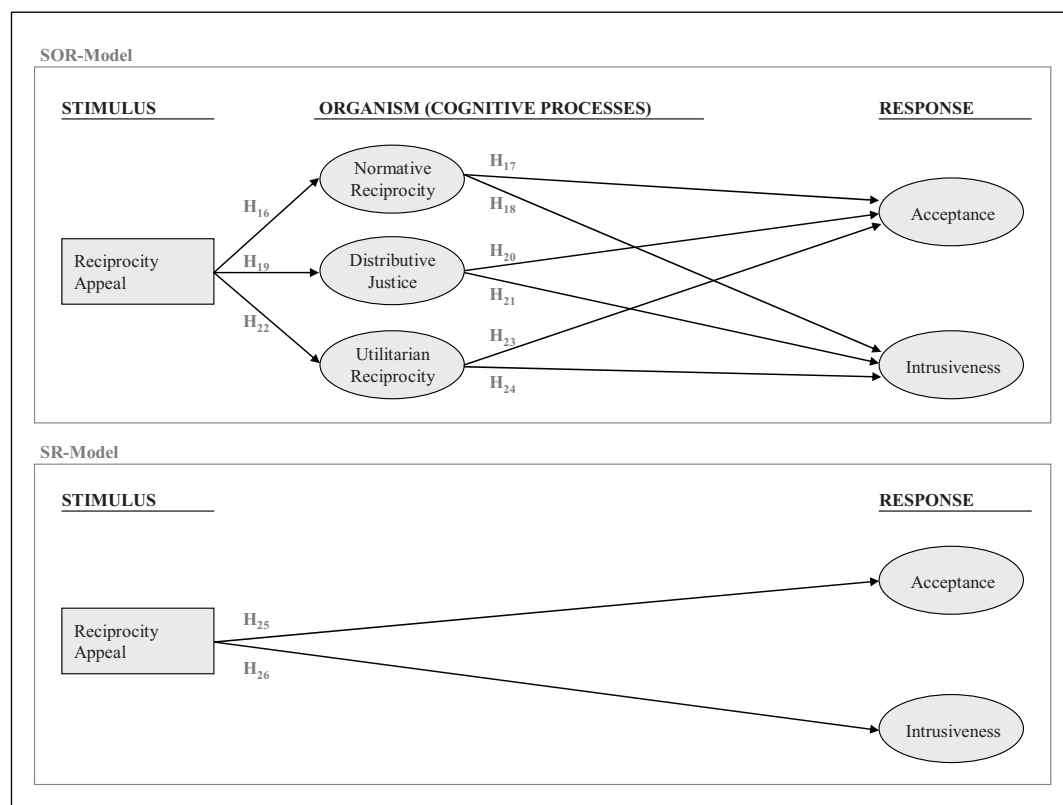
Figure 9: Research Model Related to Appealing to Reciprocity

5.5.3 Interaction of Relevance and Reciprocity

If different norms are applicable in a given situation, the norm that is activated guides behavior (Cialdini, Kallgren and Reno 1991). The two mechanisms related to relevance and to reciprocity might create two different forces: Whereas the relevance mechanism aims to satisfy the desire to be rewarded by the website, the reciprocity mechanism aims to create a desire to reward the website. Therefore,

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one of the two motivational states might be more salient and have a stronger effect in guiding behavior. Thus, I predict:

H₂₇: Informing customers about the benefits of advertising relevance and appealing to reciprocity interact in that the total effect on (i) acceptance of targeting and (ii) perceived intrusiveness of employing both mechanisms simultaneously is smaller than the sum of the effects if each of these mechanisms were employed individually.

5.6   Influence of Non-Situational Factors

In addition to the cognitions and feelings related to the derived mechanisms—for simplicity henceforth referred to as cognitive processes—further factors might have an important effect on the acceptance of targeting and the perceived intrusiveness of targeted advertisements on a website. Although these factors may not be directly influenced by the mechanisms employed, they are still considered as highly relevant personal characteristics or non-situational cognitions to be deliberated in this research.

5.6.1   General Concern for Privacy

As described in chapter 3.1.1, individuals may vary in their privacy sensitivity, i.e., how much they generally tend to be concerned about their privacy (e.g., Buchanan et al. 2007; Dinev and Hart 2006; Malhotra, Kim and Agarwal 2004). The construct of general concern for privacy strongly influences how much individuals worry about their privacy in specific situations, and thus how they assess potential privacy risks (Malhotra, Kim and Agarwal 2004). Therefore, consumers' privacy sensitivity should influence their situational privacy concerns when confronted with targeting practices. Thus, I predict:

H₂₈: Customers' general concern for privacy increases their risk beliefs.

5.6.2   Other Non-Situational Factors

Consumers are found to differ in their *general attitude towards advertising* (Pollay and Mittal 1993). This general attitude influences their attitudes towards specific ads, and thus advertising effectiveness (MacKenzie and Lutz 1989). Therefore, the construct might have an influence on the acceptance of targeting and the perceived intrusiveness of targeted advertisements in the context of information privacy. It may, for example, influence how much consumers are willing to accept targeting as a means of reciprocating the website for free content received.

Furthermore, the dependent variables in my research models may be influenced by customers' perceptions of the *utility of the website* that employs targeting. For example, if consumers perceive a website as particularly useful, they might be more willing to reciprocate. They might also infer that a website offering useful content might also display useful ads, or they might perceive a website offering useful content as more trustworthy.

While it is unclear—based on previous literature and the social exchange perspective employed in setting my hypotheses—how exactly those factors affect consumers' cognitions related to targeted advertising, their potential effect should be taken into consideration in order to make sure those variables do not confound my results. Therefore, I will include them as control variables in my subsequent empirical model tests.

As mentioned, for hypotheses testing, I will integrate all presented research models each relating to one mechanism hypothesized to affect the target variables into one comprehensive SR-model and one comprehensive SOR-model.

6.   Empirical Research

6.1   Research Design

I conducted two studies to test my hypotheses. The context of study 1 was an opt-in decision for behavioral targeting on a website providing free content. It was designed as a laboratory experiment followed by a survey (see section 6.1.2 for a detailed description). Study 1 enabled me to test a full SOR-model as developed in chapter 5, because the subsequent survey allowed me to measure respondents' cognitive processes and attitudes. Study 2 was a large-scale field experiment in which I asked users to provide personal information for targeting (see section 6.1.3 for a detailed description). I conducted study 2 to validate the most important findings from study 1 in a real world setting, which allowed me to test the effects of my suggested mechanisms within an SR-model.

6.1.1   Methodological Considerations

To ensure methodological rigor of my empirical privacy research, there were three areas that were particularly relevant, namely the nature and requirements of experimental research designs (see section 6.1.1.1), dimensions of epirical validity (see section 6.1.1.2), and priming methods in experiments (see section 6.1.1.3).

6.1.1.1   Experiments as Research Design

Experimentation is the primary method in causal research (Malhotra 2007). While descriptive research is appropriate to determine the degree of association between different variables, experiments are appropriate for examining cause-and-effect relationships (Eschweiler, Evanschitzky and Woisetschläger 2007; Malhotra 2007). In order to obtain evidence of causal relationships, an experiment requires a structured design in which the independent variables are manipulated in a relatively controlled environment (Kirk 2009; see also Malhotra 2007 for a classification of experimental designs). A relatively controlled environment requires that the researcher is able to control and check for extraneous variables

that may affect the dependent variables (Malhotra 2007). Thus, in order to infer causality, the effect of the manipulations on one or several dependent variables is measured, while controlling for possible confounding variables (Winer 1999).

As the aim of this dissertation is to develop and test mechanisms that increase the acceptance of targeting and reduce the perceived intrusiveness of targeted advertisements, experimentation was the empirical method of choice. Selecting an experimental research design is in line with previous privacy research studying factors increasing the acceptance of personalized marketing (e.g., Hann et al. 2007; Ward, Bridges and Chitty 2005; see also Table 6 on page 80 for an overview). It also corresponds to the methodological state of the art of international marketing research: A study by the Marketing Center of the University of Münster found that 40 percent of studies published in international marketing journals between 1996 and 2006 were experimental in nature (Eschweiler, Evanschitzky and Woisetschläger 2007). Furthermore, a survey among publishers of international marketing journals revealed that a combination of laboratory and field experiments—as conducted in the context of this dissertation—will gain importance (Eschweiler, Evanschitzky and Woisetschläger 2007).

While experiments are the preferable method in causal research, important conditions must be satisfied to be able to infer causality. First, there needs to be concomitant variation, meaning that an independent variable and a dependent variable vary together as predicted by the respective hypothesis (Malhotra 2007). To account for this requirement, before testing the actual hypotheses in sections 6.3 and 6.4, I will present descriptive statistics providing evidence of concomitant variation at the beginning of the respective sections. Second, as will be detailed in sections 6.1.2 and 6.1.3, my research design accounted for the time order of occurrence requirement, which states that the causing event must occur before or simultaneously with the effect (Malhotra 2007). Third, causal inferences require that the independent variables investigated constitute the only possible causal explanation in absence of other possible causal factors (Malhotra 2007). While, in practice, an effect of other factors usually cannot be fully excluded, I employed

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several techniques to control potential extraneous factors so as to obtain a high level of validity (see also the discussion in the next section).

Furthermore, some experimental designs require manipulation checks. Because manipulation checks are often reported in journal articles, I will briefly outline their purpose and explain why—in their classical meaning—they do not to my research questions and design. Manipulation checks are highly relevant if the independent variable is a latent construct (Eschweiler, Evanschitzky and Woisetschläger 2007). As latent variables cannot be altered directly, they need to be manipulated indirectly, for example by telling respondents stories or by changing their environment (Perdue and Summers 1986). As a researcher cannot know for sure whether the indirect manipulation was successful in altering the hypothesized independent variable, a manipulation check serves to make sure that the independent variable actually differs across treatment groups (Perdue and Summers 1986).[36] However, a manipulation check is not indicated with observable, dichotomous independent variables (Eschweiler, Evanschitzky and Woisetschläger 2007). For example, when a researcher wishes to study whether the type of advertisement shown to consumers, such as a comparative slogan vs. a non-comparative slogan, affects consumers' attitudes towards the advertised brands, manipulation checks are not required because the cause-effect relationship cannot be altered by potential mistakes in manipulating the independent variable (Eschweiler, Evanschitzky and Woisetschläger 2007). Similar to this example, my research does not require manipulation checks either, because I am studying whether a certain mechanism or stimulus, not a latent construct, causes certain response (SR-level hypotheses). Within my SOR-model, some hypotheses relate to whether certain mechanisms successfully prime or induce specific cognitive processes. Therefore, conducting manipulation checks a priori would be absurd, because it would foreclose the hypotheses tests. Thus, while in some studies

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[36] Also, when studying the causal effect of a latent construct, a researcher should make sure that the manipulation only alters the respective latent construct and not another confounding variable, which might constitute an alternative cause of the observed effect on the independent variable (Perdue and Summers 1986). This can be addressed a priori through confound checks. Confound checks are rarely reported in the privacy literature and—like manipulation checks—not relevant to my research questions and experimental design.

conducting manipulations checks constitutes a prerequisite for further statistical analyses, it is not indicated in this research because testing the effectiveness test of the proposed treatments is an integral part of this research.

6.1.1.2 Validity of Results

The goal of empirical research in marketing is to obtain a high level of validity, which consists of three major categories: (1) Internal and external validity, (2) statistical conclusion validity, and (3) construct validity (Calder, Phillips and Tybout 1982; Klink and Smith 2001; Malhotra 2007). Therefore, I designed, conducted, and evaluated my empirical research so as to obtain a high level of validity across all dimensions.

Internal and external validity. The major goal of causal experimental research is to "draw valid conclusions about the effects of independent variables on the study group, and… make valid generalizations to a larger population of interest" (Malhotra 2007, p. 225). The former goal refers to internal validity, the latter to external validity.

Internal validity requires that the manipulation of the independent variables actually caused the observed effects on the dependent variables, thereby ruling out that the observed effects could have been confounded by extraneous variables (Malhotra 2007). It constitutes a basic prerequisite for drawing conclusions about treatment effects (Malhotra 2007). Ensuring a high level of internal validity in consumer research is difficult in real world settings because it would often require combining real behavioral data with survey data that capture constructs related to consumers' cognitive processes, attitudes, or personal characteristics (Lynch Jr. 1982). Therefore, artificial laboratory settings have become popular in consumer behavior research as they allow for controlling of a high number of extraneous factors (Malhotra 2007).

In order to ensure a high level of internal validity, I chose to conduct study 1 in a laboratory setting, and captured potentially confounding constructs through a subsequent survey (see section 6.1.2 for a detailed description). Furthermore, in

both studies, respondents were randomly assigned to treatment groups. Randomization fulfills the important function that extraneous factors, such as characteristics of the participants are likely to be represented equally over the treatment levels, so that they do not bias the outcome and permit an unbiased computation of error effects, i.e., effects not attributable to the manipulation (Kirk 2009).

External validity refers to whether the causal relationship observed in an experiment can be generalized beyond the experimental setting (Lynch Jr. 1982). Thus, external validity refers to whether the cause-effect relationship may also exist in different populations, times, settings, or measures (Calder, Phillips and Tybout 1982). External validity is threatened if experimental conditions do not realistically consider the interactions of other relevant variables in the real world (Malhotra 2007). To ensure the external validity of my research, I chose to conduct study 2 in a real world setting, namely on two different websites, and I slightly modified the measures of the dependent and independent variables (see section 6.1.3 for a detailed description). Validating laboratory findings in a real world setting is particularly important in a privacy context, because expressed privacy protectionist attitudes or behavioral intentions often deviate from actual behavior (Metzger 2006; see also section 3.2.2).

Statistical conclusion validity. Statistical conclusion validity is central to most empirical research, and refers to whether drawing conclusions on the covariation between variables based on a set of data is justified (Calder, Phillips and Tybout 1982). Typically, researchers employ methods of inferential statistics to assess the statistical significance of certain observations, i.e., to assess the likelihood that observations have not occurred by chance but are due to a certain cause or pattern (Malhotra 2007).

However, one major threat to conclusion validity within behavioral research is *common method variance* (Bagozzi and Yi 1991), also referred to as *common method biases* (Conway and Lance 2010). Common method variance is "variance that is attributable to the measurement method rather than to the constructs it represents" (Podsakoff et al. 2003, p. 879). It is typically considered problematic

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in research employing self-report measures, such as surveys (Conway and Lance 2010). Potential sources of common method biases (CMB) can be classified as method effects produced by a common source or rater, and method effects produced by item characteristics (Podsakoff et al. 2003). Within common source or rater effects, a major source of biases in survey results consists of individuals' consistency motif, because people like to maintain consistency in their cognitions and attitudes (Heider 1958). Therefore, respondents may search for similarities in the questions and try to appear consistent and rational in their responses, thereby producing relationships that do not reflect real-life (Podsakoff et al. 2003). Another rater effect may be acquiescence, also referred to as "yea-saying or nay-saying" (Podsakoff et al. 2003, p. 882), meaning that individuals may have a "tendency to agree with attitude statements regardless of the content", which may heighten the correlation among items with similar characteristics (Winkler, Kanouse and Ware 1982, p. 555). Thus, common method biases can inflate the covariation between different observed variables, and create systematic measurement error (Bagozzi and Yi 1991), which may confound the results and lead to wrong conclusions (Campbell and Fiske 1959). In the context of statistical conclusion validity, common method variance can be highly problematic because it can provide alternative explanations for the observed relationships between the variables of interest. In other words, a statistically significant association might be due to common method variance instead of the hypothesized relationship (Podsakoff et al. 2003).

Overall, due to the nature of my research question and my experimental research design, the threat of common method variation to the validity of my results is limited. On an SR-level, inflated correlations between the independent and the dependent variables are unlikely, because only the dependent variables constitute self-reports while the independent variables consist of the experimental treatments.[37] Within my SOR-model, common method variance might affect the

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[37] I acknowledge that the results of the laboratory experiment—in particular with regard to the norm of reciprocity—might be inflated by social desirability bias, which is a further potential method effect produced by the same rater (Podsakoff et al. 2003). However, as long as the respective results of the laboratory experiment are also obtained in the field experiment using

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observed association between the self-reported cognitive processes and the self-reported dependent variables in the laboratory experiment. In order to reduce the threat of CMB a priori, I employed several techniques that related to the survey setup and design, as suggested by Podsakoff et al. (2003). I included different scale anchors (e.g., strongly agree / very concerned), and added written labels to the midpoints of some scales. At the beginning of the survey, I also assured respondents that their answers would be evaluated anonymously, and that it would technically be impossible to infer their identity if they did not provide their email addresses. Furthermore, I explained that there were no right or wrong answers, and that respondents should answer the questions as honestly and spontaneously as possible. Additionally, in evaluating my results (see section 6.4.5), I employed an a posteriori statistical remedy as suggested by Podsakoff et al. (2003) to make sure that common method variance did not reduce the validity of my results.

Construct Validity. Construct validity is of central concern in psychographic research.[38] It refers to whether the variables measured can be interpreted in terms of theoretical constructs (Calder, Phillips and Tybout 1982). In other words, construct validity considers whether a scale really measures the latent construct it is supposed to measure (Bühner 2006). As such, construct validity is a necessary, but not sufficient condition for external validity. To ensure construct validity in my empirical research, whenever possible, I adapted existing scales that have been proven to be valid in previous studies. Furthermore, I pretested all scales to make sure that all scales employed in my studies had satisfactory psychographic properties (see section 6.2 for a validation of all scales through local fit indices).

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real behavioral data, it can be reasonably concluded that social desirability bias does not negatively affect the validity of my results.

[38] Under the notion of validity, psychographic research also subsumes *criterion validity* (i.e., whether a construct correlates with other variables considered as representative of the construct) and *content validity* (i.e. whether the number of items in a scale is representative of the construct), in addition to the above described *construct validity* (e.g., Bühner 2006).

6.1.1.3   Priming Methods

As introduced in section 5.5.2, priming consists of increasing the accessibility of stored knowledge so as to increase the likelihood that this knowledge will be activated in response to a subsequent stimulus or task (Wyer Jr. 2008). In other words "priming effects are achieved by highlighting for participants information that otherwise would not come to mind as quickly or strongly" (Maxwell, Nye and Maxwell 1999, p. 549). Figure 10 schematically depicts a priming process.

Stimulus 1 (=Cue/code)	*Increase Knowledge Accessibility*	**Response to Stimulus 2**
Knowledge activation, e.g. through - language - stories - symbols - sensory experiences … (Scheider and Held 2006)	*Process of* **knowledge retrieval** *in response to stimulus 1 increases* **knowledge accessibility** *and thus* **prospective knowledge activation potential**.	High likelihood of activation and thus influence on individuals' - choosing of actions - performing of tasks - formation of attitudes … (Wyer Jr. 2008)

Basis of Priming Effect
- People typically base their judgments only on a small subset of their knowledge.
- The concepts and knowledge they use are the cognitions that most easily come to their minds.

(Wyer Jr. 2008)

Figure 10: The Priming Process

Experimental studies often employ priming techniques as treatments. Most commonly, experimental studies employ subliminal priming techniques (Higgins 1996). After being exposed to a stimulus, respondents typically obtain an ostensibly unrelated perception, memory, or judgment task such that they are not aware that their reaction to the second stimulus is affected by the first stimulus

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(Förster and Liberman 2007). Table 11 illustrates some subliminal priming mechanisms and the resulting effects based on selected studies. For example, in a pricing experiment, Maxwell et al. (1999) asked some, but not all, car sellers to indicate the highest and the lowest fair selling prices. In a subsequent negotiation with a buyer, fairness-primed negotiators were significantly more cooperative and satisfied with their outcome than respondents in the control group.

A major advantage of subliminal over conscious priming is that subliminal priming techniques reduce the likelihood of potentially confounding motivational effects (Higgins 1996). Similar to the consistency motive discussed in the context of common method biases, respondents who are aware of a priming task may wish conform to a specific pattern of behavior if they are aware that the priming task relates to the subsequent task (Förster and Liberman 2007). Additionally, respondents may attempt to avoid using the prime or to correct its influence on the subsequent task (Wyer Jr. 2008). This can lead to a *contrast effect*, meaning that a measure of a construct reflects the opposite of the intended implication of a prime (Förster and Liberman 2007). Several studies have suggested that contrast effects are more likely if respondents are aware of priming (Higgins 1996). *Assimilation effects* (i.e., constructs reflecting the intended implications of a prime) are more likely when people are not aware of the priming event when making their judgments of a stimulus (for a review of those studies see Higgins 1996).

Author(s)	Study subject	Stimulus 1 (primer)	Stimulus 2 (subsequent task)	Priming effect
Fitzsimons and Bargh (2003)	Associ- ations/ mood	Respondents asked to think of good friend (or bad colleague)	Respondents asked if they would be ready to participate in second survey	Participation rate among respondents thinking of good friends is significantly higher
Darley and Gross (1983)	Ability judg- ment	Respondents receive information on a child's socioeconomic background	Respondents evaluate a child's ability based on a videotape of the child during an exam	The information of the child's background significantly influences the evaluations of her abilities
Kirmani and Zhu (2007)	Brand evalu- ation	Respondents asked to think of ideals and hopes (promotion focus) or duties and responsibilities (prevention focus)[39]	Respondents asked to evaluate an ambiguous advertisement (with regard to a potential manipulative intent)	Prevention focus primed respondents are more suspicious about ad claims and evaluate the brand less favorably than promotion focus primed respondents
Maxwell et al. (1999)	Pricing fairness	Car sellers asked to indicate highest and lowest fair price (or not)	Respondents engage in a price negotiation with buyer	Sellers having thought about fair prices are more cooperative and more satisfied with result of negotiation
Scheider and Held (2006)	Purchase decision	Respondents exposed to French music (or other music) in wine section of a supermarket	Participants make a purchase decision	Participants exposed to French music purchase significantly more French wine
Yi (1991)	Ad evalu- ation criteria	Computer ad emphasizing versatility (or ease of use) shown to respondents	Respondents evaluate another computer ad that highlights many features	Evaluation by respondents exposed to versatility ad is significantly better than other group's evaluation

Table 11: Illustration of Subliminal Priming Techniques Employed in Marketing and Social Psychology Studies

While subliminal priming for the reasons stated above is more popular than blatant priming in experimental research, there are three important reasons why I selected blatant priming within my experimental design.

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[39] In a subsequent laboratory experiment, the authors also primed suspicion by making some respondents read an article about corporate fraud before asking respondents to evaluate a brand based on an ambiguous advertisement.

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The first reason relates to the 'managerial practicability' focus of this dissertation, which consists of developing and testing tangible mechanisms which might help websites to better support their free content through targeting. In other words, an important requirement of such mechanisms is to be applicable in practice. As research has shown that consumers online are goal-oriented and avoid distractions (e.g., McCoy et al. 2007), such mechanisms need to be designed in a way that they catch consumers' attention, and that consumers actually read them. Against this background, blatant priming is more suitable, because such primers can be kept relatively short so that consumers are likely to capture the message, whereas subliminal priming typically requires the use of a longer cover story.

Second, in the context of free online content and reciprocity, blatant priming might be even more effective in the long-term. That is because it has been shown that the intensity of information processing at the time of knowledge acquisition improves knowledge accessibility (Wyer Jr. 2008). Similarly, if individuals consciously think about a concept such as reciprocity, this might increase the likelihood that they use this concept in the future. Furthermore, effects of accessibility can occur in conjunction with other effects, such as persuasion (Förster and Liberman 2007). While persuasion effects can also have a desired effect on the dependent variables in my research, using subliminal stimuli would rule out such desirable effects because subliminal stimuli cannot be used to directly persuade (Vargas 2008).

Third, employing blatant, instead of subliminal, priming procedures is indicated by normative considerations, because people abhor subconscious manipulation. Once they realize their thoughts might be subconsciously influenced by stimuli, they try to correct for this influence, potentially leading to contrast effects described above (Vargas 2008; Wyer Jr. 2008). The highly emotional public debate that occurred when the first studies on subliminal advertising practices were   published indicates that subliminal influencing techniques violate individuals' fairness perceptions (Wyer Jr. 2008). Therefore, the normative requirements of this dissertation presuppose conscious priming techniques.

6.1.2   Design of Experiment 1

The context of experiment 1 was a hypothetical opt-in decision regarding behavioral targeting on a news website. To test my hypotheses, I employed a 2 × 2 × 2 between-subjects experimental design through a scenario technique and a subsequent online survey. The experiment started with a short introduction on a website—hosted by soscisurvey, a not for profit online survey solution—that respondents had been directed to through a link they had received in an email. In that introduction, respondents were told that they would be presented with a scenario and were asked to imagine themselves in the situation described and to then respond to the subsequent questions spontaneously.

6.1.2.1   Target Variables

The target variables of study 1 were acceptance of targeting and the perceived intrusiveness of the (targeted) advertisements on the respective website. Based on the study of Malhotra, Kim, and Agarwal (2004), I operationalized acceptance of targeting as voluntary and informed consent to targeted advertising by providing an opt-in. I measured the perceived intrusiveness of the advertisements on the website, following Li, Edwards, and Lee's (2002) study. In section 6.2, along with all other measuring instruments employed in this study, I will describe these scales in detail and present their respective quality criteria.

6.1.2.2   Experimental Conditions

After respondents had read the introduction to the survey, I presented them a screenshot of a popular German news website, and asked them to imagine they were surfing on this website. Then, respondents were randomly shown one out of eight different Flash layers overlapping parts of the news website. They were told to imagine they would suddenly see the respective Flash layer. The layer contained a text message with a short greeting ("Dear visitor") and three paragraphs that represent the experimental conditions. Each of the three paragraphs consisted of either a text aiming to increase the acceptance of targeting

or a neutral text of similar length and complexity, yielding eight different experimental treatment groups (i.e., $2 \times 2 \times 2$). The paragraphs were short (fewer than 35 words), had a low reading level, and were extensively pretested. Table 12 provides an overview of the different treatment conditions within the $2 \times 2 \times 2$ experimental design. Figure 11 provides a screenshot of one out of the eight different scenarios. More screenshots documenting the experimental design can be found in appendix II.[40]
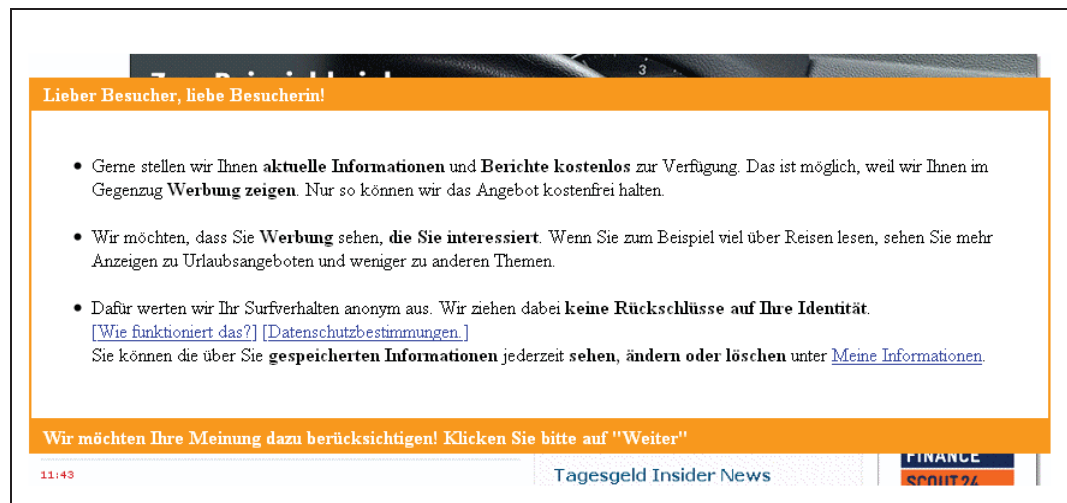
Figure 11: Screenshot of One Experimental Treatment in Experiment 1

Paragraph 1 focused on reciprocity. The phrasing aiming to make the norm of reciprocity focal read: "We are happy to offer you the **latest news** and **articles for free**. This is possible because we **show you advertisements** in exchange. Only in this way can we keep our offering free of charge." The neutral phrasing of paragraph 1 read: "We are happy that you are visiting our website. Here, we offer **the latest news** and **articles** to you. In addition, **we display advertisements to you**."

Paragraph 2 focused on relevance. The phrasing emphasizing the advantage of relevance read: "We would like you to view **advertisements you are interested**

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[40] Please note that all material employed in the experiment was in German. A German-English translation of this material can be found in appendix I.

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in. For example, if you read a lot about travel, you will see more advertisements on vacation offerings and fewer advertisements on other topics." The neutral phrasing regarding advertising relevance of paragraph 2 read: "We would like to give our advertisers the possibility to **reach their target group**. Those visitors who read a lot about travel should see more advertisements on vacation offerings and fewer advertisements on other topics."

Manipulated Variable	Phrasing Reflecting Hypothesized Mechanism	Neutral Phrasing
Appeal to Reciprocity	We are happy to offer you the **latest news** and **articles for free**. This is possible because we **show you advertisements** in exchange. Only in this way can we keep our offering free of charge	We are happy that you are visiting our website. Here, we offer **the latest news** and **articles** to you. In addition, **we display advertisements to you**.
Emphasizing Relevance	We would like you to view **advertisements you are interested in**. For example, if you read a lot about travel, you will see more advertisements on vacation offerings and fewer advertisements on other topics.	We would like to give our advertisers the possibility to **reach their target group**. Those visitors who read a lot about travel should see more advertisements on vacation offerings and fewer advertisements on other topics.
Providing a High Level of Control	In order to do so, we evaluate your surfing behavior only based on personal unidentifiable information. We do not draw any conclusions regarding your identity. [How does this work?] [Privacy Policy]. You can **see, edit or delete the information stored on you** at any time at My Information.	In order to do so, we evaluate your surfing behavior only based on personal unidentifiable information. [How does this work?] We assure you that **we do not draw any conclusions regarding your identity** [Privacy Policy].

Table 12: Description of Treatments – Manipulated Text in Flash Layer

Paragraph 3 provided surfers with different levels of control over their information. In both manipulations, surfers could access the website's privacy policy and a brief description of the technical functioning of behavioral targeting by clicking on a link. Though currently not employed in the online advertising industry, this proactive information of targeting practices constitutes a medium level of control that I considered necessary to enable an informed consent. In the high control manipulation, users were also able to access and edit the information

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stored on the websites by clicking on a link that the message contained. If they did so, a pop-up window similar to the Google or Yahoo! Ads Preferences Managers opened, which hypothetically detailed the information stored and allowed users to delete or add certain interests, or even delete the entire tracking cookie (see screenshot in Figure 12). The phrasing of the high control manipulation read: "In order to do so, we evaluate your surfing behavior based on personal unidentifiable information. We do not draw any conclusions regarding your identity. [How does this work?] [Privacy Policy]. You can **see, edit or delete the information stored on you** at any time at My Information." The phrasing of the medium control manipulation in paragraph 3 read: "In order to do so, we evaluate your surfing behavior based on personal unidentifiable information. [How does this work?] We assure you that **we do not draw any conclusions regarding your identity** [Privacy Policy].
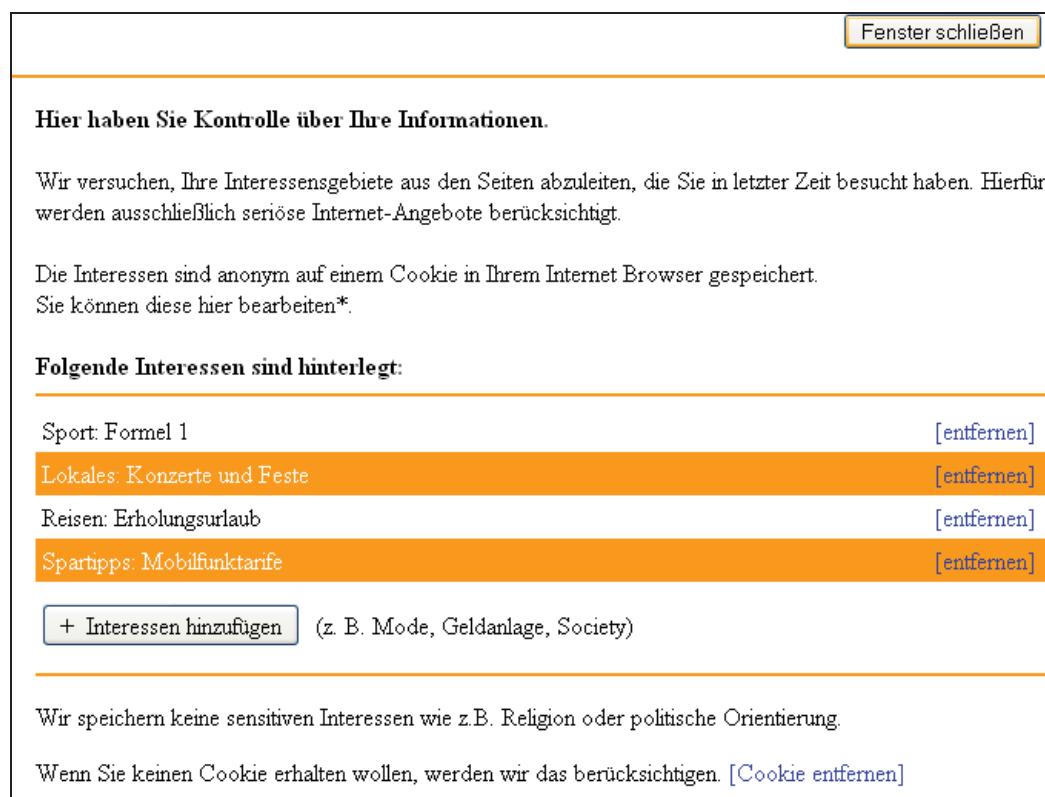
Figure 12: Screenshot of the Tool Providing Customers with a High Level of Control

The Flash layer message concluded with "We would like to respect your opinion on this. Please click on 'continue'." Respondents then accessed the survey in which they rated their responses to this scenario.

Respondents were randomly assigned to one of these eight experimental treatments or to a control group. Respondents in the control group saw the news website but no message related to the behavioral targeting of advertisements on the website. They rated the perceived intrusiveness of regular or, more specifically, of advertisements not denoted as behaviorally targeted.

6.1.2.3 Control of Extraneous Factors and Cognitive Processes

After responding to the constructs measuring the target variables *acceptance of targeting* and *perceived intrusiveness*, respondents replied to questions measuring their cognitive processes.[41] The measuring instruments of situational constructs which I predict to underlie respondents' opt-in decisions include: *distributive and procedural justice* (adapted from Wirtz and Lwin 2009), *indebtedness* as operationalization of *normative reciprocity* (based on the studies by Watkins et al. 2006 and Aikawa 1990), *relevance anticipations* (adapted from Laczniak and Muehling 1993), as well as *trusting and risk beliefs* (adapted from Malhotra, Kim and Agarwal 2004). Non-situational constructs such as personal characteristics include: *general attitude toward advertising* (Pollay and Mittal 1993), *general concern for privacy* (Dinev and Hart 2006), and the *perceived utility* of the website (based on Chen and Wells 1999). Also, respondents answered a set of *demographic questions* regarding their gender, age, educational background, occupational status, and, optionally, their income.

6.1.2.4 Data Collection and Sample

As the context of study 1 was an opt-in decision on a news website, the goal of data collection was to recruit a sample that represented the average audience of

German news websites in terms of gender, age, and education. I determined the target demographic composition of my sample by averaging the audience characteristics of the top three German online news websites, namely spiegel.de, faz.net, and focus.de, as published in the Internet Facts report by the German industry association 'Arbeitsgemeinschaft Onlineforschung' (AGOF 2009). A professional market research firm helped me in recruiting a representative sample. About a third of respondents were recruited as a convenience sample, while about two thirds were recruited based on the demographic quotas implemented by the research firm. Consequently, respondents had to answer a set of demographic questions, such as gender, age, and education to qualify for the survey.

I obtained a total of 640 completed surveys. Based on the procedures recommended by Malhotra (2007) and Tabachnick and Fiedel (2000), I carefully screened questionnaires for incomplete, inconsistent, or ambiguous responses that could distort the validity of my results. In particular, I checked for responses with little variance (i.e., respondents only checked 3s, 4s, or 7s respectively on the 7-point rating scale) and for pattern that indicated respondents did not understand or follow the instructions (i.e., on reverse coded items, responses substantially deviated from the expected response pattern, or respondents completed the survey in such a short time that made it impossible to read all instructions; or respondents quit the survey for at least 30 minutes, which is problematic as the survey aims to capture situational cognitions and attitudes related to the scenario presented). Furthermore, I checked for highly incomplete surveys (i.e., respondents who did not provide any rating on most core variables) and outliers that might bias my results because of their high impact on the result of statistical analyses. To do so, I checked for multivariate outliers by computing the Mahalanobis distance and identifying those cases deviating from the mean distance value by more than three standard deviations as suggested by Tabachnick and Fiedel (2000). As in this screening process, only ten percent of responses were identified as problematic, I removed them from my data set, leaving 576 cases. For the remaining 576

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[41] Please note that as indicated earlier, I also subsume situational attitudes and feelings under the notion 'cognitive processes' for reasons of simplicity.

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completed surveys, an analysis of missing values yielded that there were less than 5 percent of missing values per item. Against this background, I employed the mean replacement method to impute missing values.

To account for the scenarios respondents were exposed to, I added three dummy coded variables to my data set, which reflected whether a respondent had been exposed to the mechanisms of reciprocity (1 = exposed to appeal to reciprocity; 0 = exposed to neutral phrasing), relevance (1 = informed about advertising relevance; 0 = neutral phrasing), and high control (1 = respondent given high control; 0 = given medium control).

Treatment Condition of Cell[a]			Sample Size (n) per Cell	
Reciprocity	Relevance	Control	Full Sample	Reduced Sample
1	1	1	66	51
1	1	0	73	51
1	0	1	59	51
0	1	1	62	51
1	0	0	51	51
0	1	0	66	51
0	0	1	66	51
0	0	0	72	51
Control Group			61	61
Total Sample Size			576	469

[a] 1 = present / high; 0 = neutral / medium

Table 13: Cell Sizes in Experiment 1 in Full and in Reduced Final Samples

Because respondents had been randomly assigned to treatment groups, cell sizes of the final sample (n = 576) varied between 73 and 51, as can be seen in Table 13. As—under certain conditions—some analysis procedures should be employed on equal cell sizes (see section 6.3.1.2), I created a second final data set by randomly deleting responses in treatment cells with more than the minimum number of 51 responses. This lead to a reduced, or equalized, sample of 469 responses (i.e., 51 completed surveys per treatment group and 61 completed

surveys of a control group). In evaluating experiment 1, I employed this reduced sample if indicated by the assumptions of a certain testing procedure. Otherwise, I employed the full final sample of n = 576.

Table 14 shows that both final samples, the full final sample and the reduced final sample, was adequately representative of the audience of German non-tabloid online newspapers. With regard to the demographic composition of the cells, the results of a one-way analysis of variance indicated that there were no significant differences among the nine experimental conditions in terms of gender (F = .536, p = .829), age (F = 1.93, p = .054), and education (F = .782, p = .619).

Demographics	German Internet Population	Average German Online Newspaper[a]	Full Sample n = 576	Reduced Sample n = 469[b]
GENDER				
Male	54.1%	64.1%	61.4%	61.8%
Female	45.9%	35.9%	38.6%	38.2%
AGE				
14-19	11.5%	7.8%	6.1%	6.0%
20-29	19.4%	19.3%	24.0%	24.7%
30-39	19.3%	21.4%	22.2%	23.0%
40-49	23.3%	23.0%	23.8%	22.8%
50-59	15.1%	16.2%	15.6%	15.1%
60 +	11.4%	12.3%	8.4%	8.4%
EDUCATION				
High School/No Degree	70.6%	52.7%	48.5%	47.9%
University Entrance Qualification ("Abitur")	29.4%	47.3%	51.5%	52.1%

[a] Top 3 non-tabloid online newspapers (AGOF Internet Facts 2009)
[b] Equalized cell sizes: Eight cells with 51 respondents each, plus control cell with 61 respondents

Table 14: Sample Composition of Experiment 1

6.1.3   Design of Experiment 2

Study 2 measured consumers' actual provision of personal information in the context of predictive targeting. Study 2 was set up as a between-subjects field experiment, which I conducted in cooperation with a large advertising network. On two German websites, a renowned news website and a query community, I ran a survey that appeared similar to a typical predictive targeting survey. As detailed in section 2.1.2.2, predictive targeting is a form of online targeting in which publishers run online surveys on their websites to collect consumer profile information, such as surfers' gender, household size, media consumption habits, purchasing pattern, and even income. In May 2010, approximately 180,000 visitors of the two websites were invited to participate in the alleged predictive targeting survey through a small Flash layer (about 3×3 inches in size), with a teaser text appearing when they entered the website. Figure 2 on page 27 shows several screenshots of such teasers, which websites typically employ to invite surfers to participate in predictive targeting surveys. As my cooperation partner wished the names of the websites participating in the experiment to remain confidential, I am unable to present screenshots of the experiments here.

6.1.3.1   Target Variables

The dependent variable of study 2 was acceptance of targeting, which I operationalized as provision of information for targeting purposes. This operationalization of acceptance is somewhat different from study 1, where I operationalized acceptance as provision of an opt-in.

Figure 13 illustrates that the final number of profiles received is a funnel consisting of (1) the number of surfers who saw the Flash layer and clicked on it, and (2) the number of surfers who then also completed the survey. Therefore, the target variables of Study 2 are the **click rate** (CR) on the Flash layer and the **response rate** (RR), defined as the percentage of surfers who completed the full survey after clicking on the Flash layer.
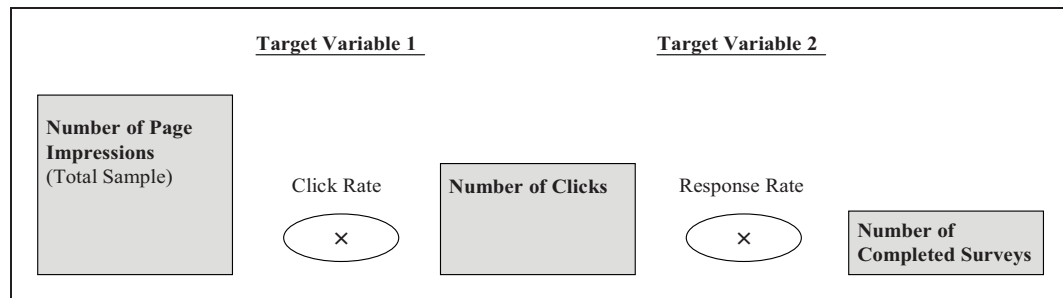
Figure 13: Illustration of the Target Variables in Experiment 2

In contrast with Study 1, I did not analyze the perceived intrusiveness of the advertisements on the website as a dependent variable in study 2. That is because I expected intrusiveness ratings to be subject to a selection bias as acceptance of targeting and provision of information should be correlated: People participating in the survey should have a higher acceptance of targeting, and thus perceive targeted advertisements as less intrusive. Thus, although respondents in experiment 2 provided intrusiveness ratings, I did not employ those ratings for hypotheses testing, because they were biased and thus not meaningful.

6.1.3.2   Experimental Conditions

Study 2 contained two stages of manipulations. Both stages served to manipulate an appeal to reciprocity, each of them in a slightly different way so as to receive further evidence of external validity. I did not include an experimental condition related to control, because predictive behavioral targeting provides surfers with a relatively high level of control as they can actively manage what information they reveal to the website.

Stage I manipulation. The manipulation consisted of two alternative teaser texts inviting surfers to the alleged predictive targeting survey. The texts were of similar length and complexity, and were extensively pretested to ensure they would be understood. In scenario 1, surfers saw a teaser text emphasizing advertising relevance: "Make advertising more individual! You will see more interesting and less irrelevant advertisements in the future. Answer a couple of questions on your interests and your media usage (Duration: 5 minutes)."

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This is a typical kind of teaser text websites employ to conduct targeting surveys (see also screenshots in Figure 2 on page 27). Therefore, such phrasing can be considered industry standard. In scenario 2, the teaser text contained an appeal to reciprocity: "Your support is required! Our service is free of charge for you—targeted advertisements help us fund it. Answer a couple of questions on your interests and your media usage (Duration: 5 minutes)."

As this manipulation occurred at the very beginning of the experiment, it could influence both target variables—click rate and response rate.

Stage II manipulation. Surfers who clicked on their Flash layer were directed to a page that explained how their information would be used for targeting purposes. This education was required to allow for informed consent to targeting. At this stage, I introduced a second set of manipulations related to appealing to reciprocity. Since respondents in scenario 1 (relevance) had not yet been exposed to a reciprocity primer, about half of them were then confronted with an argument relating to reciprocity. In addition to explaining the purpose of targeting, which I did for all respondents [treatment A], I added some sentences appealing to reciprocity [treatment B]. The neutral text [treatment A] read:

"**Thank you very much for participating in this survey!** We would like to show our visitors more **targeted advertising**. For example, those surfers interested in traveling should see more advertisements on vacation offerings and less on other topics. Therefore, we would like to ask you to answer some **questions on your interests** and your media usage. For us to be able to improve our service, please also share your **opinion**. Your **response** will not be combined with any personally identifiable information and will be treated confidentially. You can find more information in our Privacy Center."

The text including a post-hoc reciprocity primer [treatment B—italics to highlight appeal to reciprocity did not appear in original version] read:

"**Thank you very much for participating in this survey!** *On our websites, we offer you information **free of charge**. This is only possible because we show you advertisements in exchange.* We would like to show our visitors more **targeted**

advertising. For example, those surfers interested in traveling should see more advertisements on vacation offerings and less on other topics. *This way, we can better fund our free offering*. Therefore, we would like to ask you to answer some **questions on your interests** and your media usage. For us to be able to improve our service, please also share your **opinion**. Your **response** will not be combined with any personally identifiable information and will be treated confidentially. You can find more information in our Privacy Center."

I will refer to this stage 2 manipulation as a post-hoc reciprocity primer, as it occurred only after surfers had chosen to click on the manipulated teaser. As such, the stage 2 manipulation could only influence the response rate of surfers, as displayed in Figure 14.
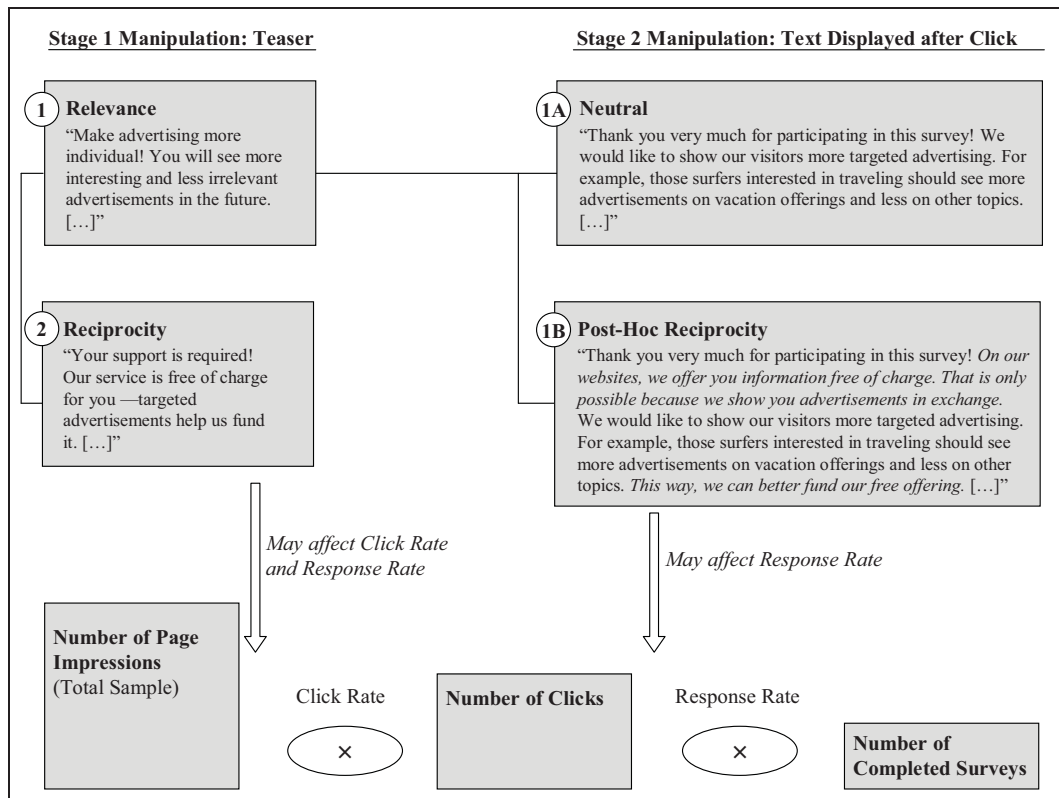
Figure 14: Design of Experiment 2

6.1.3.3 Control of Extraneous Factors and Cognitive Processes

With regard to click rate as the first target variable, I could only control extraneous factors to a limited extent, because I was not able to measure characteristics of those surfers who did not click on the teaser. Thus, the responses of individuals participating in the survey were likely to be subject to a selection bias, as surfers with certain characteristics, such as low level of general concern for privacy or a very good general attitude toward advertising, were more likely to participate in the survey.

However, in the context of the overall dissertation, this shortcoming seems negligible for several reasons. First, the main goal of study 2 was to validate the most important findings of study 1. Thus, the combination of both studies ensures internal validity of my results—in particular because I did not expect any moderating effect to affect my results. Second, due to the very large sample size of study 2, it is reasonable to assume that potential extraneous factors relating to

surfer characteristics were represented equally across groups, and thus affected results equally. Third, I conducted the field experiment on two different websites—a renowned news website and a query community. This enabled me to investigate whether factors relating to those websites might have an effect on the target variables.

Through the predictive targeting survey, I was able to measure respondents' cognitive processes relating to their motivation to participate in the survey, namely normative reciprocity measured as indebtedness, perceived distributive justice, utilitarian reciprocity, and relevance anticipation. Measuring these constructs allowed me to check whether consumers' cognitive processes differed depending on the manipulation.

6.1.3.4 Data Collection and Sample

The manipulated Flash layers were randomly displayed to a predefined number of distinct surfers (no repeat visits) entering the two websites. As can be seen in Table 11, group sizes were relatively equal within each website (news website: $n_{Scenario1A}$ = 19,566, news website: $n_{Scenario1B}$ = 19,663, $n_{Scenario2}$ = 19,721; query community: $n_{Scenario1A}$ = 40,114, $n_{Scenario1B}$ = 40,345, $n_{Scenario2}$ = 39,900).[42] If surfers did not click on the Flash layer, it automatically closed after a few seconds. As is common in predictive targeting surveys, I asked respondents for information regarding their interests in specific products, shopping habits, media usage, and demographic information (e.g., gender, age, profession, and household size), but no personally identifiable information (see section 6.5 for some exploratory analyses on consumers' responses to the alleged predictive targeting survey, and appendix I for an overview of the items included in the survey). In addition, I included reduced scales from study 1 that measured respondents' attitudes and cognitive processes.

Scenario Number	Stage 1 Manipulation (Flash Layer)	Stage II Manipulation (Text after Click)	PI: Page Impressions News Website	PI Query Community
1	Relevance		39.229	80.459
1A	Relevance	neutral[a]	19.566	40.114
1B	Relevance	Post-hoc reciprocity	19.663	40.345
2	Reciprocity	neutral[a]	19.721	39.900
Total sample size per website			**58.950**	**120.359**

[a] Text displayed to surfers after clicking on teaser, the same in scenarios 1A and 2

Table 15: Cell Sizes in Experiment 2

At the end of the survey, respondents were debriefed about the real purpose of the survey. Specifically, they were told that the information provided would be used to study consumers' attitudes towards targeted advertisements, and to make statistical evaluations of the interests of the website's audience so as to show more relevant advertisements in the long term. Respondents were also told that different surfers were shown different teasers.

6.2   Validation of Scales

My research model proposes causal links between latent constructs, such as trusting beliefs, general concern for privacy, and perceived intrusiveness. In order to measure these unobservable variables, I employed multi-item scales, which I mostly adapted from previous studies. Since the original scales were in English but the questionnaires in German, I used the back translation procedure to increase instrument equivalence (Brislin 1970). Due to a lack of existing measuring instruments, three scales were self-developed.

I employed pre-testing procedures on all measuring instruments included in my research model, based on which I performed further scale refinements. In the first pre-testing step, I employed the think-aloud technique (e.g., van Someren, Barnard and Sandberg 1994) to make sure the scales would be well understood. In

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[42] By intention, I do not report any descriptive statistics, such as the number of completed surveys or the demographic composition of the sample here. These data constitute target variables or

the second step, I performed a quantitative pre-test (n = 50) of all scales to make sure they had the desired psychometric properties. As the Internet users' information privacy scale performed poorly in that pretest[43], I performed a second quantitative pretest (n = 45) on alternative scales measuring individuals' general concern for privacy. As a result of these extensive pretesting procedures, all scales employed in the main studies fulfill the well-established scale performance criteria, as depicted in Table 16.

In the following passages, I present the final measuring instruments and report first generation and second generation quality of fit criteria based on the full sample obtained in study 1 (n = 576 for all scenarios including the control condition consisting of 61 respondents; otherwise, n = 515). First-generation criteria comprise corrected item-to-total correlation (item-total), Cronbach's alpha (C's α), and the results of an exploratory factor analysis (EFA), namely explained variance (EV) and communality (CM). I computed them using the SPSS software package. Values of second-generation criteria resulted from a confirmatory factor analysis (CFA), and comprised indicator reliability (IR), factor reliability (FR), and average variance extracted (AVE). Since the AMOS software employed for the CFA does not report FR and AVE, I calculated the respective values for each construct ξ_j based on the formulas provided by Bagozzi and Yi (1988, p. 80):

$$FR(\xi_j) = \frac{(\sum \lambda_{ij})^2 \phi_{jj}}{(\sum \lambda_{ij})^2 + \sum \theta_{ii}} \quad \text{and} \quad AVE(\xi_j) = \frac{(\sum \lambda_{ij}^2) \phi_{jj}}{(\sum \lambda_{ij}^2) + \sum \theta_{ii}} \qquad (i = 1, \dots, n),$$

with λ_{ij} denoting the estimated factor loading, Φ_{jj} the estimated variance of the latent variable ξ_j, and θ_j the estimated variance of the measurement error.

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relate to further research questions, and will be presented in the results section.

[43] The IUIPC scale did not meet required quality criteria, such as Cronbach's α ≥ .7 and corrected item-to-total correlation ≥ .5.

Criterion	Cut-off Value	Source
First-Generation Reliability Criteria		
Corrected item-to-total correlation	≥ .50	Shimp and Sharma (1987); Zaichkowsky (1985)
Cronbach's alpha (C's α)	≥ .70	Nunnally (1978)
	≈ .8	Rossiter (2002)
Explained variance (EV)	≥ 50%	Hildebrand and Homburg (1998)
Communality (CM)	≥ .40	Homburg and Giering (1996)
Second-Generation Reliability Criteria		
Indicator reliability (IR)	≥ .40	Bagozzi and Baumgartner (1994)
Factor reliability (FR)	≥ .60	Bagozzi and Yi (1988)
Average variance extracted (AVE)	≥ .50	Fornell and Larcker (1981)

Source: based on Weiber and Mühlhaus (2009)

Table 16: Evaluation Criteria for Latent Constructs (Local Fit Indices)

The *acceptance of targeting* scale contained three items measuring consumers' willingness to provide an opt-in to targeting. The items were adapted from a study by Malhotra, Kim and Agarwal (2004), who developed this scale to measure consumers' intentions to provide information to an e-commerce website. Throughout the whole questionnaire displayed to respondents, I replaced the term "the website" with the real name of the website displayed to surfers. As can be seen in Table 17, the scale had very good local fit indices, and thus met all requirements summarized in Table 16. The perceived intrusiveness of advertisements instrument contained four items from the scale by Li, Edwards and Lee (2002). The first stage of my pretest (i.e., the think-aloud procedure) revealed that it was necessary to shorten the original scale by three items (forced, invasive, and interfering) because of a lack of German adjectives that appropriately captured the sense of those items and that were different from the items already included in the scale (intrusive, disturbing, obtrusive, and distracting). Also this scale had very good psychometric properties.

Measuring Instrument	M	SD	Item-total	C's α	EV	CM	IR	FR	AVE
Acceptance (Opt-in)	**2.95**	**1.90**		**.95**	**91.3**			**.95**	**.87**
Given this hypothetical scenario [...]									
I would probably allow [the website] to evaluate my surfing behavior.	2.98	1.99	.90			.91	.86		
It is likely that I would consent to an analysis of my surfing behavior.	2.96	1.97	.91			.92	.89		
I would be willing to agree to an evaluation of my surfing behavior.	2.90	2.00	.89			.91	.86		
Intrusiveness Scale	**4.06**	**1.64**		**.95**	**87.4**			**.95**	**.84**
How do you think the ads on this website are?									
Intrusive	4.10	1.71	.90			.90	.89		
Disturbing	4.14	1.76	.92			.92	.91		
Obtrusive	3.91	1.80	.90			.89	.85		
Distracting	4.07	1.77	.81			.79	.68		

Table 17: Items and Psychometric Properties of the Acceptance and Intrusiveness Scales

The *normative reciprocity* scale was self-developed, taking into consideration existing theoretical and empirical articles. Based on Greenberg's (1980) definition of normative reciprocity as a feeling of indebtedness, I adapted two items measuring indebtedness from a study by Watkins et al. (2006). I included a third item based on Aikawa's (1990) definition of reciprocity as an obligation to reciprocate a donor. The *distributive justice* scale was also self-developed following a study by Wirtz and Lwin (2009) who measured distributive justice with regard to the output to the consumer (e.g., "I was fairly rewarded for providing information to the website"). I adapted the scale so that it captured distributive justice with regard to the output of the website (e.g., "It is fair to reward the website for providing its content to me"). The *utilitarian reciprocity* scale was also self-developed, and reflected consumers' expectation to receive

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future rewards through reciprocal behavior (see Greenberg 1980). Table 18 shows that all three scales had satisfactory psychometric properties.

Measuring Instrument	M	SD	Item-total	C's α	EV	CM	IR	FR	AVE
Normative Reciprocity (Indebtedness) Scale	**2.83**	**1.42**		**.91**	**79.3**			**.92**	**.73**
It is appropriate to reciprocate [the website's] service.	3.47	1.68	.74			.72	.61		
I should provide [the website] with a service in return.	3.09	1.65	.82			.81	.70		
I feel I owe [the website] something.	2.33	1.51	.83			.84	.82		
I feel obliged to compensate [the website] for its service.	2.42	1.55	.81			.81	.79		
Distributive Justice Scale	**3.71**	**1.64**		**.92**	**86.5**			**.92**	**.80**
It is fair to reward [the website] for providing its content to me.	3.81	1.81	.82			.85	.76		
It is okay that [the website] asks for a favor in exchange for free content.	3.72	1.73	.84			.87	.80		
Providing the website a benefit in return for its content is fair.	3.59	1.75	.86			.88	.84		
Utilitarian Reciprocity Scale	**4.15**	**1.65**		**.95**	**90.7**			**.95**	**.87**
I believe if I allow [the website] to evaluate my non-personally identifiable surfing information…									
… [the website] with its free content will exist in the long-term.	4.03	1.74	.82			.83	.69		
… I will be able to use its free content in the future, too.	4.23	1.72	.93			.94	.96		
… its free content will persist.	4.18	1.73	.93			.94	.96		

Table 18: Items and Psychometric Properties of the Normative Reciprocity, Distributive Justice, and Utilitarian Reciprocity Scales

The *relevance anticipation* scale comprised four items that I adapted from a study by Laczniak, Russel and Muehling (1993), who employed the original scale to

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measure consumers' relevance perceptions of advertisements. Table 19 shows that this scale has excellent psychometric properties, as all local fit indices are clearly above the defined cut-off values.

Measuring Instrument	M	SD	Item-total	C's α	EV	CM	IR	FR	AVE
Relevance Anticipation Scale	**3.30**	**1.53**		**.94**	**85.4**			**.94**	**.81**
If I allow [the website] to evaluate my non-personally identifiable surfing information…									
… I will see online ads that are relevant to me.	3.64	1.72	.76			.73	.59		
… I will receive useful information through online ads.	3.31	1.65	.90			.89	.86		
… online advertisements will be interesting to me.	3.21	1.62	.90			.90	.90		
… online advertisements will be worth paying attention to.	3.06	1.65	.89			.89	.90		

Table 19: Items and Psychometric Properties of the Relevance Anticipation Scale

The *procedural justice* scale included four adapted items from a measuring instrument reported by Wirtz and Lwin (2009). In their study, Wirtz and Lwin presented two different scales measuring procedural and interactive justice separately. However, my pretest revealed that respondents perceived no substantial difference between procedural and interactive justice in the context of targeted advertising, which indicated little discriminant validity. Based on these results, I combined four items of those scales to create an adapted procedural (and interactive) justice measuring instrument. The *risk* and the *trusting beliefs* scales were both adapted from Malhotra, Kim and Agarwal (2004). While the original measuring instrument captured respondents' situational trusting and risk beliefs towards online firms in general, I specified those scales so as to measure respondents' attitudes toward the respective website (i.e., I included the name of the website in the items). Table 20 shows that all scales had good or at least

satisfactory psychometric properties. The indicator reliability of item one of the procedural justice scale of .4 is clearly lower than the respective values of the other scales, but still meets the cut-off value of .4.

Respondents' *general concern for privacy* was measured through the validated scale reported by Dinev and Hart (2006), which comprised four items. The *general attitude toward advertising* scale was developed and validated in a study by Pollay and Mittal (1993). Like the general concern for privacy scale, the general attitude toward advertising scale is not context-dependent and thus did not need to be adapted. Finally, I measured the construct of *perceived utility of the website* through four items developed by Chen and Wells (1999), which I adapted to the context of targeted advertising. Table 21 shows that all three scales clearly met the required quality criteria, and could thus be considered reliable and valid.

Measuring Instrument	M	SD	Item-total	C's α	EV	CM	IR	FR	AVE
Procedural Justice Scale	**4.95**	**1.27**		**.88**	**74.5**			**.89**	**.67**
The way [the website] provides information explaining its information-handling procedures is fair.	5.31	1.56	.61			.58	.40		
[The website] is honest to its visitors.	4.86	1.41	.76			.76	.65		
The way I can influence how [the website] handles my information is fair.	4.86	1.51	.80			.81	.79		
With regard to its advertising and privacy practices, [the website] employs fair procedures.	4.79	1.45	.82			.83	.84		
Risk Beliefs Scale	**4.76**	**1.55**		**.93**	**88.3**			**.93**	**.82**
It is risky to give the information to [the website].	4.72	1.60	.85			.87	.79		
By providing the information to [this website], I could potentially incur disadvantages.	4.83	1.65	.87			.89	.84		
There would be too much uncertainty associated with giving the information to [the website].	4.74	1.68	.87			.89	.84		
Trusting Beliefs Scale	**3.84**	**1.43**		**.91**	**85.4**			**.92**	**.80**
[The website] is honest with customers when it comes to using their information.	4.31	1.55	.73			.75	.56		
I can trust [the website] in dealing with my information.	3.58	1.57	.89			.92	.94		
[The website] is reliable regarding the protection of information.	3.63	1.54	.86			.89	.89		

Table 20: Items and Psychometric Properties of the Procedural Justice, Risk, and Trusting Beliefs Scales

Measuring Instrument	M	SD	Item-total	C's α	EV	CM	IR	FR	AVE
General Concern for Privacy Scale	**5.22**	**1.35**		**.91**	**78.9**			**.91**	**.72**
In general, I am concerned about my privacy when using the Internet.	5.04	1.55	.78			.78	.70		
I am concerned that information I submit on the Internet could be misused.	5.39	1.43	.83			.83	.80		
I am concerned that a person can find private information about me on the Internet.	5.12	1.56	.77			.76	.65		
I am concerned about submitting information on the Internet, because it could be used in a way that I cannot foresee.	5.33	1.50	.80			.79	.74		
General Attitude to Advertising Scale	**4.08**	**1.52**		**.94**	**89.6**			**.94**	**.85**
Overall, I consider advertising a good thing.	4.38	1.52	.86			.88	.79		
My general opinion of advertising is favorable.	4.11	1.62	.93			.94	.96		
Overall, I like advertising.	3.76	1.67	.85			.87	.80		
Utility of Website Scale	**4.21**	**1.49**		**.94**	**83.9**			**.94**	**.79**
The content of [this website] is useful to me.	4.41	1.61	.80			.79	.70		
I feel comfortable in surfing [this website].	4.18	1.60	.86			.86	.81		
I am satisfied with the content of [this website].	4.44	1.53	.88			.87	.85		
I would like to visit [this website] frequently.	3.83	1.76	.85			.84	.80		

Table 21: Items and Psychometric Properties of the General Concern for Privacy, Attitude to Advertising, and Utility of Website Scales

6.3   SR-Level Hypotheses Testing

In testing the hypotheses developed in chapter 5, I followed a two-stage approach. In the first stage that I present in this section, I tested an SR-model including all three suggested mechanisms, as depicted in Figure 15. As such, I tested whether the mechanisms I suggested affect the target variables 'acceptance of targeting' and 'perceived intrusiveness of targeted advertisements'. This first stage analysis is of particularly high managerial interest, because it reveals whether the mechanisms have the desired effect of the target variables. In other words, in first step, I tested whether my mechanisms are managerially operational based on the results of the laboratory experiment and the field experiment. In the second stage of the analyses, which I present in section 6.4, I tested a full SOR-model that also takes into account the mediating effects of consumers' cognitive processes and attitudes to the target variables.
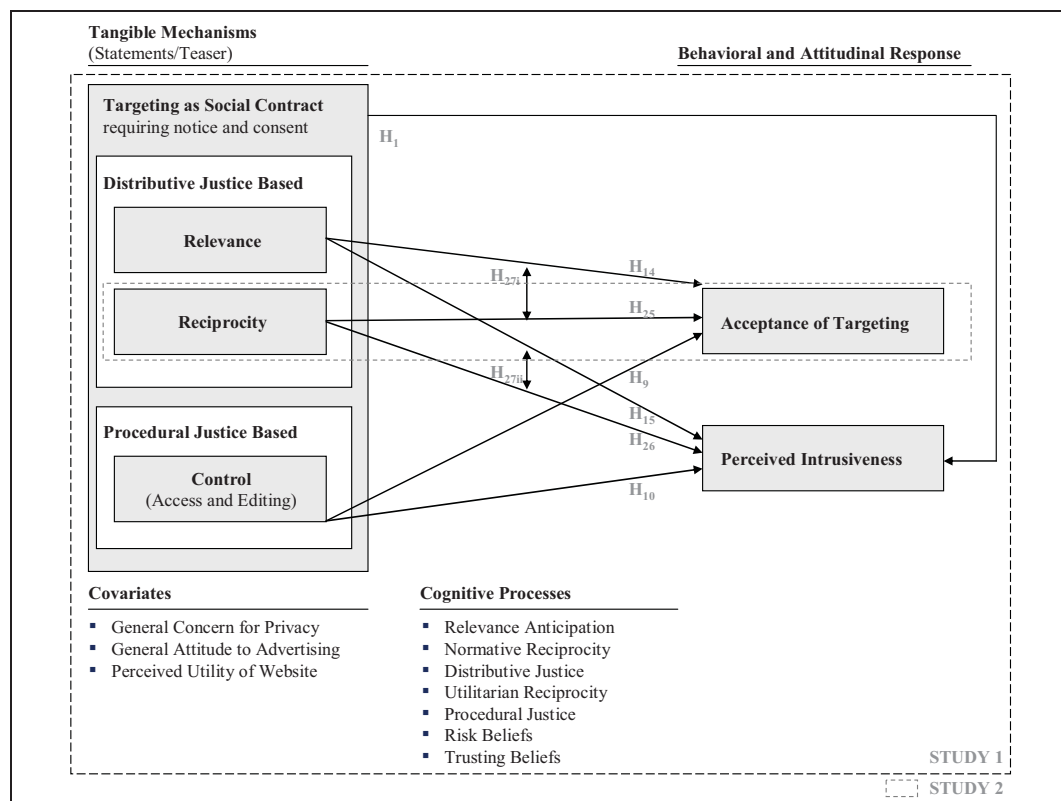
Figure 15: SR-Model Tested through Experiments 1 and 2

6.3.1 Results of Experiment 1

Evidence of concomitant variation. Preliminary comparisons of the mean values of acceptance of targeting and perceived intrusiveness across the eight treatment cells (2 × 2 × 2) suggested that some manipulations had an effect on the target variables. Table 22 displays, ceteris paribus, the mean values of all scenarios in which respondents were exposed to an appeal to reciprocity to the corresponding scenario in which respondents were not exposed to an appeal to reciprocity (i.e., the conditions regarding relevance information and level of control were the same).[44] As such, Table 22 provides evidence of concomitant variation because, ceteris paribus, all cells in which respondents were exposed to the reciprocity primer had higher mean values for acceptance of targeting and lower mean values of perceived intrusiveness than cells in which respondents were not exposed to the primer.

Treatment Condition of Cell[a]			Means of Dependent Variables per Cell	
Reciprocity	Relevance	Control	Acceptance	Intrusiveness
1	1	1	3.3	3.8
0	1	1	2.6	4.5
1	1	0	3.2	4.0
0	1	0	2.5	4.4
1	0	1	3.9	3.8
0	0	1	2.9	4.1
1	0	0	3.0	4.0
0	0	0	2.5	4.5

[a] 1 = present/high; 0 = neutral/medium; n = 408

Table 22: Mean Comparison across Cells with Regard to Reciprocity

Table 23 provides the same data by contrasting, ceteris paribus, cells in which respondents were informed about advertising relevance to the respective cells in

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[44] For consistency purposes, the mean values presented in this section were calculated from the reduced sample, as this sample was also used to conduct the inferential model test in section 6.3.1.3. The respective mean values calculated on the full sample can be found in appendix III.

which they were not informed. As there appears to be no consistent variation in the mean values, Table 23 does not provide evidence of concomitant variation.

Treatment Condition of Cell[a]			Means of Dependent Variables per Cell	
Reciprocity	Relevance	Control	Acceptance	Intrusiveness
1	1	1	3.3	3.8
1	0	1	3.9	3.8
1	1	0	3.2	4.0
1	0	0	3.0	4.0
0	1	1	2.6	4.5
0	0	1	2.9	4.1
0	1	0	2.5	4.4
0	0	0	2.5	4.5

[a] 1 = present/high; 0 = neutral/medium; n = 408

Table 23: Mean Comparisons across Cells with Regard to Relevance

Table 24 displays treatment mean values by contrasting cells in which the factor 'level of control' was varied. With regard to the acceptance of targeting construct, it provides some evidence of concomitant variation as 'high control' treatment groups consistently have higher acceptance values than the corresponding 'medium control' treatment groups, with all other manipulations being equal. As there was no consistent pattern with regard to the construct of perceived intrusiveness, so was the evidence for concomitant variation.

While providing suggestive evidence, the descriptive statistics presented here do not allow inferring any systematic effect of the independent variables on the target variables. Making such inferences requires statistical testing procedures.

Treatment Condition of Cell[a]			Means of Dependent Variables per Cell	
Reciprocity	Relevance	Control	Acceptance	Intrusiveness
1	1	1	3.3	3.8
1	1	0	3.2	4.0
1	0	1	3.9	3.8
1	0	0	3.0	4.0
0	1	1	2.6	4.5
0	1	0	2.5	4.4
0	0	1	2.9	4.1
0	0	0	2.5	4.5

[a] 1 = present/high; 0 = neutral/medium; n = 408

Table 24: Mean Comparisons across Cells with Regard to Control

6.3.1.1 Selection of MANCOVA Procedures

Analysis of variance (ANOVA) procedures constitute the most common statistical method of inferential experimental evaluation (Eschweiler, Evanschitzky and Woisetschläger 2007). ANOVA procedures allow evaluating the effect of one or more categorical factors on one or more metric dependent variables (Rudolf and Müller 2004). They are appropriate for experimental evaluations because the different treatment groups can be represented by a categorical factor (Eschweiler, Evanschitzky and Woisetschläger 2007). Also, ANOVA procedures allow assessing interactions between different categorical variables (Rudolf and Müller 2004). When the dependent variables affected by the independent variables are correlated, multivariate analysis of variance (MANOVA) procedures, which analyze the differences in the vector of the means of the dependent variables across the groups, are appropriate (Malhotra 2007). Analyzing group differences simultaneously in cases of correlated independent variables is important to control the type I error, i.e., rejecting a true null hypothesis (Eschweiler, Evanschitzky and Woisetschläger 2007). In addition to assessing the effect of categorical independent variables, it is also possible to assess the effect of metric variables on the dependent variables (Malhotra 2007). This procedure is called (multivariate) analysis of covariance (M)ANCOVA (Malhotra 2007). In the context of experimental analysis, employing (M)ANCOVA procedures is highly appropriate

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because it enables partialling out the effect of extraneous variables. This way, differences among respondents relating to those covariates statistically no longer affect the dependent variables, which ensures a high level of internal validity (Eschweiler, Evanschitzky and Woisetschläger 2007; Malhotra 2007).

As the independent variables 'acceptance of targeting' and the 'perceived intrusiveness of targeted advertisements' were correlated ($r = -.22$, $p < .001$), I employed MANCOVA procedures to test if my suggested mechanisms had an effect on the two target variables.

6.3.1.2 Test of Requirements and Cell Equalization

The MANCOVA procedure assumes that dependent variables have a multivariate normal distribution in each group, that those distributions are equal in each group (e.g., Bagozzi and Yi 1989; Rudolf and Müller 2004), and that there is homogeneity of variances across all groups (e.g., Rudolf and Müller 2004; Tabachnick and Fidell 2000). A violation of those assumptions can be healed if sample sizes are equal across groups (e.g., Dretzke, Levin and Serlin 1982; Levy 1980; Perreault Jr. and Darden 1975). In fact, Pillai's V as a test statistic for assessing multivariate group difference is fairly robust to violations of the MANCOVA assumptions if sample sizes are equal across groups (Olson 1976). Thus, if cell sizes are equal, researchers do not have to turn to non-parametric tests but may still employ (M)ANCOVA procedures if the assumption of multivariate normality and variance homogeneity are not fulfilled (Eschweiler, Evanschitzky and Woisetschläger 2007; Rudolf and Müller 2004).

In my original final sample ($n = 576$), a Kolmogorov-Smirnov test of the dependent variables in each cell showed that the assumption of multivariate normal distribution was not fulfilled ($p < .01$ for acceptance of targeting in all cells and for intrusiveness in three out of eight cells). Furthermore, Levene's test (acceptance of targeting: $F = 2.014$, $p = .052$; intrusiveness: $F = 1.941$, $p = .061$) and Box's M test ($F = 1.233$, $p = .21$) showed that evidence of variance

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homogeneity was weak. Therefore, I employed the reduced sample with equal cell sizes of 51 to test my SR-model through MANCOVA procedures.

6.3.1.3   Results of MANCOVA Hypotheses Tests

Impact of targeting knowledge on perceived intrusiveness. To test H_1 regarding consumers' perceptions of targeted vs. non-targeted advertisements, I compared the perceived intrusiveness of advertisements shown to respondents in the control group with the perceived intrusiveness of denoted behaviorally targeted advertisements displayed to surfers in scenarios 1 to 8. A T-test revealed that respondents in experiment 1 perceived advertisements denoted as behaviorally targeted as significantly more intrusive than regular advertisements ($T = 2.328$, $p = .020 < .05$); regular advertisements, i.e. advertisements displayed to the control group received an average intrusiveness rating of 3.602, and targeted advertisements received 4.121. Therefore, H_1 was supported.

Impact of mechanisms on acceptance and perceived intrusiveness of ads. I tested the remaining SR-level hypotheses through a subsequent multivariate main analysis. Specifically, I investigated whether the mechanisms I developed affected the acceptance of targeting and the perceived intrusiveness of targeted advertisements. In my MANCOVA model, I included the experimental manipulations reciprocity (present/not present), relevance (present/not present), and the level of control over personal information (high/medium) as independent variables. To control factors that cannot be directly influenced by a website, I included the following covariates: general attitude toward advertising, privacy sensitivity, and perceived utility of the website. Because there were no interactions between the independent variables (see Table 25), my main analyses included overall multivariate results and effect sizes, univariate effects and eta-squared values (η^2), and post-hoc analyses through the Brown-Forsythe test.

Effect	F-Statistic	Partial η^2
Intercept	**94.399 *****	.323
Reciprocity	**9.919 *****	.048
Relevance	.077 n.s.	.000
Control	**3.268 ***	.016
Reciprocity × relevance	.424 n.s.	.002
Reciprocity × control	.350 n.s.	.002
Relevance × control	1.583 n.s.	.008
Reciprocity × relevance × control	.962 n.s.	.005
Perceived utility	**25.047 *****	.112
General concern for privacy	**14.120 *****	.067
General ad attitude	**14.654 *****	.069

Hypotheses degrees of freedom (d.f.) = 2.0; error d.f. = 396.000;
significance: * $p < .05$; ** $p < .01$; *** $p < .001$; n.s. = not significant

Table 25: Multivariate Test Results (Omnibus Test)

Table 25 shows that the effect of providing respondents with a high level of control was significant at the 5 percent level after adjusting for the effect of privacy concerns, utility of website, and general attitude toward advertising (F = 3.268, p = .039). The eta-square (η^2)-value of .016 indicated that 1.6 percent of total variation could be explained by the factor control. According to Cohen (1988), η^2 in behavioral experiments is typically low, which is why he classified an η^2-value of 1 percent as a weak effect, a value of 5.9 percent as an effect of medium size and 13.8 percent as strong. Consequently, the overall effect of the control manipulation is rather weak. Because control was a significant factor, I conducted further analyses to examine its effects on the dependent variables. As displayed in Table 26, univariate analyses indicated that the level of control had a significant (F = 5.515, p = .019), but comparably weak (η^2 = .014), effect on the acceptance of targeting, which is reflected in the respective mean differences (Acceptance$_{\text{High-Control}}$ = 3.157 vs. Acceptance$_{\text{Moderate-Control}}$ = 2.764; Brown-Forsythe: F = 4.386, p = .037) displayed in Table 27. Therefore, H$_9$ was supported: Providing customers with a high level of control by allowing to view and edit the information stored about them increases the acceptance of targeting.

However, the amount of control had no significant effect on the perceived intrusiveness of the advertisements (F = 1.164, p = .281, η^2 = .003), so I did not find any significant mean differences (Intrusiveness$_{\text{High-Control}}$ = 4.038 vs. Intrusiveness$_{\text{Moderate-Control}}$ = 4.203; Brown-Forsythe: F = 1.070, p = .302). Thus, H_{10} was not supported: Providing customers with a high level of control only insignificantly reduces the perceived intrusiveness of targeted advertisements.

The main effects of informing consumers about advertising relevance were not significant after controlling the covariates (F = .077, p = .926, η^2 = .000). Accordingly, there were neither substantial nor significant mean differences regarding the acceptance of targeting (Acceptance$_{\text{Relevance}}$ = 2.884 vs. Acceptance$_{\text{No-Relevance}}$ = 3.036; Brown-Forsythe: F = .649, p = .421) nor regarding the perceived intrusiveness of the advertisements on the website (Intrusiveness$_{\text{Relevance}}$ = 4.141 vs. Intrusiveness$_{\text{No-Relevance}}$ = 4.101; F = .064, p = .801) between respondents who had been told that targeting would make their advertisements more interesting to them and those who were told that advertisers would like to reach their target group more efficiently. Therefore, H_{14} and H_{15} were not supported: Informing customers that targeting makes advertising more interesting to them only has an insignificant effect on the acceptance of targeting and the perceived intrusiveness of targeted advertisements.

Effects	Source	F-Statistic	Partial η2
DEPENDENT VARIABLE: ACCEPTANCE			
	Model	**10.285 *****	.206
	Intercept	**20.587 *****	.049
Main Effects			
	Reciprocity	**12.068 ****	.030
	Relevance	.089 n.s.	.000
	Control	**5.515 ***	.014
Interaction Effects			
	Reciprocity × relevance	.007 n.s.	.000
	Reciprocity × control	.664 n.s.	.002
	Relevance × control	2.792 n.s.	.007
	Reciprocity × relevance × control	.895 n.s.	.002
Effects of Control Variables			
	Utility	**18.574 *****	.045
	Privacy concerns	**14.393 *****	.035
	General ad attitude	**17.253 *****	.042
DEPENDENT VARIABLE: INTRUSIVENESS			
	Model	**10.637 *****	.211
	Intercept	**165.536 *****	.294
Main Effects			
	Reciprocity	**8.327 ****	.021
	Relevance	.061 n.s.	.000
	Control	1.164 n.s.	.003
Interaction Effects			
	Reciprocity × relevance	.846 n.s.	.002
	Reciprocity × control	.031 n.s.	.000
	Relevance × control	.436 n.s.	.001
	Reciprocity × relevance × control	.985 n.s.	.002
Effects of Control Variables			
	Utility	**32.894 *****	.077
	Privacy concerns	**14.653 *****	.036
	General ad attitude	**12.883 *****	.031

Significance: * $p < .05$; ** $p < .01$; *** $p < .001$; n.s. = not significant

Table 26: Between Subjects Effects Test (Follow-up ANCOVA)

| Dependent Variable | Source/ Manipulation | Mean per Expression of Independent Variables | | Brown-Forsythe Statistic |
		Present/High	Not Present/ Medium	
ACCEPTANCE				
	Reciprocity	3.3020	2.6186	**13.548 *****
	Relevance	2.8843	3.0363	.649 n.s.
	Control	3.1569	2.7637	**4.386 ***
INTRUSIVENESS				
	Reciprocity	3.8701	4.3713	**10.035 ****
	Relevance	4.1409	4.1005	.064 n.s.
	Control	4.0380	4.2034	1.070 n.s.

Significance: * $p < .05$; ** $p < .01$; *** $p < .001$; n.s. = not significant

Table 27: Post-hoc Tests of Independent Variables

Regarding the mechanism of appealing to reciprocity, the omnibus test revealed significant effects after adjusting for the effect of the control variables ($F = 9.919$, $p < .0001$). The η^2 of .048 revealed a medium-sized effect of appealing to reciprocity. Follow-up analyses of covariance (Table 26) indicated that reciprocity had a substantial ($\eta^2 = .030$), and significant ($F = 12.068$, $p = .001$) effect on the acceptance of targeting operationalized as a provision of an opt-in and on the perceived intrusiveness of the advertisements shown on the website ($F = 8.327$, $p = .004$, $\eta^2 = .021$). As Table 27 shows, a post-hoc comparison of mean differences between groups suggested that respondents exposed to the reciprocity mechanism had a higher acceptance of targeting ($Acceptance_{Reciprocity} = 3.302$ vs. $Acceptance_{No-Reciprocity} = 2.619$; $F = 13.548$, $p = .000$), and respondents perceived the advertisements on the website to be significantly less intrusive ($Intrusiveness_{Reciprocity} = 3.870$ vs. $Intrusiveness_{No-Reciprocity} = 4.371$; $F = 10.035$, $p = .002$) than those not exposed to the reciprocity mechanism. Therefore, H_{25} and H_{26} were supported: An appeal to reciprocity increases the acceptance and reduces the perceived intrusiveness of targeted advertisements on a website. Because there was no significant interaction between the reciprocity and relevance mechanisms ($F = .424$, $p = .655$, $\eta^2 = .002$), H_{27} was not supported: There is no significant interaction of informing customers about advertising relevance and appealing to

reciprocity with regard to acceptance of targeting and the perceived intrusiveness of targeted advertisements.

To determine the effect of the three covariates on the two dependent variables, I conducted hierarchical multiple regressions for each dependent variable with privacy concerns, utility of website, and general attitude toward advertising acting as multiple predictors. For acceptance of targeting, the covariates privacy concerns (β = -.170, t = -3.734, p = .000), utility of website (β = .227, t = 4.616, p = .000), and general attitude toward advertising (β = .202, t = 4,120, p = .000) provided a significant level of adjustment. The same held true for perceived intrusiveness with privacy concerns (β = .210, t = 4.973, p = .000), utility of website (β = -.264, t = -5.798, p = .000), and general attitude toward advertising (β = -3.449, t = 3.449, p = .001) adjusting the dependent variable.

6.3.1.4 Additional Analyses Regarding Cognitive Processes

I conducted further statistical tests to better understand the impact of the suggested mechanisms on consumers' cognitive processes. Theses analyses provide some first evidence of the underlying reasons for the effectiveness or the ineffectiveness of the suggested mechanisms. (A more systematic analysis of a full SOR-model will be presented in section 6.4.)

Applying a T-test, I found that respondents with a high level of control over their personal information believed they were treated more fairly by the website (Procedural Justice$_{\text{High-Control}}$ = 5.156 vs. Procedural Justice$_{\text{Medium-Control}}$ = 4.820; T = -2.720, p = .007) than respondents offered a medium level of control as predicted by H$_2$. Respondents informed about the claimed benefits of targeting regarding advertising relevance did not anticipate seeing more interesting advertisements (Relevance Anticipation$_{\text{Relevance}}$ = 3.294 vs. Relevance Anticipation$_{\text{No-Relevance}}$ = 3.324; T = .194, p = .846) than respondents not exposed to the respective mechanism contrary to the prediction of H$_{11}$. Finally, appealing to reciprocity significantly increased respondents' desire to act according to the principle of distributive justice (Distributive Justice$_{\text{Reciprocity}}$ = 3.954 vs.

Distributive Justice$_{\text{No-Reciprocity}}$ = 3.521; T = -2.703, p = .007) as predicted by H$_{19}$, but neither a feeling of indebtedness (Indebtedness$_{\text{Reciprocity}}$ = 2.926 vs. Indebtedness$_{\text{No-Reciprocity}}$ = 2.754; T = -1.226, p = .221) nor their expectation to receive free content in the future through reciprocal behavior (Utilitarian Reciprocity$_{\text{Reciprocity}}$ = 4.304 vs. Utilitarian Reciprocity$_{\text{No-Reciprocity}}$ = 4.079; T = -1.399, p = .163) in contrast to the predictions of H$_{16}$ and H$_{22}$.

6.3.2   Results of Experiment 2

The core result of experiment 1 is that the norm of reciprocity can guide people's behavioral intentions in the context of information privacy and targeted advertising. If a website offering free content makes that norm salient by appealing to reciprocity, consumers are significantly more willing to accept targeting. Experiment 2 served to validate this finding through real behavioral data.

Evidence of concomitant variation. The target variables of study 2, namely click rate and response rate (see section 6.1.3.1), can be calculated from dichotomous variables that measure whether a consumer clicked or did not click on the Flash layer, and whether a respondent who had clicked on the Flash layer then completed or did not complete the survey. Those two variables will be analyzed in detail in section 6.3.2.3. Table 28 constitutes a contingency table that provides some descriptive statistics on the frequency of clicks vs. no clicks depending on what teaser respondents had been exposed to. It shows that in the reciprocity condition, respondents clicked more frequently on the teaser (i.e., 414 out of 19,721 on the news websites, and 332 out of 39,900 in the query community) than in the relevance condition (i.e., 334 out of 39,229, and 353 out of 80,495 respectively). This provides evidence of concomitant variation.

Scenario:	News Website		Query Community	
	Relevance Teaser	Reciprocity Teaser	Relevance Teaser	Reciprocity Teaser
Response	(1A + 1B)	(2)	(1A + 1B)	(2)
Click	334	414	353	332
No Click	38,895	19,307	80,106	39,568
Total	39,229	19,721	80,459	39,900

Table 28: Frequencies of Clicks vs. No Clicks per Scenario

Table 29 constitutes the corresponding contingency table with regard to how frequently respondents completed the survey after clicking on the respective teaser displayed to them.[45] As such, it provides evidence of concomitant variation because respondents in the reciprocity teaser condition completed the survey more often (i.e., 164 out of 424 on the news website, and 55 out of 332 in the query community) than respondents who had been exposed to the relevance teaser (i.e., 67 out of 334, and 32 out of 353 respectively).

Scenario:	News Website		Query Community	
	Relevance Teaser	Reciprocity Teaser	Relevance Teaser	Reciprocity Teaser
Response	(1A + 1B)	(2)	(1A + 1B)	(2)
Complete	67	164	32	55
No complete	267	250	321	277
Total	334	414	353	332

Table 29: Frequencies of Survey Completes vs. No Completes per Scenario

6.3.2.1 Selection of Chi-square Testing Procedures

The statistical procedure that is most commonly used to assess the significance of an association between categorical variables is the Pearson Chi-square test (χ^2-test). The χ^2-test compares the expected frequencies of a certain event (e.g., a

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[45] The contingency table displays the combined frequencies for the relevance sub-scenarios (1A and 1 B). The frequencies of each sub-scenario can be found in appendix IV.

click), assuming that the category of the independent variable has no effect on the dependent variables, to the actual frequencies observed in each category. If the observed frequencies strongly deviate from the expected frequencies, the null hypothesis that there is no association between the variables (i.e., that the likelihood of the occurrence of a certain event is equal across groups) is rejected. The χ^2-statistic indicates the significance of the observed association of the categorical variables (Field 2005; Malhotra 2007).

Because the experimental treatments (relevance teaser vs. reciprocity teaser and post-hoc reciprocity appeal vs. no post-hoc appeal) and the dependent variables (click vs. no click and completion of survey vs. no completion of survey) are categorical variables, an χ^2-test is appropriate to test whether there is a significant association between the treatment and whether or not surfers clicked on a Flash layer and completed the survey.

6.3.2.2   Test of Requirements

Within χ^2-tests of association, as a general rule, the expected frequencies of the event of interest should be equal to or greater than five in each cell. If this is the case, the test statistic can be assumed to follow a χ^2-distribution (Field 2005; Malhotra 2007). In my sample, this requirement was fulfilled for both target variables—the number of clicks and the number of completes.

6.3.2.3   Results of Chi-square Hypotheses Tests

Stage I manipulation: click rate. On both websites, click rates in scenario 2 (reciprocity) were substantially higher than those in scenario 1 (relevance). On the news website, the average click rate moved from .85 percent using the traditional relevance teaser to 2.1 percent when the reciprocity mechanism was employed. In the query community, the click rate increased from an average of .44 percent to .83 percent. Table 30 presents the results of the χ^2-test regarding the differences in the click rates. The test yielded a significant association between the text on the Flash layer and whether a surfer clicked on the Flash layer (news website: $\chi^2(1) =$

163.126, p = .000; query community: $\chi^2(1)$ = 72.927, p = .000). The respective odds ratio showed that surfers exposed to the reciprocity mechanism were 2.5 (news website) and 1.9 (query community) times more likely to participate in the predictive targeting survey than those who had seen the traditional teaser. Thus, these findings provide strong empirical evidence that an appeal to reciprocity positively influences acceptance of targeting, in support of H$_{25}$.

Pearson Chi-square Test of Click Rates regarding Stage I Treatments[a]		News Website	Query Community
1	Relevance (average of 1A and 1B)	.85%	.44%
1A	Relevance + Stage II Neutral	.88%	.46%
1B	Relevance + Stage II Post-hoc Reciprocity	.82%	.42%
2	Reciprocity	2.10%	.83%
$\chi^2(1)$		163,126 ***	72,927 ***

[a] Reciprocity (2) vs. Relevance (1A and 1B) scenarios; significance: *** p < .001

Table 30: Chi-square Difference Tests of Click Rates Regarding Stage I Manipulation

Table 30 also provides evidence of split-half validity, because scenario 1 (relevance) was split into two sub-scenarios 1A and 1B after respondents had clicked on the relevance teaser (see section 6.1.2). For both websites, split-half validity regarding scenario 1 was given, since there was no significant difference between the click rates in scenarios 1A and 1B according to the Pearson χ^2-test (news website: CR$_{1A}$ = .88 percent, CR$_{1B}$ = .82%, CR$_{average1A\&B}$ = .85%, $\chi^2(1)$ = .354, p = .552; query community: CR$_{1A}$ = .46%, CR$_{1B}$ = .42%, CR$_{average1A\&B}$ = .44%, $\chi^2(1)$ = .730, p = .393).

Stage I manipulation: response rate. For a higher click rate to result in more profiles, it is important that this effect is not offset by a potential decline in response rates. Some people who clicked on the Flash layer might not at first have fully understood the aim of the survey, and thus left the survey after being told that its goal was targeting advertisements. Therefore, I compared the response rates of the respective scenarios.

As Table 31 shows, surfers who were exposed to the reciprocity teaser instead of the relevance teaser completed the survey significantly more often after clicking on the Flash layer (news website: $\chi^2(1) = 21.393$, p = .000; query community: $\chi^2(1) = 16.489$, p = .000), which supports H_{25}: An appeal to reciprocity increases the acceptance of targeting. On the news website, the response rate rose from 19.8 percent to 39.8 percent. The respective odds ratio shows that surfers who clicked on a Flash layer containing a reciprocity primer were 2.7 times more likely to complete the survey than those who clicked on a traditionally worded Flash layer. For the query community, the response rate rose from 4.3 percent to 16.6 percent, implying an odds ratio of 4.4.

Pearson Chi-square Test of Response Rates regarding Stage I Treatments	News Website	Query Community
1A Relevance (+ Stage II Neutral)	19.8%	4.3%
2 Reciprocity	39.6%	16.6%
$\chi^2(1)$	21.393 ***	16.489 ***

Significance: *** p < .001

Table 31: Chi-square Difference Tests of Response Rate Regarding Stage I Manipulation

Stage II manipulation: response rate. To obtain further insights on the effectiveness of different ways to appeal to reciprocity, I analyzed the response rates of surfers who had clicked on a traditionally worded Flash layer with regard to whether or not they were presented with a less prominent post-hoc appeal to reciprocity afterwards. As explained earlier, half of those people who had clicked on the relevance teaser were shown a text containing a post-hoc appeal to reciprocity (scenario 1B), while for the other half, sentences that served to prime reciprocity were not included (scenario 1A).

As can be seen in Table 32, the effect of stage II manipulation was mixed. On the news website, the response rate of surfers who had clicked on the 'relevance' Flash layer but were not exposed to a post-hoc reciprocity primer was 19.8 percent, the one of the surfers exposed to a post-hoc reciprocity appeal was

slightly higher, amounting to 20.4 percent. However, the response rates were not significantly different ($\chi^2(1) = .019$, p = .891). In the query community, though, I found a statistically significant difference between the respective response rates ($\chi^2(1) = 10.375$, p = .001). Whereas only 4.3 percent of the surfers in scenario 1A completed the survey, 14.2 percent did so in scenario 1B, which might indicate that also a less prominent appeal to reciprocity increase targeting acceptance. However, due to the small number of respondents in the relevance condition (see section 6.3.2 and in appendix IV), the reliability this result is limited.

Pearson Chi-square Test of Response Rates regarding Stage II Treatments	News Website	Query Community
1A Relevance + Stage II Neutral	19.8%	4.3%
1B Relevance + Stage II Post-hoc Reciprocity	20.4%	14.2%
$\chi^2(1)$	.019 n.s.	**1.375 ****

Significance: ** p < .01; n.s. = not significant

Table 32: Chi-square Difference Tests of Response Rate Regarding Stage II Manipulation

6.3.2.4   Additional Analyses Regarding Cognitive Processes

To obtain further evidence whether the manipulations motivated respondents to participate in the survey in the way predicted, I included single items from the scales presented in 6.2 into the (alleged) predictive targeting survey. Specifically, before being debriefed on the experiment, respondents were asked about their motivation to provide the website with personal information.

As can be seen in Table 33, survey responses under different experimental treatment conditions provide further support for my hypotheses on the cognitive processes underlying consumers' acceptance of targeting. Surfers' responses on a 5-point Likert scale to the final question "Why are you participating in this survey?" revealed that their motivations for providing the website with information differed depending on the teaser text. Surfers' agreement with the statement "It is fair to reward [the website] for providing its content to me" was significantly higher among those who had received the reciprocity teaser

compared to those who had received the relevance teaser (Distributive Justice$_{Reciprocity}$ = 3.85 vs. Distributive Justice$_{Relevance}$ = 3.18; T = -2.741, p = .007), hereby providing support for H$_{19}$: Appealing to reciprocity increases customers' perceptions of distributive justice. The same held true for the statement "I feel I owe the website something" (Indebtedness$_{Reciprocity}$ = 2.53 vs. Indebtedness$_{Relevance}$ = 1.97; T = -2.170, p = .031), supporting H$_{16}$: Appealing to reciprocity increases customers' feeling of indebtedness. It did not hold true for the statement "I would like to be able to use [the website's] free content in the future, too" (Utilitarian Reciprocity$_{Reciprocity}$ = 4.48 vs. Utilitarian Reciprocity$_{Relevance}$ = 4.06; T = -1.513, p = .139), i.e. contrary to H$_{22}$ appealing to reciprocity does not significantly increase customers' expectation tat targeting will allow the website to continue providing free content. Respondents' agreement with the statement "I would like to see online ads that are more relevant to me" (Relevance Anticipation$_{Relevance}$ = 2.94 vs. Relevance Anticipation$_{Reciprocity}$ = 2.79; T = .623, p = .534) was not significantly influenced by the type of teaser respondents were shown. Thus, H$_{11}$ did not receive support: Informing customers that targeting makes advertisements more relevant does not significantly increase the acceptance of targeting. Also, the statement I had included for control purposes "This survey is interesting to me" (Curiosity$_{Relevance}$ = 2.77 vs. Curiosity$_{Reciprocity}$ = 3.02; T = -.980, p = .333) was not significantly influenced by the type of teaser respondents were shown.

Construct	Scenario 1A: Relevance (n = 42) Mean	Scenario 2: Reciprocity (n = 219) Mean	Homogeneity of Variances (Levene)	T-Value[a]
Indebtedness	1.97	2.53	yes	**-2.170 ***
Distributive Justice	3.18	3.85	yes	**-2.741 ****
Utilitarian Reciprocity	4.06	4.48	no	-1.513 n.s.
Relevance Anticipation	2.94	2.79	no	.623 n.s.

[a] Accounting for variance (in)homogeneity; significance: * p < .05; ** p < .01; n.s. = not signif.

Table 33: Motivation to Provide Information per Scenario within Stage I Manipulation

As can be seen in appendix V, analyzing the respective ratings for each website individually yielded nearly the same overall significance pattern, with the only exception that in the query community sample, the effect of the type of teaser on indebtedness was not statistically significant.

Table 34 presents the same analysis by comparing respondents' motivation to participate in the survey depending on whether they had been exposed to a post-hoc reciprocity primer or not, after having been exposed to the relevance primer. However, while the difference with regard to indebtedness (Indebtedness$_{Post\text{-}hocReciprocity}$ = 2.42 vs. Indebtedness$_{RelevanceOnly}$ = 1.97; T = -1.884, p = .063), distributive justice (Distributive Justice$_{Post\text{-}hocReciprocity}$ = 3.65 vs. Indebtedness$_{RelevanceOnly}$ = 3.18; T = -1.140, p = .257), and utilitarian reciprocity (Utilitarian Reciprocity$_{Post\text{-}hocReciprocity}$ = 4.59 vs. Utilitarian Reciprocity$_{RelevanceOnly}$ = 4.06; T = -1.729, p = .090) appear substantial, they are not statistically significant at the 5 percent level. The lack of statistical significance also holds true for relevance anticipations (Relevance Anticipation$_{RelevanceOnly}$ = 2.94 vs. Relevance Anticipation$_{Post\text{-}hocReciprocity}$ = 2.76; T = .512, p = .610).

Construct	Scenario 1A: Relevance only (n = 42) Mean	Scenario 1B : Relevance & Post-hoc Reciprocity (n = 57) Mean	Homogeneity of Variances (Levene)	T-Value[a]
Indebtedness	1.97	2.42	yes	-1.884 n.s.
Distributive Justice	3.18	3.65	yes	-1.140 n.s.
Utilitarian Reciprocity	4.06	4.59	no	-1.729 n.s.
Relevance Anticipation	2.94	2.76	yes	.512 n.s.

[a] Accounting for variance (in)homogeneity; n.s. = not significant

Table 34: Motivation to Provide Information per Scenario within Stage II Manipulation

6.4 SOR-Level Hypotheses Testing

After testing whether the developed mechanisms affect the target variables in the way my SR-model predicts, I now present results of a statistical evaluation of the full hypothesized SOR-model. Thus, the analyses presented in this subchapter provide evidence of the cognitive processes explaining the results obtained in the previous SR-level analyses. As such, testing a full SOR-model helps in understanding why the experimental manipulations did or did not have a significant effect on the target variables.

6.4.1 Selection of SEM Procedures

While less commonly employed than traditional evaluation methods of experiments, it is also possible to evaluate experiments through Structural Equation Modeling (SEM) procedures (Bagozzi and Yi 1989; Bagozzi, Yi and Singh 1991). MacCallum and Austin (2000, p. 210) argued for the use of SEM procedures in causal research by stating that "there seems to be a common misconception that SEM is applicable only to observational studies and not to experimental studies. […] In general, the application of SEM in experimental studies represents a significant but relatively untapped potential area of application. The conceptual boundary that is usually defined between observational and experimental research is probably far too rigid. SEM clearly cuts across that boundary." Russel et al. (1998, p. 19) emphasized that in contrast to traditional analyses of variance, SEM can foster the process of attaining scientific knowledge through experiments because "a particular experimental intervention program may indeed be successful, but the investigators may not understand why the intervention is successful. Analyses of the processes underlying an intervention may allow the investigators to design more effective treatment programs by refining the intervention to focus on processes that are positively related to treatment outcome." For this reason, I employed SEM procedures to test my hypotheses within a full SOR-model incorporating all factors that may affect the target variables, particularly the cognitive processes mediating the effect of the experimental treatments.

There are two ways to deal with different treatment groups within SEM analyses (Jarvenpaa, Shaw and Staples 2004; Russell et al. 1998). One approach consists of separating the different treatment groups and analyzing them through a multi-group analysis (Bagozzi, Yi and Singh 1991; Jarvenpaa, Shaw and Staples 2004). Differences between the groups regarding the independent variables can then be tested by comparing the means of the latent variables (Russell et al. 1998). This approach is appropriate when the manipulations are expected to affect the theoretical relationship between the variables in the model (Russell et al. 1998), i.e., if the manipulations have a moderating effect. The second approach consists of adding one or several dummy variables that represent the different experimental conditions (Bagozzi and Yi 1989; Jarvenpaa, Shaw and Staples 2004; Russell et al. 1998). The use of dummy variables is indicated when the relationships between the variables are expected to be relatively equal across the groups (Russell et al. 1998).

In my research model, the manipulations serve to increase specific feelings and cognitions, such as indebtedness or fairness perceptions, which I expect to mediate the effect of the mechanisms on acceptance of targeting and perceived intrusiveness. I do not expect the mechanisms to affect the theoretical relationship between the latent constructs in the model. For example, I expect that situational privacy concerns always have a negative effect on acceptance of targeting— irrespective of the treatment. Therefore, similar to the procedure employed by Huang, Kahai and Jestice (2010), I followed the latter approach and added direct paths from the three dummy variables representing the experimental manipulations to the latent constructs they are predicted to influence.

Figure 16: Full Structural (SOR-) Model Including Experimental Conditions

Figure 16 presents the full structural model containing all hypothesized links, including the proposed effects of the experimental conditions on latent constructs. According to the hypotheses presented in chapter 5, the dummy variable appeal to reciprocity is predicted to affect three latent constructs, namely indebtedness, perceived distributive justice, and utilitarian reciprocity. As explained in section 5.5.2, those constructs are conceptually different, but related. Because those three variables are influenced by the dummy variable representing the 'appeal to reciprocity' condition, they constitute dependent variables in my model. However, as covariances of dependent variables are not estimable parameters within SEM procedures, the estimation algorithm assumes dependent variables not to correlate. To account for this restriction while recognizing that the three constructs are related, I allowed their residuals to correlate by adding the correlation paths, as suggested by Byrne (2010). The latent residuals, which I allowed to correlate represent variation remaining in the intercepts and slopes after partialling out the effect of the experimental treatment (Byrne 2010).

Furthermore, to control for potential extraneous factors, I added direct paths from the control variables 'general attitude to advertising' and 'perceived utility of the website' to all dependent variables in the model. As the effects of the control variables are not central to this research, they are not plotted in the structural model depicted in Figure 16 to improve the clarity of the exhibit.

6.4.2 Test of Requirements and Selection of Estimation Algorithm

Covariance-based structural equation modeling (CBSEM) procedures estimate model parameters by comparing the empirical covariance matrix of the variables in the model to the estimated covariance matrix of a model with the best fit (Weiber and Mühlhaus 2009). This is achieved by minimizing within an iterative process a function that reflects the discrepancy between the actual and the estimated matrix (Bühner 2006). There are different algorithms that can be employed for model estimation, including among others Maximum Likelihood (ML), Generalized Least Squares (GLS), Unweighted Least Squares (ULS), Scale-free Least Squares (SLS), and Asymptotically Distribution Free (ADF) estimation procedures. Among these estimation procedures, ML is by far the most widely used in scientific research (Bühner 2006). An overview of the requirements and characteristics of these procedures can be found in appendix VI.

Estimation procedures can be classified as either assuming normality or not assuming any particular distribution of the indicators. Within distribution-free estimation procedures, only ADF provides inferential statistics required for assessing model fit and significance testing of model parameters. However, ADF is often not practicable because it requires extremely large samples (Weiber and Mühlhaus 2009). With t being the number of parameters to be estimated, applying the ADF algorithm to my model would have required a tremendous sample size of $1.5 \times t\,(t + 1) = 1.5 \times 174 \times 175 = 456{,}750$ respondents. Obviously, my laboratory experiment did not fulfill this requirement, as my sample consisted of 515 respondents (plus an additional 61 respondents in the control group who were not exposed to any treatment and only answered a reduced questionnaire). For all

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other estimation procedures, my sample size was sufficient as it clearly exceeded the minimum sample size of t + 50 = 174 + 50 = 224 recommended by Bagozzi (1981).

With regard to estimation procedures assuming normality, the Mardia test of multivariate normality was highly significant (z = 346.3, p < .001) indicating that data were not multivariate normal. Monte Carlo studies have shown that using estimation ML or GLS procedures when data are not multivariate normal may inflate the value of the χ^2-statistic and increase the standard error associated with the model parameters (e.g., Browne 1984; Finch, West and MacKinnon 1997; Olsson et al. 2000). Therefore, in cases of non-normality, the χ^2-statistic is not suitable for assessing model fit (Bühner 2006). However, in cases of large and complex models, the χ^2-statistic typically becomes significant anyway, which would indicate a not exact model fit. For this reason, researchers typically turn to Global Fit Indices instead of the χ^2-statistic to asses model fit, which is appropriate for large sample sizes (approx. >250—see Bühner 2006). Therefore, a potentially inflated χ^2-statistic resulting from non-normality did not appear problematic for my research purposes. Even more importantly, ML procedures are extremely robust towards violations of the normality assumption (McDonald and Ho 2002). In a Monte Carlo study comparing different algorithms, Olsson et al. (2000, p. 578) found that "ML tends in general not only to be more stable, but also demonstrates higher accuracy in terms of empirical and theoretical fit compared to the other estimators", and concluded that their "choice of estimator would be ML". In this context, Bühner (2006) notes that West, Finch and Curran (1995) recommended using ML procedures if the skewness of the manifest variables is below 2 and their kurtosis constantly falls below 7. As can be seen in appendix VII, all items included in my model fell into this acceptable range regarding skewness and kurtosis. Against this background, employing ML procedures to estimate my model seemed to be justified. This argument is further supported by a recent Monte Carlo study yielding that "ML-based CBSEM proves extremely robust with respect to violations of its underlying distributional assumptions. The distribution of indicators impacts neither the share of proper

solutions for ML-based CBSEM nor parameter accuracy in any significant and substantial manner, even in extreme cases of skewness and kurtosis" (Reinartz, Haenlein and Henseler 2009, p. 431).

6.4.3 Validation of the Structural Model

As described in section 6.2, the scales included in my structural model had good psychometric properties, which were captured through their respective *local fit* indices. As depicted in Table 35, there are several well-established evaluation criteria to assess the *global fit* of the structural model. They include the Root Mean Square Error of Approximation (RMSEA), the Chi-square to degrees of freedom ratio (χ^2/d.f.), the Tucker Lewis Index (TLI)—also called the Non-normed Fit Index (NNFI) —and the Comparative Fit Index (CFI).[46]

Criterion	Cut-off Value	Source
Inferential Stand-Alone Fit Index		
RMSEA	$\leq .06$	Hu and Bentler (1999)
	$\leq .08$	Brwone and Cudeck (1993)
Descriptive Stand-Alone Fit Index		
χ^2/d.f.	≤ 2.0	Byrne (1989)
	≤ 3.0	Homburg and Giering (1996)
Descriptive Incremental Fit Indices		
TLI (NNFI)	$\approx .95$	Hu and Bentler (1999)
	$\geq .90$	Homburg and Baumgartner (1996)
CFI	$\geq .95$	Carlson and Mulaik (1993)
	$\geq .90$	Homburg and Baumgartner (1998)

Source: based on Weiber and Mühlhaus (2009)

Table 35: Evaluation Criteria for Structural Model (Global Fit Indices)

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[46] I followed Kenny's (2010) recommendation of not employing the NFI for model assessment, as this index does not adjust for the number of parameters included in a model. Similarly, I do not report GFI or AGFI because the current consensus in the scientific community is not to evaluate these measures, as they are affected by sample size (Kenny 2010).

The χ^2-statistic of my overall structural model was significant (χ^2 (906) = 2,046.836, p < .001), which I expected, given the large sample size (n = 515) and the fact that it might be slightly inflated due to non-normality of indicators. Hoelter's N = 246 indicated that the χ^2-statistic would be significant (α = .05) at a sample size of 246, and was thus above the recommended minimum value of 200 (Hoelter 1983). All global fit indices introduced in Table 35 met the required criteria thresholds. The RMSEA = .049 and its p-value of Close Fit PCLOSE = .610 > .05 indicated that the data fit the model well. Furthermore, the descriptive fit indices χ^2/d.f. = 2.274 < 3, TLI = .943 > .9, and CFI = .948 > .9 indicated that the model was a reasonably realistic representation of the data.

Construct	Ac	Int	NR	DJ	UR	RA	PJ	Ri	Tr	PC	AA	PU
Ac: Acceptance	1,0											
Int: Intrusiveness	-.26	1.0										
NR: Normative Reciprocity	.46	-.21	1.0									
DJ: Distributive Justice	.48	-.18	.70	1.0								
UR: Utilitarian Reciprocity	.51	-.13	.52	.56	1.0							
RA: Relevance Anticipation	.48	-.25	.56	.47	.52	1.0						
PJ: Procedural Justice	.36	-.20	.33	.48	.37	.35	1.0					
Ri: Risk Beliefs	-.43	.24	-.29	-.24	-.28	-.30	-.19	1.0				
Tr: Trusting Beliefs	.51	-.36	.49	.46	.45	.52	.55	-.48	1.0			
PC: Concern for Privacy	-.18	.16	.01	-.03	-.01	-.01	.00	.40	-.16	1.0		
AA: Attitude to Advertising	.27	-.29	.25	.29	.22	.47	.29	-.17	.33	-.02	1.0	
PU: Perceived Utility	.34	-.38	.40	.38	.27	.38	.40	-.23	.47	-.08	.35	1.0

Table 36: Intercorrelation Matrix of Constructs in Structural Model

Table 36 shows that correlations among the latent constructs in the structural model were in an acceptable range. Only the correlation between distributive justice and normative reciprocity of .70 was relatively high. As explained in section 5.5.2, those constructs are conceptually different, but related. As can be seen in Table 37, the Fornell and Larcker (1981) criterion revealed that all constructs in my model possessed discriminant validity. According to the criterion, two latent constructs possess discriminant validity if their squared correlation is smaller than the AVE of each item.

Squared Correlations	Ac	Int	NR	DJ	UR	RA	PJ	Ri	Tr	PC	AA	PU
Ac: Acceptance	1.0											
Int: Intrusiveness	.07	1.0										
NR: Normative Reciprocity	.21	.04	1.0									
DJ: Distributive Justice	.23	.03	.49	1.0								
UR: Utilitarian Reciprocity	.26	.02	.27	.31	1.0							
RA: Relevance Anticipation	.23	.06	.32	.22	.27	1.0						
PJ: Procedural Justice	.13	.04	.11	.23	.14	.12	1.0					
Ri: Risk Beliefs	.19	.06	.08	.06	.08	.09	.04	1.0				
Tr: Trusting Beliefs	.26	.13	.24	.21	.21	.27	.30	.23	1.0			
PC: Concern for Privacy	.03	.03	.00	.00	.00	.00	.00	.16	.02	1.0		
AA: Attitude to Advertising	.07	.09	.06	.08	.05	.22	.08	.03	.11	.00	1.0	
PU: Perceived Utility	.11	.15	.16	.15	.07	.15	.16	.05	.22	.01	.12	1.0
AVE	**.87**	**.84**	**.73**	**.80**	**.87**	**.81**	**.67**	**.82**	**.80**	**.72**	**.85**	**.79**
DV: AVE greater than inter-correlations	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

Table 37: Assessment of Discriminant Validity (DV) of Constructs in Model

6.4.4   Results of Model Estimation and Hypotheses Tests

Table 38 and Figure 17 show all standardized path estimates within the structural model and the significance level of the associated critical ratios.

Hypo-thesis	Predictor		Dependent Variable	Std. β	Critical Ratio
H₂	**High Control Manipulation**	→	Procedural Justice	.093	**2.176 ***
H₃	Procedural Justice	→	Risk Beliefs	-.124	**-2.609 ****
H₄	Risk Beliefs	→	Acceptance	-.237	**-5.826 ******
H₅	Risk Beliefs	→	Intrusiveness	.102	**2.331 ***
H₆	Procedural Justice	→	Trusting Beliefs	.406	**8.808 ******
H₇	Trusting Beliefs	→	Acceptance	.149	**3.321 ******
H₈	Trusting Beliefs	→	Intrusiveness	-.176	**-3.608 ******
H₂₈	Concern for Privacy	→	Risk Beliefs	.399	**8.806 ******
H₁₁	**Relevance Information Manipulation**	→	Relevance Anticipation	.024	.613 n.s.
H₁₂	Relevance Anticipation	→	Acceptance	.151	**3.368 ******
H₁₃	Relevance Anticipation	→	Intrusiveness	-.004	-.087 n.s.
H₁₆	**Appeal to Reciprocity Manipulation**	→	Normative Reciprocity	.097	**2.231 ***
H₁₇	Normative Reciprocity	→	Acceptance	-.021	-.26 n.s.
H₁₈	Normative Reciprocity	→	Intrusiveness	-.035	-.395 n.s.
H₁₉	**Appeal to Reciprocity Manipulation**	→	Distributive Justice	.124	**2.91 ****
H₂₀	Distributive Justice	→	Acceptance	.18	**2.256 ***
H₂₁	Distributive Justice	→	Intrusiveness	.056	.646 n.s.
H₂₂	**Appeal to Reciprocity Manipulation**	→	Utilitarian Reciprocity	.069	1.62 n.s.
H₂₃	Utilitarian Reciprocity	→	Acceptance	.237	**4.949 ******
H₂₄	Utilitarian Reciprocity	→	Intrusiveness	.066	1.283 n.s.

Std. β = standardized estimate; significance: * p < .05; ** p < .01; *** p < .001; n.s. = not signif.

Table 38: Results of SEM Hypotheses Testing

Regarding the experimental condition of providing a high level of control, all related paths were significant and in the expected direction: Providing a high level

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of control (vs. providing a medium level of control) had a positive effect on respondents' perceptions of procedural justice ($\beta = .093$, $p = .030$), thus supporting H_2. Perceived procedural justice, in turn, had a negative path to risk beliefs ($\beta = -.124$, $p = .009$) in support of H_3. Respondents' general concern for privacy increased risk beliefs ($\beta = .399$, $p = .000$), as predicted by H_{28}. Furthermore, risk beliefs as a measure of situational privacy concerns had a negative effect on the acceptance of targeting ($\beta = -.237$, $p = .000$) and a positive effect on the perceived intrusiveness of advertisements on the website ($\beta = .102$, $p = .20$), thereby supporting H_4 and H_5. Perceived procedural justice also had a positive impact on trusting beliefs ($\beta = .406$, $p = .000$), which, in turn, had a positive effect on acceptance ($\beta = .149$, $p = .000$) but a negative effect on perceived intrusiveness ($\beta = -.176$, $p = .000$). Thus, H_6, H_7, and H_8 were supported, too.
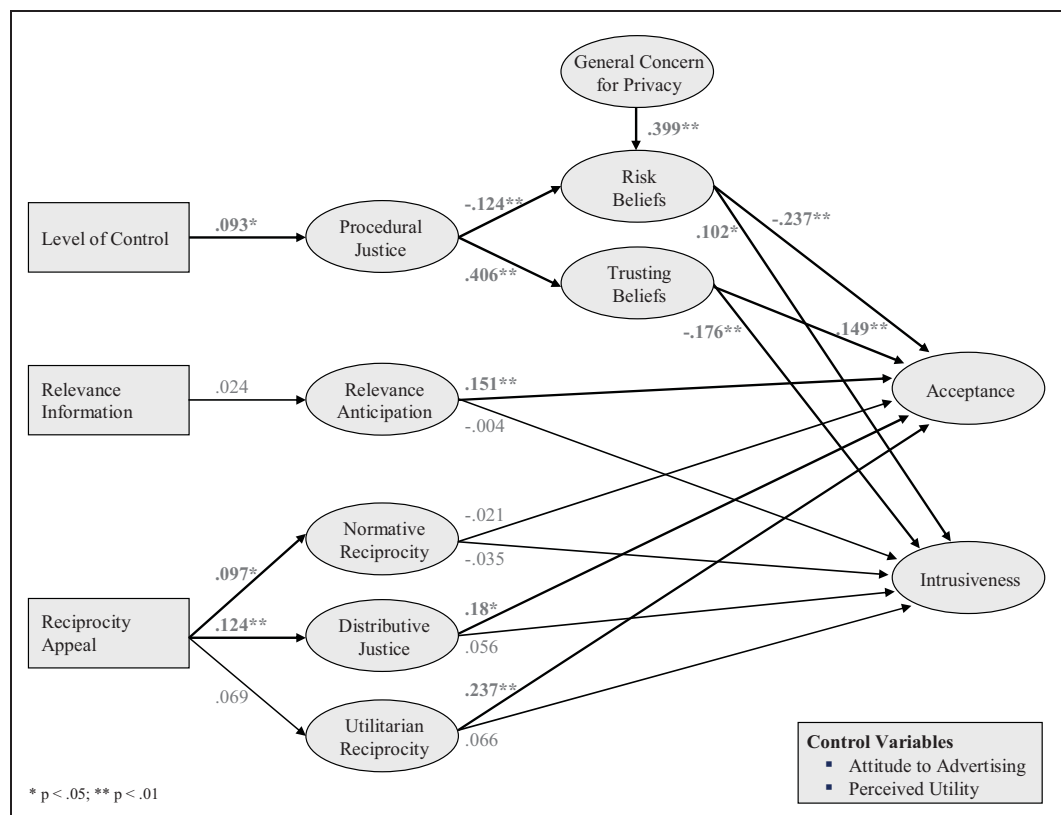
Figure 17: Estimated Standardized Path Coefficients in Structural Model

The relevance information (vs. no relevance information) manipulation had no significant effect on respondents' relevance anticipations (β = .024, p = .540). However, relevance anticipations per se were positively associated with acceptance of targeting at a 1 percent significance level (β = .151, p = .000), but not with perceived intrusiveness (β = -.004, p = .931). Consequently, H_{11} as well as H_{13} were not supported, whereas H_{12} was supported.

The effects of 'appealing to reciprocity' (vs. 'not appealing to reciprocity') were mixed. Whereas appealing to reciprocity had a moderate, but significant, positive effect on indebtedness (β = .097, p = .026), indebtedness, in turn, had neither a significant effect on acceptance (β = -.021, p = .795) nor on intrusiveness (β = -.035, p = .693). Therefore, H_{16} was supported, whereas H_{17} and H_{18} were not supported. In contrast, appealing to reciprocity had a significant positive impact on distributive justice (β = .124, p = .004), with distributive justice being significantly positively associated with acceptance of targeting (β = .18, p = .024). However, distributive justice had no significant effect on perceived intrusiveness (β = .054, p = .518). Thus, H_{19}, and H_{20} were supported, but H_{21} was not. Finally, appealing to reciprocity did not significantly affect respondents' expectations of receiving future rewards by reciprocating, i.e., their motivation related to utilitarian reciprocity (β = .069, p = .105). In general, utilitarian reciprocity was significantly positively associated with acceptance (β = .237, p = .000), but not with perceived intrusiveness (β = .066, p = .199). Therefore, H_{22} and H_{24} were not supported, while H_{23} was supported.

Overall, the model explained a fair amount of the variation of the target variables. As can be seen in Table 39, depicting the squared multiple correlations (SMC) of all dependent variables, the structural model explained 33.1 percent of the variance in acceptance of targeting and 18.4 percent of the variance in perceived intrusiveness.

Predictor Variable	Dependent Variable								
	Ac	Int	PJ	Ri	Tr	RA	NR	UR	DJ
CONT: Control Manipulation	.008	-.008	.093	-.011	.038				
PJ: Procedural Justice	.09	-.084		-.124	.406				
Ri: Risk Beliefs	-.237	.102							
Tr: Trusting Beliefs	.149	-.176							
REL: Relevance Manipulation	.004	0				.024			
RA: Relevance Anticipation	.151	-.004							
REC: Reciprocity Manipulation	.037	.008					.097	.069	.124
NR: Normative Reciprocity	-.021	-.035							
DJ: Distributive Justice	.18	.056							
UR: Utilitarian Reciprocity	.237	.066							
AA: Attitude to Advertising	.193	-.192	.187	-.114	.203	.394	.137	.145	.188
PU: Perceived Utility	.308	-.325	.352	-.177	.431	.282	.375	.24	.338
PC: Concern for Privacy	-.095	.04		.399					
SMC of Dependent Variable	**.331**	**.184**	**.167**	**.216**	**.365**	**.235**	**.169**	**.084**	**.165**

Blanks = no specified direct or indirect causal link in structural model

Table 39: Standardized Total Effects and Squared Multiple Correlations (SMC)

However, this relatively high level of explanatory power with regard to the acceptance construct was not only due to the hypothesized causal relationships, but also to the effect of the control variables. In fact, the total standardized effect of the independent variables in the model is small to moderate, as can be seen in Table 39. For example, the standardized total effect of appealing to reciprocity on

targeting acceptance was about 4 percent.[47] Thus, while the causal structural model succinctly represents consumers' cognitive evaluations and attitudes, the level of adjustment that the control variables provide to the dependent variables is not negligible, either. With nine dependent variables (procedural justice, risk beliefs, trusting beliefs, relevance anticipation, normative reciprocity, distributive justice, utilitarian reciprocity, acceptance, and intrusiveness) and two control variables (general attitude to advertising and perceived utility of website) in the model, there were 18 potential additional relationships. 16 out of those 18 relationships were significant, as can be seen in detail in appendix VIII. In fact, general attitude to advertising was negatively related with intrusiveness (β = -.158, $p < .01$) and risk beliefs (β = -.091, $p < .05$). It was positively related with utilitarian reciprocity (β = .145, $p < .01$), distributive justice (β = .188, $p < .01$), normative reciprocity (β = .137, $p < .01$), relevance anticipation (β = .394, $p < .01$), trusting beliefs (β = .127, $p < .01$), and procedural justice (β = .187, $p < .01$). The perceived utility of the website was negatively related with intrusiveness (β = -.251, $p < .01$) as well as risk beliefs (β = -.134, $p < .01$), and positively related with utilitarian reciprocity (β = .375, $p < .01$), distributive justice (β = .338, $p < .01$), normative reciprocity (β = .375, $p < .01$), relevance anticipations (β = .282, $p < .01$), trusting beliefs (β = .288, $p < .01$), and procedural justice (β = .352, $p < .01$). While those relationships might have been somewhat inflated through common method variance—as will be assessed in the next section—they suggested an area of potential improvement in the model. In fact, the only variable not significantly adjusted by the control variables through a direct path was acceptance of targeting. Yet, there was a substantial indirect effect of the control variables on acceptance. As can be seen in appendix IX, the standardized indirect effect of general attitude to advertising on acceptance equaled .182, and the standardized effect of perceived utility on acceptance even amounted to .259.

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[47] With regard to the relatively substantial differences in mean values associated with the reciprocity mechanism, this effect appears very small and indicates that there might also be a direct path from 'appealing to reciprocity' to targeting acceptance which the SEM model currently does not consider—an issue, that will be analyzed in section 6.4.6.

6.4.5   Assessment of Common Methods Biases

In order to assess whether the results of the model estimation and hypotheses tests were biased by common method variance, I re-estimated the hypothesized model with a first order factor added to all indicators. In this way, I controlled for the effects of a single unmeasured latent method factor on the measures, as suggested by Podsakoff et al. (2003). This procedure had the advantage in that it did not require me to specify and measure any particular factor that might have caused the method effects. However, a general disadvantage of this method is that it often causes models to be under-identified if the number of indicators is relatively small compared to the number of constructs in a model (Podsakoff et al. 2003), which was indeed the case for my model. Therefore, in line with previous researchers (e.g., MacKenzie, Podsakoff and Paine 1999), I constrained the method factor loadings to be equal. For identification purposes, it was further necessary to reduce the number of parameters to be estimated. Therefore, I only re-estimated a sub-model in which the intrusiveness variable was no longer included. Removing this variable from the model had the advantage of decreasing the number of parameters to be estimated from 177 to 155, as there were many paths leading to the intrusiveness variable. At the same time, the variables predicting intrusiveness were the same variables that predicted acceptance. Thus, if common method variance did not affect the significance of the relationship between the independent variables and the target variable acceptance, one could reasonably infer that this would either be the case for intrusiveness. That is because if common method variance was an issue in my dataset, there was no obvious reason why common method variance would affected respondents' ratings of acceptance and intrusiveness differently. Furthermore, several hypothesized relationships involving intrusiveness did not prove to be significant. Regarding those relationships, checking for artificial inflation through common method variance was not necessary anyway.

Table 40 shows the standardized parameter estimates of the reduced model including the common method factor (CMF) compared to the original full model.

Predictor		Dependent Variable	Full Model Excluding CMF		Reduced Model Including CMF	
			Std. β	Critical Ratio	Std. β	Critical Ratio
High Control Manipulation	→	Procedural Justice	.093	**2.176 ***	.087	1.931 n.s.
Procedural Justice	→	Risk Beliefs	-.124	**-2.609 ***	-.197	**-3.884 ***
Risk Beliefs	→	Acceptance	-.237	**-5.826 ***	-.284	**-5.993 ***
Risk Beliefs	→	Intrusiveness	.102	**2.331 ***		
Procedural Justice	→	Trusting Beliefs	.406	**8.808 ***	.393	**8.26 ***
Trusting Beliefs	→	Acceptance	.149	**3.321 ***	.139	**2.999 ***
Trusting Beliefs	→	Intrusiveness	-.176	**-3.608 ***		
Concern for Privacy	→	Risk Beliefs	.399	**8.806 ***	.356	**7.079 ***
Relevance Information Manipulation	→	Relevance Anticipation	.024	.613 n.s.	.022	.544 n.s.
Relevance Anticipation	→	Acceptance	.151	**3.368 ***	.139	**3.063 ***
Relevance Anticipation	→	Intrusiveness	-.004	-.087 n.s.		
Appeal to Reciprocity Manipulation	→	Normative Reciprocity	.097	**2.231 ***	.100	**2.206 ***
Normative Reciprocity	→	Acceptance	-.021	-.26 n.s.	-.035	-.432 n.s.
Normative Reciprocity	→	Intrusiveness	-.035	-.395 n.s.		
Appeal to Reciprocity Manipulation	→	Distributive Justice	.124	**2.91 ***	.131	**2.957 ***
Distributive Justice	→	Acceptance	.18	**2.256 ***	.170	**2.147 ***
Distributive Justice	→	Intrusiveness	.056	.646 n.s.		
Appeal to Reciprocity Manipulation	→	Utilitarian Reciprocity	.069	1.62 n.s.	.071	1.614 n.s.
Utilitarian Reciprocity	→	Acceptance	.237	**4.949 ***	.227	**4.684 ***
Utilitarian Reciprocity	→	Intrusiveness	.066	1.283 n.s.		

Std. β = standardized estimate; significance: * p < .05; ** p < .01; *** p < .001; n.s. = not signif.

Table 40: Comparison of Path Coefficients with and without a Common Method Factor (CMF)

One can easily see that the overall pattern of significant relationships was not affected by common method variance. The only hypothesized path coefficient whose corresponding critical ratio was no longer significant is the one leading from the high control manipulation to procedural justice (increase in p-value from .030 to .053). However, this should not lead to the conclusion that the high control

manipulation did not significantly increase perceptions of procedural justice as predicted by H_2. In fact, the control manipulation was represented by a dichotomous, external variable. It is highly unlikely that the relationship between the manipulation and perceived procedural justice was inflated by common method variance, because common method variance typically results from same rater effects. Rather, it seems that with regard to this relationship, the selected method controlled common variance too rigidly, which might be due to the fact that I had to force factor loadings to be equal. Regarding the control variables within my model, the effect of general attitude to advertising no longer significantly adjusted normative reciprocity after controlling for the latent common method factor (increase in p-value from .002 to .068) as can be seen in Table 41.

In conclusion, it appears that common method variance was somewhat present in my data. However, it does not substantially affect the significance of the hypothesized relationships, and thus the validity of my results.

Control Variable		Dependent Variable	Full Model Excluding CMF		Reduced Model Including CMF	
			Std. β	Critical Ratio	Std. β	Critical Ratio
Att. Advertising	→	Procedural Justice	.187	**4.295 *****	.119	**2.455 ***
Att. Advertising	→	Risk Beliefs	-.091	**-2.122 ***	-.128	**-2.736 ****
Att. Advertising	→	Trusting Beliefs	.127	**3.287 ****	.128	**3.173 ****
Att. Advertising	→	Relevance Anticipation	.394	**9.455 *****	.354	**7.981 *****
Att. Advertising	→	Normative Reciprocity	.137	**3.109 ****	.087	1.825 n.s.
Att. Advertising	→	Distributive Justice	.188	**4.325 *****	.14	**3.003 ****
Att. Advertising	→	Utilitarian Reciprocity	.145	**3.343 *****	.099	**2.13 ***
Att. Advertising	→	Acceptance	.011	.249 n.s.	-.012	-.254 n.s.
Att. Advertising	→	Intrusiveness	-.158	**-3.268 ****		
Utility of Website	→	Procedural Justice	.352	**7.768 *****	.286	**5.68 *****
Utility of Website	→	Risk Beliefs	-.134	**-2.903 ****	-.164	**-3.325 *****
Utility of Website	→	Trusting	.288	**6.636 *****	.286	**6.381 *****
Utility of Website	→	Relevance Anticipation	.282	**6.712 *****	.242	**5.38 *****
Utility of Website	→	Normative Reciprocity	.375	**7.765 *****	.323	**6.195 *****
Utility of Website	→	Distributive Justice	.338	**7.448 *****	.288	**5.916 *****
Utility of Website	→	Utilitarian Reciprocity	.24	**5.384 *****	.19	**3.994 *****
Utility of Website	→	Acceptance nix	.049	.992 n.s.	.027	.543 n.s.
Utility of Website	→	Intrusiveness	-.251	**-4.623 *****		

Std. β = standardized estimate; significance: * p < .05; ** p < .01; *** p < .001; n.s. = not signif.

Table 41: Comparison of the Effects of Control Variables with and without a Common Method Factor

6.4.6 Tests of Full Mediation within the SOR-Model

The theoretical SOR-model (SOR) tested in this section constitutes a full mediation model. As such, it implicitly assumes that the hypothesized cognitive processes constitute the causal link between the mechanisms presented to respondents and their responses, namely acceptance of targeting and perceived intrusiveness. In contrast, the SR-model tested in section 6.3 does not assume full mediation but does allow for any other underlying cognitive processes explaining the effect of the experimental conditions. In the last step, I therefore tested whether the full mediation model most adequately describes consumers' attitude formation with regard to targeted advertising, or whether a model that also allows

for direct paths from the experimental conditions to the target variables constitutes a significantly more realistic representation of the data.

To do so, I followed the approach described by Russel et al. (1998), which was employed in an experimental study by Prussia and Kinicki (1996) and in a privacy study by Malhotra, Kim, and Agarwal (2004). Full mediation can be tested by comparing the fit of a model that does not include a direct path from the experimental manipulation to the dependent target variables, to a model that includes an additional direct link, which I will refer to as the partial mediation model (Russell et al. 1998; see also Baron and Kenny 1986; Bentler and Bonett 1980). Thus, the full mediation model is nested in the partial mediation model. According to Russell et al. (1998) one can compare two models where one model is nested within the other model by comparing their χ^2-statistic, because the difference in the values of both χ^2-statistics also follows a chi-square distribution. The number of degrees of freedom of this χ^2-distribution is the difference of degrees of freedom of both models. Since in the full mediation test one additional path is added, this difference typically equals one. If the difference between the χ^2-statistic is insignificant, the model full mediation model fits the data as well as the partial mediation model (PMM). In this case, one can conclude that including the direct path does not significantly improve the model, which supports the full mediation hypothesis.

Against this background, I compared the theoretical full mediation model with three partial mediation models each including two additional direct paths from one of the three experimental interventions on the target variables 'acceptance of targeting' and 'perceived intrusiveness'. Thus, each partial mediation model focused on one mediating effect related to one experimental condition at a time (PMM-Control, PMM-Relevance, PMM-Reciprocity).

Regarding the mechanism of appealing to reciprocity, the fit of the partial mediation model (PMM-Reciprocity) was reasonably good (χ^2/d.f. = 2.248, RMSEA = .049, TLI = .944, and CFI = .949). The χ^2-statistic of the partial mediation model related to the reciprocity manipulation was significantly lower than the χ^2-statistic of the theoretical model (χ^2_{TM} = 2,046.836; $\chi^2_{PMM\text{-}Reciprocity}$ =

2,032.341; $\Delta\chi^2 = 7.636$, p = .006) suggesting that the cognitive processes related to appealing to reciprocity, namely normative reciprocity, distributive justice, and utilitarian reciprocity, do not fully mediate the effect of the control mechanisms. As can be seen in Table 42, both critical ratios related to the direct paths from the reciprocity manipulation to acceptance (β = .095, p = .012) and intrusiveness (β = -.119, p = .004) were significant. Given the results of the previous full SOR-model test presented next to the estimation parameters of the partial mediation model in Table 42, it appears that appealing to reciprocity affects intrusiveness through a direct link only, which is in line with the results of the SR-model test in section 6.3. Thus, the hypothesized cognitive processes do not explain the existing effect of the reciprocity manipulation on intrusiveness, which will be discussed in detail in chapter 7. Apart from that, the overall strength and significance pattern of all other structural relationships in the partial mediation model remains relatively unchanged, as can also be seen in Table 42, too. In particular, the causal link between the reciprocity manipulation and distributive justice, and between distributive justice and acceptance remained significant and the size of the respective standardized path coefficients were relatively unaffected by the additional direct path. Therefore, the effect of appealing to reciprocity on acceptance is partially mediated by distributive justice.

Predictor		Dependent Variable	Full Mediation Model (SOR)		Model with Direct Path from Reciprocity	
			Std. β	Critical Ratio	Std. β	Critical Ratio
High Control Manipulation	→	Procedural Justice	.093	2.176 *	.093	2.177 *
Procedural Justice	→	Risk Beliefs	-.124	-2.609 **	-.124	-2.612 **
Risk Beliefs	→	Acceptance	-.237	-5.826 ***	-.235	-5.79 ***
Risk Beliefs	→	Intrusiveness	.102	2.331 *	.098	2.261 n.s.
Procedural Justice	→	Trusting Beliefs	.406	8.808 ***	.406	8.813 ***
Trusting Beliefs	→	Acceptance	.149	3.321 ***	.155	3.448 ***
Trusting Beliefs	→	Intrusiveness	-.176	-3.608 ***	-.183	-3.766 ***
Concern for Privacy	→	Risk Beliefs	.399	8.806 ***	.399	8.808 ***
Relevance Information Manipulation	→	Relevance Anticipation	.024	.613 n.s.	.024	.613 n.s.
Relevance Anticipation	→	Acceptance	.151	3.368 ***	.151	3.377 ***
Relevance Anticipation	→	Intrusiveness	-.004	-.087 n.s.	-.003	-.068 n.s.
Appeal to Reciprocity Manipulation	→	**Acceptance**			.095	**2.502 ***
Appeal to Reciprocity Manipulation	→	**Intrusiveness**			-.119	**-2.903 ****
Appeal to Reciprocity Manipulation	→	Normative Reciprocity	.097	**2.231 ***	.097	**2.247 ***
Normative Reciprocity	→	Acceptance	-.021	-.260 n.s.	-.02	-.243 n.s.
Normative Reciprocity	→	Intrusiveness	-.035	-.395 n.s.	-.038	-.432 n.s.
Appeal to Reciprocity Manipulation	→	Distributive Justice	.124	**2.910 ****	.123	**2.899 ****
Distributive Justice	→	Acceptance	.180	**2.256 ***	.164	**2.052 ***
Distributive Justice	→	Intrusiveness	.056	.646 n.s.	.078	.906 n.s.
Appeal to Reciprocity Manipulation	→	Utilitarian Reciprocity	.069	1.62 n.s.	.069	1.625 n.s.
Utilitarian Reciprocity	→	Acceptance	.237	**4.949 *****	.237	**4.963 *****
Utilitarian Reciprocity	→	Intrusiveness	.066	1.283 n.s.	.067	1.312 n.s.

Std. β = standardized estimate; significance: * $p < .05$; ** $p < .01$; *** $p < .001$; n.s. = not signif.

Table 42: Path Coefficients of Full Mediation Model and Partial Mediation Model with Regard to the Reciprocity Manipulation

In line with the insignificant effects found in the SR-model test in section 6.3, adding a direct path from the relevance condition to acceptance and intrusiveness

did not improve the model significantly (χ^2_{TM} = 2,046.836; $\chi^2_{PMM\text{-}Relevance}$ = 2,046.163; $\Delta\chi^2$ = .300, p = .584). Therefore, I do not present the parameter estimates of the partial mediation model with regard to relevance. Overall, the relevance information condition has neither a direct nor an indirect, i.e., mediated, effect on acceptance and intrusiveness.

My theoretical model further assumed that procedural justice and the related trusting and risk beliefs mediate the effect of providing a high level of control on acceptance and intrusiveness. As such, procedural justice, in turn, is assumed to be fully mediated by risk and trusting beliefs. Therefore, in testing for full mediation regarding the control condition, I pursued a two staged approach. First, I compared the full mediation model to a model in which I added a direct path from control to acceptance and intrusiveness. Then, I tested whether the effect of procedural justice itself was mediated by risk and trusting beliefs.

With regard to the control manipulation, the fit of the partial mediation model was reasonably good (χ^2/d.f. = 2.259, RMSEA = .049, TLI = .943, and CFI = .948). The χ^2-statistic of the partial mediation model related to the control manipulation was significantly lower than the χ^2-statistic of the theoretical model (χ^2_{TM} = 2,046.836; $\chi^2_{PMM\text{-}Control}$ = 2,042.051; $\Delta\chi^2$ = 4.785, p = .029), suggesting that the cognitive processes related to procedural justice do not fully mediate the effect of the control mechanism on the target variables. However, as can be seen in Table 43, only the direct relationship between the control manipulation and acceptance was significant (β = .083, p = .028); the critical ratio regarding the direct path to intrusiveness was not significant (β = -.007, p = .868). Given the results of the previous full SOR-model test, it appears that the control condition does not have any effect on perceived intrusiveness, neither directly nor indirectly (see discussion in chapter 7). The overall strength and significance pattern of all other structural relationships in the partial mediation model remained relatively unchanged, as can be seen in Table 43. In particular, the critical rations related to the path from the control manipulation to procedural justice and the paths linking procedural justice to the target variables remained significant, as required by partial mediation.

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Predictor		Dependent Variable	Full Mediation Model (SOR)		Model with Direct Path from Control	
			Std. β	Critical Ratio	Std. β	Critical Ratio
High Control Manipulation	→	**Acceptance**			.083	**2.204 ***
High Control Manipulation	→	**Intrusiveness**			-.007	-.167 n.s.
High Control Manipulation	→	**Procedural Justice**	.093	**2.176 ***	.093	**2.179 ***
Procedural Justice	→	Risk Beliefs	-.124	**-2.609 ****	-.124	**-2.606 ****
Risk Beliefs	→	Acceptance	-.237	**-5.826 *****	-.247	**-6.093 *****
Risk Beliefs	→	Intrusiveness	.102	**2.331 ***	.102	**2.351 ***
Procedural Justice	→	Trusting Beliefs	.406	**8.808 *****	.406	**8.807 *****
Trusting Beliefs	→	Acceptance	.149	**3.321 *****	.140	**3.138 ****
Trusting Beliefs	→	Intrusiveness	-.176	**-3.608 *****	-.175	**-3.589 *****
Concern for Privacy	→	Risk Beliefs	.399	**8.806 *****	.399	**8.809 *****
Relevance Information Manipulation	→	Relevance Anticipation	.024	.613 n.s.	.024	.614 n.s.
Relevance Anticipation	→	Acceptance	.151	3.368 ***	.156	3.503 ***
Relevance Anticipation	→	Intrusiveness	-.004	-.087 n.s.	-.005	-.097 n.s.
Appeal to Reciprocity Manipulation	→	Normative Reciprocity	.097	2.231 *	.097	2.229 *
Normative Reciprocity	→	Acceptance	-.021	-.260 n.s.	-.026	-.318 n.s.
Normative Reciprocity	→	Intrusiveness	-.035	-.395 n.s.	-.035	-.389 *
Appeal to Reciprocity Manipulation	→	Distributive Justice	.124	2.910 **	.124	2.911 **
Distributive Justice	→	Acceptance	.18	2.256 *	.185	2.328 *
Distributive Justice	→	Intrusiveness	.056	.646 n.s.	.055	.640 n.s.
Appeal to Reciprocity Manipulation	→	Utilitarian Reciprocity	.069	1.62 n.s.	.069	1.619 n.s.
Utilitarian Reciprocity	→	Acceptance	.237	4.949 ***	.235	4.929 ***
Utilitarian Reciprocity	→	Intrusiveness	.066	1.283 n.s.	.066	1.288 n.s.

Std. β = standardized estimate; significance: * p < .05; ** p < .01; *** p < .001; n.s. = not signif.

Table 43: Path Coefficients of Full Mediation Model and Partial Mediation Model with regard to the Control Manipulation

Regarding the mediating effect of risk beliefs and trusting beliefs, the results indicate that in spite of an added path from procedural justice to acceptance and intrusiveness, the decrease in the χ^2-statistic was insignificant (χ^2_{TM} = 2,046.836;

$\chi^2_{\text{PMM-Procedural Justice}} = 2{,}045.823$; $\Delta\chi^2 = 1.013$, $p = .314$). Therefore, I conclude that the effect of procedural justice on acceptance and intrusiveness is fully mediated by risk beliefs and trusting beliefs. Since adding the direct path did not improve the model significantly, I do not present the parameter estimates of the partial mediation model with regard to procedural justice here.

Table 44 summarizes the results of all full mediation tests. However, when interpreting those results, one should keep in mind that the χ^2-statistic might be inflated due to non-normality. Although this inflation presumably affected all full or partial mediation models alike, which is why the results are most likely robust, they should still be interpreted with caution and only in combination with the results obtained in the SR-level hypotheses test in section 6.3.

Model	χ^2	χ^2/d.f.	RMSEA	TLI	CFI	$\Delta\chi^2$ with TM
Theoretical Model (SOR)	2046.836	2.259	.049	.943	.948	n/a
SOR + Direct Effect of Control	2042.051	2.259	.049	.943	.948	**4.785 ***
SOR + Direct Effect of Relevance	2046.163	2.263	.050	.943	.948	.673 n.s.
SOR + Direct Effect of Reciprocity	2032.341	2.248	.049	.944	.949	**.764 ***
SOR + Direct Effect of Procedural Justice	2045.823	2.263	.050	.943	.948	1.013 n.s.

Significance: * $p < .05$; ** $p < .01$; *** $p < .001$; n.s. = not significant

Table 44: Comparison of Model Fit of Full Mediation Model and Partial Mediation Models

6.5 Further Exploratory Analyses

My studies, particularly the alleged predictive targeting survey in study 2, yielded a rich data set allowing for analyses and insights beyond the core research questions of the dissertation. For this reason, I conducted a high number of additional analyses. In the following subsections, I present a selection of those analyses, which provide further relevant findings on the issues of consumers' attitude toward advertisements as a means to fund free online content, privacy concerns, the effectiveness of the developed mechanisms across different demographic groups, and responses to the alleged predictive targeting survey.

These analyses are explorative in nature in that I did not test hypotheses but rather screened my data sets for noticeable patterns. For particularly striking patterns, I selectively conducted significance tests with the sole purpose of getting a better understanding of the extent of the irregularities observed. As such, the following analyses serve to uncover avenues for future research rather than to deliver firm findings.

6.5.1 Acceptance of Advertising as Online Currency

At the core of this dissertation is the question of consumers' privacy concerns and how to increase the acceptance of targeting so as to finance free content. The previous analyses have shown that many consumers are ready to provide information for targeted advertising. If websites employ certain mechanisms such as appealing to reciprocity, consumers' acceptance of targeting increases. This suggests that consumers consider information for targeted advertising as alternative online currency; an aspect that will be further elaborated in the discussion chapter 7.

Irrespective of the privacy issue, an interesting question relates to whether consumers, in general, accept advertising as a means to support free online content or, in other words, as alternative online currency. A survey by McDonald and Cranor (2010) provided first evidence that consumers are comfortable with the idea that advertising supports free content. This question is of high practical relevance, which is why my co-operation partner, a large German advertising

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network, asked me to investigate this question in my studies, too. For this reason, I included a self-developed scale measuring consumers' acceptance of advertising as online currency in the questionnaire in study 1 and one respective item in the alleged predictive targeting survey, as can be seen in Table 45.

Measuring Instrument	M	SD	Item-to-total	C's α	EV	CM	IR	FR	AVE
Alternative Currency Scale	**5.27**	**1.37**		**.94**	**89.8**			**.94**	**.85**
The following statements refer to advertising in general (without usage of browsing information).									
It is okay if there are advertisements on free content websites.[a]	5.23	1.47	.88			.89	.84		
If I do not have to pay for content, it is legitimate if a website displays advertisements to me.	5.30	1.43	.90			.92	.89		
I accept online advertising because it supports free online content.	5.28	1.44	.87			.89	.81		

[a] Item included in alleged predictive targeting survey in experiment 2

Table 45: Items and Psychometric Properties of the Online Currency Scale

An analysis of the respective survey responses showed that, overall, there was a high level of acceptance of advertisements as alternative online currency. In study 1, the average acceptance of advertisements as a means to fund free content was 5.27 on a 7-point Likert scale. In study 2, employing a 5-point Likert scale, it was 3.57. This translates into 46 percent of respondents in study 1 and 62 percent of respondents in study 2 agreeing to advertisements as alternative online currency. Only 4 percent and 22 percent, respectively, disagreed with the practice of displaying advertisements on free content websites, as can be seen in Table 46.[48]

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[48] Please note that due to different scale lengths in studies 1 and 2, the definition of agreement and disagreement slightly differ (see Table 46 for the respective definitions), which might explain the relatively high percentage of disagreement in study 2 compared to study 1.

	Scale Type	Mean	Percentage of Respondents		
			Disagree[a]	Neutral[b]	Agree[c]
Experiment 1 (Laboratory)	7-point Likert scale	5.269	4.0	49.7	46.3
Experiment 2 (Field)	5-point Likert scale	3.567	22.0	16.5	61.5

Rating between: [a] [1; 2.33] in experiment 1 and [1; 2] in experiment 2; [b] [2.66; 5.33] in experiment 1 and [3] in experiment 2; [c] [5.66; 7] in experiment 1 and [4; 5] in experiment 2

Table 46: Agreement with Advertisements as Online Currency

Furthermore, it appeared that Internet users' acceptance of advertisements on free content websites was not influenced by any particular treatment employed in my studies. In study 1, there were neither substantial nor significant mean differences across treatment groups regarding acceptance of advertisements on free content websites, as can be seen in Table 47. Even the responses by participants in the control group not exposed to any mechanism dealing with targeting and privacy did not significantly differ from the responses by all other participants. In study 2, agreement among participants exposed to the relevance teaser and a subsequent post-hoc reciprocity primer was strongest. Yet, there was only a statistically significant difference between this treatment group and the reciprocity treatment group, but not between this group and the relevance group which had not received a post-hoc reciprocity teaser, as can be seen in Table 48.

Treatment	Present/ High/ Yes Mean	Not Present/ Medium/ No Mean	Homogeneity of Variances Levene test n.s.	T-Value (in line with Levene test)
Reciprocity	5.311	5.226	yes	-.709 n.s.
Relevance	5.202	5.336	yes	1.116 n.s.
Control	5.270	5.263	no	-.056 n.s.
Control Group	5.290	5.267	yes	-.124 n.s.

Significance: n.s. = not significant

Table 47: Agreement with Advertisements as Online Currency by Scenario in Experiment 1

	Mean by Scenario			Mean by Website	
	Scenario 1A: Relevance	Scenario 1B: Relevance and Post-Hoc Reciprocity	Scenario 2: Reciprocity	News Website	Query Community
n	42	57	219	231	87
Mean	3.43	3.94	3.50	3.64	3.34
Test for Significance of Mean Differences [a]					
T-Value	-1.778 n.s.		-2.137 *	-1.666 n.s.	
T-Value		-.289 n.s.			

[a] Variance homogeneity given (Levene test); significance: * $p < .05$; n.s. = not significant

Table 48: Agreement with Advertisements as Online Currency by Scenario and Website in Experiment 2

As can be seen in Table 48, too, agreements did not significantly differ across the news website and the query community, which provides further evidence of the generally strong level of acceptance of advertisements on free content websites.

6.5.2   Demographics, Privacy Concerns, and the Provision of Information

In both experiments, respondents were assigned randomly to treatment groups. Therefore, cells did not differ significantly with regard to respondents' demographics (see section 6.1.2.4). For this reason, and because it was not at the core of my research question, I did not systematically evaluate the effect of respondents' demographic characteristics on the target variables. However, in practice, it might be interesting for marketers to know which consumer segments tend to be most privacy sensitive or from which demographic segments it is hardest or easiest to attain informed consent to targeting practices. In fact, previous research has found that women are more concerned with privacy than men (Sheehan 1999; Youn 2009) as they tend to process information in more detail (Chen and Rea 2004; Meyers-Levy and Maheswaran 1991). Furthermore, older people who generally tend to be less Internet savvy are more privacy sensitive (O'Neil 2001; Sheehan 2002). The same holds true for people with a high level of education (O'Neil 2001; Sheehan 2002). This might be explained by

the fact that people with a high level of education tend to have a higher need for cognition (Cacioppo and Petty 1982) or have more knowledge about privacy risks. As a consequence, demographic characteristics might translate into respondents' ratings regarding their general concern for privacy, situational risk, and trusting beliefs, as well as acceptance of targeting.

Demographics	Value of Test Statistic of Mean Difference Test[a] and Mean Values by Education			
	Privacy Concerns	Risk Beliefs	Trusting Beliefs	Acceptance
GENDER	20,0685 n.s.	20,214 n.s.	18,821 n.s.	18,815 n.s.
AGE	7.892 n.s.	1.429 n.s.	**13.618 ***	5.710 n.s.
EDUCATION	**18,366 ***	21,469 n.s.	**17,956 ***	**18,279 ***
Mean High School/ No Degree	5.48	4.76	3.99	3.19
Mean University Entrance Qualification ("Abitur")	5.18	4.82	3.70	2.75

[a] Mann-Withney U test for difference by gender and education; Kruskall-Wallis test for age; significance: * $p < .05$; n.s. = not significant; based on equalized sample n = 408 / 469

Table 49: Difference in Privacy Concerns, Trust, and Acceptance by Demographic Groups in Experiment 1

However, as can be seen in Table 49, there were no significant differences regarding these constructs between men and women in experiment 1. Similarly, there was no significant pattern with regard to the age brackets to which respondents belonged. As displayed in appendix XI, whereas the youngest surfers reported the lowest level of general concern for privacy, their situational risk beliefs were highest. In contrast, their average acceptance of targeting was similar to the average acceptance of survey respondents in their forties and to respondents in the highest age bracket of 60 years and older who were most willing to provide the website with an opt-in. There only appeared several significant differences regarding respondents' ratings across different levels of education. On average, people with a lower level of education reported a higher general concern for privacy than people with a higher level of education, defined as having a university entrance qualification (General Concern for Privacy$_{\text{Lower Education}}$ = 5.48

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vs. General Concern for Privacy$_{\text{Higher Education}}$ = 5.18, p = .042). However, this higher reported privacy sensitivity, on average, did not translate into significantly higher risk beliefs compared to respondents with a high level of education (Risk Beliefs$_{\text{Lower Education}}$ = 4.82 vs. Risk Beliefs$_{\text{Higher Education}}$ = 4.76, p = .559). Trusting beliefs, though, were significantly higher among lower-education respondents compared to higher-education respondents (Trusting Beliefs$_{\text{Lower Education}}$ = 3.99 vs. Trusting Beliefs$_{\text{Higher Education}}$ = 3.70, p = .017). In line with this, the average acceptance of targeting across treatments by people with less education was substantially higher than the average acceptance of people with more education (Acceptance$_{\text{Lower Education}}$ = 3.19 vs. Acceptance$_{\text{Higher Education}}$ = 2.75, p = .033). As it appeared that there was some systematic deviation resulting from respondents' educational backgrounds, I further looked into whether the effectiveness of the mechanisms differed across people with a rather high level of education and people with a rather low level of education.

	Acceptance		Intrusiveness	
Manipulation	**High School/ No Degree**	**University Entrance Qualification**	**High School/ No Degree**	**University Entrance Qualification**
No Reciprocity	2.97	2.31	4.15	4.56
Reciprocity	3.39	3.21**	3.93	3.81 **
No Relevance	3.35	2.77	3.85	4.31
Relevance	3.04	2.73	4.21	4.07
No Control	3.08	2.42	4.12	4.29
Control	3.31	3.04*	3.95	4.11

Significance of mean difference across treatments according to T-test and non-parametric Mann-Whitney U test: * p < .05; ** p < .01

Table 50: Effectiveness of Mechanisms across Educational Groups in Experiment 1

In line with the hypotheses tests in section 6.3, in both educational groups, acceptance of targeting was higher when respondents had been presented with an appeal to reciprocity, as can be seen in Table 50. However, the effect of appealing to reciprocity on acceptance appeared greater among people with a relatively high

level of education, which is also reflected in the respective significance levels (Higher Education Respondents: $\text{Acceptance}_{\text{No-Reciprocity}}$ = 2.31 vs. $\text{Acceptance}_{\text{Reciprocity}}$ = 3.21, Δ Acceptance = .90, p = .001; Lower Education: $\text{Acceptance}_{\text{No-Reciprocity}}$ = 2.97 vs. $\text{Acceptance}_{\text{Reciprocity}}$ = 3.39, Δ Acceptance = .42, p = .117). The same held true for the effect of appealing to reciprocity on intrusiveness (Higher Education Respondents: $\text{Intrusiveness}_{\text{No-Reciprocity}}$ = 4.56 vs. $\text{Intrusiveness}_{\text{Reciprocity}}$ = 3.81, Δ Intrusiveness = -.75, p = .000; Lower Education: $\text{Intrusiveness}_{\text{No-Reciprocity}}$ = 4.15 vs. $\text{Intrusiveness}_{\text{Reciprocity}}$ = 3.93, Δ Acceptance = -.22, p = .354) and the effect of providing a high level of control on acceptance (Higher Education Respondents: $\text{Acceptance}_{\text{Medium-Control}}$ = 2.42 vs. $\text{Acceptance}_{\text{High-Control}}$ = 3.04, Δ Acceptance = .62, p = .018; Lower Education: $\text{Acceptance}_{\text{Medium-Control}}$ = 3.08 vs. $\text{Acceptance}_{\text{High-Control}}$ = 3.31, Δ Acceptance = .23, p = .411). In other words, the effect of appealing to reciprocity and providing a high level of control was similar across educational groups, but it was only statistically significant among respondents with a high level of education. Further in line with the results of the hypotheses tests in section 6.3, informing about advertising relevance did not have a significant effect on the target variables in any educational group. However, whereas there was no statistically significant effect, it appeared that among respondents with a lower level of education, acceptance was even slightly lower and intrusiveness was slightly higher in the relevance information condition (Lower Education Respondents: $\text{Acceptance}_{\text{No-Relevance}}$ = 3.35 vs. $\text{Acceptance}_{\text{Relevance}}$ = 3.04, ΔAcceptance = -.31, p = .260; $\text{Intrusiveness}_{\text{No-Relevance}}$ = 3.85 vs. $\text{Intrusiveness}_{\text{Relevance}}$ = 4.21, ΔIntrusiveness = .36, p = .131), which will be critically discussed in chapter 7.

The field experiment provided further suggestive evidence that appealing to reciprocity is most successful with people with a higher level of education: among those who provided the website with information in the predictive targeting survey the percentage of people with a high level of education increased from 57.1 percent in the relevance condition to 65 percent in the reciprocity condition. However, according to the Pearson χ^2-difference test, the share of respondents with a high level of education across these two scenarios did not significantly

differ ($\chi^2(1)$ = .902, p = .342).[49] Notably, though, the share of respondents with a high level of education was disproportionally high compared to the average online newspaper customer and the German Internet population, as can be seen in appendix XII, too.

6.5.3   Responses to Predictive Targeting Survey in Experiment 2

The previous inferential and descriptive analyses have yielded the conclusion that a teaser appealing to reciprocity performs better in inducing surfers to provide information for targeted advertising than a teaser emphasizing advertising relevance. However, a question that is particularly relevant for websites wishing to monetize their content most effectively is whether changing a teaser also changes the surfer profiles received. That might be the case if a particular teaser text disproportionately attracts surfers with particular interests or Internet usage behaviors that might be more or less attractive to advertisers. In fact, the previous descriptive analysis provided suggestive evidence that people with a high level of education might be more receptive to an appeal to reciprocity. Therefore, in the next two subsections, I analyze whether respondents' responses to the predictive targeting survey differed systematically across scenarios. In addition, responses regarding surfers' Internet usage allow me to explore any systematic patterns in Internet usage and online privacy protection behaviors.

6.5.3.1   Interests by Scenario and Website

In the alleged predictive targeting survey, I asked respondents to rate the degree to which they were interested in of 13 different products and services that are often advertised online. They comprised insurance policies, investment opportunities, telecommunication rates, real estate, leisure travel, personal hygiene products,

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[49] In the condition where respondents first had to click on a relevance teaser and were then exposed to a post-hoc appeal to reciprocity (scenario 1B), 61.8 percent of those who had decided to provide the website with targeting information held a university entrance qualification, which was also significantly different neither from the relevance teaser only

entertainment electronics, music or movies (for purchase online), education, cars and car equipment, local events, organic and wellness food, and electricity cost. An overview of the respective mean ratings on a 5-point Likert scale by scenario and by website is displayed in appendix XIII.

Interestingly, there were no significant differences between the claimed interests of respondents who participated in the survey after being exposed to the reciprocity teaser and respondents exposed to the relevance teaser—even though the demographic composition of the samples was slightly different. According to a T-test, there was only one significant difference in interest between those surfers who had only been exposed to the relevance teaser (scenario 1A) and surfers exposed to the relevance teaser *and* a post-hoc appeal to reciprocity (scenario 1B). The latter group reported substantially more interest in leisure travel (Leisure Travel$_{1B}$ = 3.29 vs. Leisure Travel$_{1A}$ = 2.63, p = .044). There were also a few significant differences between surfers exposed to the reciprocity teaser (scenario 2) and surfers exposed to the relevance teaser and a post-hoc appeal to reciprocity with regard to their interests in leisure travel (Leisure Travel$_{1B}$ = 3.29 vs. Leisure Travel$_2$ = 2.84, p = .037), personal hygiene products (Hygiene Products$_{1B}$ = 2.96 vs. Hygiene Products$_2$ = 2.51, p = .037), and entertainment electronics (Entertainment Electronics$_{1B}$ = 3.20 vs. Entertainment Electronics$_2$ = 2.77, p = .048). The number and the size of those significant differences, though, did not indicate any systematic variation in respondents' overall interest profiles. In fact, the differences in interests were fewer in number and smaller in size than the differences in interests between the news website and the query community. Respondents in the query community were more interested in real estate (Real Estate$_{Query}$ = 2.85 vs. Real Estate$_{News}$ = 2.38, p = .01), leisure travel (Leisure Travel$_{Query}$ = 3.33 vs. Leisure Travel$_{News}$ = 2.74, p = 002), personal hygiene products (Hygiene Products$_{Query}$ = 3.31 vs. Hygiene Products$_{News}$ = 2.35, p = .000), music or movies (Movies-Music$_{Query}$ = 2.73 vs. Movies-Music$_{News}$ = 2.14, p = .004), and education (Education$_{Query}$ = 2.91 vs. Education$_{News}$ = 2.52, p = .029) —categories which also appeared rather unrelated.

condition (scenario 1A) ($\chi^2(1)$ = .182, p = .669) nor from the reciprocity teaser condition.

6.5.3.2 Internet Usage Pattern

Regarding respondents' Internet usage behavior, there were several (i.e., 8 out 19 potential) significant differences between the news website and the query community, but only a few differences across scenarios. For example, surfers on the news website reported using the Internet more intensely for activities such as information browsing (News$_{News}$ = 4.62 vs. News$_{Query}$ = 3.58, p = .000; Product Reviews$_{News}$ = 3.11 vs. Product Reviews$_{Query}$ = 2.67, p = .018) and reported deleting cookies more frequently (Deleting Cookies$_{News}$ = 3.56 vs. Deleting Cookies$_{Query}$ = 3.06, p = .018).[50] In contrast, there were only two significant differences regarding Internet usage behavior across scenarios. First, surfers exposed to the relevance teaser and the post-hoc reciprocity teaser (scenario 1B) reported deleting cookies substantially less often than surfers exposed to the relevance teaser only (scenario 1A) (Deleting Cookies$_{1B}$ = 2.94 vs. Deleting Cookies$_{1A}$ = 3.66, p = .036) and surfers exposed to the reciprocity teaser (Deleting Cookies$_{1B}$ = 2.94 vs. Deleting Cookies$_2$ = 3.54, p = .01). Second, surfers exposed to the relevance *and* post-hoc reciprocity teaser reported socializing with new people on online platforms significantly more often than respondents exposed to the reciprocity teaser (Socializing$_{1B}$ = 2.80 vs. Socializing$_2$ = 2.31, p = .027). As deleting cookies might be considered privacy protection behavior and socializing in online communities requires surrendering some privacy, it appears that surfers in the relevance plus post-hoc reciprocity priming scenario were slightly less privacy cautious than surfers in the other scenarios.

To validate this supposition, I further explored a potential correlations and pattern in respondents' online behaviors. Specifically, I conducted an exploratory factor analysis (EFA) with regard to respondents' reported online behaviors. As can be seen in Table 51, the EFA employing principal axis factoring and Promax rotation

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(scenario 2) ($\chi^2(1)$ = .232, p = .630).

[50] The remaining significant differences included: Online Shopping$_{News}$ = 2.71 vs. Online Shopping$_{Query}$ = 1.89, p = 000; Financial Transactions$_{News}$ = 3.24 vs. Financial Transactions$_{Query}$ = 2.31, p = 000; Travel Booking$_{News}$ = 2.85 vs. Travel Booking$_{Query}$ = 2.17, p = .001; Accept Friends Requests$_{News}$ = 2.45 vs. Accept Friends Requests$_{Query}$ = 3.03, p = .006); Register for Software Etc.$_{News}$ = 1.97 vs. Register for Software Etc.$_{Query}$ = 2.59, p = .004). An overview of all reported mean values across scenarios and websites can be found in appendix XIV.

yielded 5 factors that might explain correlations among items. The first factor could be interpreted as *Internet usage for daily life* (i.e., information, consumption, and convenience). It included items such as reading news, online shopping, and carrying out financial transactions. The second factor represented *privacy protection* behavior, namely deleting cookies, deleting browser history, and checking the computer for viruses. The third factor comprised activities that relate to *socializing and interacting* online, namely registering for online communities, accepting friend requests, and socializing with new people. The fourth factor could be termed *advertising avoidance* behavior, which comprised two items, namely using an ad blocker and using a pop-up blocker. The last factor comprised activities that could be broadly classified as *registering or providing information online to receive benefits*, such as registering for free software, participating in sweepstakes, and using a loyalty card. The item measuring respondents' participation in surveys did not have a substantial loading (i.e., > .3) on any of these factors.

In contrast to my initial supposition, the EFA did not yield substantial negative cross-loadings between privacy protection behaviors and behaviors requiring some surrendering of privacy. In fact, behaviors that require sharing information with others online, such as accepting friend requests by distant acquaintances in online communities, using a loyalty card, and registering for online services, did not have any substantial cross-loading on the privacy protection factor. Only shopping via credit card had a negative standardized regression weight with the privacy protection factor of -.11. As such, my EFA indicated that even surfers who take active measures to protect their privacy do not refrain from online behaviors that require surrendering some privacy. Although this result may be somewhat biased, as the sample consisted only of surfers who willingly provided the website with information in the alleged predictive targeting survey of experiment 2, it still shows an important aspect. The result indicates that it might also be possible for websites to convince even those surfers who actively protect their privacy online to allow targeting through demonstrating that targeting

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enables other free online services they like to use. This aspect is at the core of this dissertation and will be elaborated in the subsequent discussion chapter 7.

Internet Usage Behavior	Extracted Factors				
	Daily Life: information, consumption, convenience	Privacy Protection	Socializing and Interacting	Ad Avoi-dance	Register-ing for Benefits
Browsing product reviews by other surfers	.39	.15	.15		
Reading news	.48	.29			-.16
Shopping via credit card	.82	-.11			
Paying for software, music, or movies available online.	.37		.26		.14
Carrying out financial transactions	.40			.26	
Making travel bookings	.69		-.15		.11
Deleting cookies		.83			
Deleting my browser history		.72			
Checking the computer for viruses		.47		.21	
Registering for certain online services			.35		.31
Accepting friend requests in social networks			.85		
Socializing with new people on online platforms			.87		
Using an ad blocker				.72	
Using a pop-up blocker	.11			.86	-.17
Registering to access software, music, or movies (free of charge)			.27	.19	.34
Participating in sweepstakes	-.14				.71
Paying for content	.28			-.11	.40
Using a loyalty card	.20				.50
Participating in surveys		.21			.17

Factors and factor loadings resulting from EFA through principal axis factoring and Promax rotation; only |loadings| > .1 displayed

Table 51: Pattern in Online Usage Behavior in Experiment 2

7.   Discussion of Empirical Results

Table 52 provides an overview of the results of my empirical studies. Specifically, it summarizes which hypotheses could be confirmed in my laboratory and my field experiments and which could not be confirmed. As reflected in Table 52, the goal of experiment 2 was to validate the most important results of experiment 1, i.e., the findings related to the effect of appealing to reciprocity on the acceptance of targeting in a real-world setting. To achieve this goal, I introduced two different stages of manipulation, with stage I consisting of showing surfers two different teaser texts—one of them containing an appeal to reciprocity—and stage II consisting of a less prominent post-hoc appeal to reciprocity.

Overall, Table 52 shows that the results of studies 1 and 2 are mostly consistent, with the exception of stage II in study 2, where the difference in mean values was mostly in the hypothesized direction, but not statistically significant. A plausible explanation for this lack in significance is that the post-hoc appeal to reciprocity was not sufficiently prominent, as it was nested in a relatively long text on targeting in general, whereas the stage I teaser consisted of two short, concise sentences.

In the following sections, I discuss the results of my experimental studies in detail. First, I relate the contributions of my research to the current state of the art of marketing research (section 7.1). Then, in section 7.2, I summarize the practical implications whereby I focus on outlining how websites offering free content can immediately take advantage of my results—an aspect that is particularly important to me, as the motivation for this doctoral dissertation was to reconcile the interests of the online advertising industry, in particular of websites offering free content, and consumers' concern for privacy. Like any research, this dissertation leaves some open questions, which, in turn, open avenues for future research, which I discuss in section 7.3.

Level	Hypotheses		Confirmed in Study		
			1	2 –I	2 –II
SOR	H_1:	When informed about behavioral targeting practices employed by a website, customers perceive its advertisements to be more intrusive than if not informed.	yes		
SOR	H_2:	Providing customers with a high level of control by allowing them to view and edit the information stored about them increases perceived procedural justice.	yes		
SOR	H_3:	Perceived procedural justice reduces risk beliefs.	yes		
SOR	H_4:	Risk beliefs have a negative effect on the acceptance of targeting.	yes		
SOR	H_5:	Risk beliefs have a positive effect on the perceived intrusiveness of targeted advertisements on a website.	yes		
SOR	H_6:	Perceived procedural justice increases trusting beliefs.	yes		
SOR	H_7:	Trusting beliefs have a positive effect on the acceptance of targeting.	yes		
SOR	H_8:	Trusting beliefs reduce the perceived intrusiveness of advertisements on a website.	yes		
SR	H_9:	Providing customers with a high level of control by allowing to view and edit the information stored about them in addition to asking for consent increases the acceptance of behavioral targeting compared to only asking for consent.	yes		
SR	H_{10}:	Providing customers with a high level of control by allowing them to view and edit the information stored about them in addition to asking for consent reduces the perceived intrusiveness of targeted advertisements on a website compared to only asking for consent.	no		
SOR	H_{11}:	Informing customers that targeting makes advertisements more relevant increases customers' anticipation of seeing relevant advertisements as a result of targeting practices.	no	no	no
SOR	H_{12}:	Customers' anticipation of seeing relevant advertisements as a result of targeting increases the acceptance of targeting.	yes		
SOR	H_{13}:	Customers' anticipation for relevant advertisements due to targeting practices reduces the perceived intrusiveness of targeted advertisements on a website.	no		
SR	H_{14}:	Informing customers that targeting makes advertising more interesting to them increases customers' acceptance of targeting compared to not emphasizing relevance.	no		
SR	H_{15}:	Informing customers that targeting makes advertising more interesting to them reduces the perceived intrusiveness of targeted ads compared to not emphasizing relevance.	no		

(Table continued on next page)

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(Table continued)

Level		Hypotheses	Confirmed in Study		
			1	2 –I	2 –II
SOR	H_{16}:	Appealing to reciprocity increases customers' feeling of indebtedness toward the website offering free content.	mixed	yes	no[a]
SOR	H_{17}:	A feeling of indebtedness toward the website offering free content increases the acceptance of targeting.	no		
SOR	H_{18}:	A feeling of indebtedness toward the website offering free content reduces the perceived intrusiveness of its targeted advertisements.	no		
SOR	H_{19}:	Appealing to reciprocity increases customers' perception of distributive justice with regard to targeted advertising.	yes	yes	no[a]
SOR	H_{20}:	Customers' perception of distributive justice with regard to targeting increases the acceptance of targeting.	yes		
SOR	H_{21}:	Customers' perception of distributive justice with regard to targeting reduces the perceived intrusiveness of targeted advertisements on a website.	no		
SOR	H_{22}:	Appealing to reciprocity increases customers' expectation that targeting will allow the website to continue providing free content in the future.	no	no[a]	no[a]
SOR	H_{23}:	Customers' expectation that targeting will allow the website to continue providing free content increases the acceptance of targeting.	yes		
SOR	H_{24}:	Customers' expectation that targeting will allow the website to provide free content in the future will reduce the perceived intrusiveness of targeted advertisements on a website.	no		
SR	H_{25}:	An appeal to reciprocity increases customers' acceptance of targeted advertising on a website compared with not appealing to reciprocity.	yes	yes	mixed
SR	H_{26}:	An appeal to reciprocity reduces the perceived intrusiveness of targeted advertisements on a website compared to not appealing to reciprocity.	yes		
SR	H_{27}:	Informing customers about the benefits of advertising relevance and appealing to reciprocity interact in that the total effect on (i) acceptance of targeting and (ii) perceived intrusiveness of employing both mechanisms simultaneously is smaller than the sum of the effects if each of these mechanisms were employed individually.	no		
SOR	H_{28}:	Customers' general concern for privacy increases customers' risk beliefs.	yes		

[a] Concomitant variation in cell means as hypothesized, but not statistically significant;
I = stage I manipulation; II = stage II reciprocity manipulation in experiment 2

Table 52: Summary of the Results of the Hypotheses Tests

7.1   Theoretical Implications

This dissertation examines privacy concerns in the context of targeted online advertising by building on findings from different academic disciplines, in particular marketing, social psychology, information systems research, and business ethics. In line with Culnan and Bies' (2003) quest to balance economic and justice considerations, it constitutes a first attempt to reconcile the interest of the Internet advertising industry and consumers' legitimate desire to protect their privacy by conceptualizing targeted online advertising as a social contract governed by the implicit rules of fairness. This balanced approach seems necessary in today's heated discussion of online privacy, on the one hand (e.g., Matwyshyn 2011; McDonald and Cranor 2010), and the quest for viable business models of free-content websites, such as newspapers, on the other hand (e.g., Pauwels and Weiss 2008). So far, although targeting helps websites increase their advertising revenues, the two discussions have been mostly distinct.

My research confirms that, in general, consumer privacy concerns have a negative effect not only on the acceptance of targeting, but also on consumers' attitude toward targeted advertisements, because they perceive them as more intrusive than regular advertisements. As such, my research adds further substance to Goldfarb and Tucker's (2011a) findings on targeting and obtrusiveness, because it provides an explanation of their observations. In their seminal study, Goldfarb and Tucker (2011a) suggest that privacy concerns negatively affect advertising effectiveness. Whereas Goldfarb and Tucker's (2011a) data do not enable validation by measuring the related latent constructs, my research systematically analyzes the underlying cognitive processes, in particular concern for privacy, risk beliefs, and perceived intrusiveness. Moreover, my research goes one step further by developing tangible mechanisms to alleviate the challenges entailed by privacy concerns, thereby building on social norms related to justice perceptions.

First, I find that increasing procedural justice by allowing customers to view, edit, and delete their information stored on websites results in greater targeting acceptance. Specifically, I show that consumers more readily agree to allow websites to set a cookie for behavioral targeting if procedural justice is enacted.

As such, my work addresses Matwyshyn's (2011, p. 4) request for an exploration of "models of advertising that strive to offer consumers greater information control and flexibility in reflecting their privacy preferences, including rights of data editing and deletion." My finding on the effect of giving customers the opportunity to access and edit data stored on them is not only relevant in the context of free content websites but might also be applied in different reseach contexts involving data collection and consumer privacy, for example in the field of CRM. However, the effect of providing a high level of control on acceptance was barely significant, and the effect size was relatively small. This might be explained by the fact that I did not test the high control mechanism against a low control mechanism, but only against a medium control mechanism, where respondents were still proactively informed about targeting practices and asked for an opt-in, which I considered a (normative) prerequisite for informed consent. Therefore, the small effect size should not lead to the conclusion that providing a high level of control does not constitute a suitable mechanism to drive the acceptance of targeting. On the contrary, the fact that even a relatively slight increase in control increases perceived procedural fairness and targeting acceptance emphasizes the adequacy of increasing consumer control. As such, my results confirm Culnan and Armstrong's (1999) seminal work on the role of procedural justice in addressing information privacy concerns. It is also in line with Brandimarte et al. (2010), who found that providing consumers with control over how much personal information is published induces them to reveal more information, even when the objective risks associated with disclosure do not change.

However, I was unable to significantly decrease the perceived intrusiveness of targeted advertisements through the control mechanism. Therefore, my results might appear somewhat contrary to Tucker's (2011) study, which reports that click rates on Facebook increased after the social network gave users more control over their information. This seeming discrepancy might be explained by the different temporal focuses of the studies and surfers' different levels of preexisting awareness of advertising and data collection practices. In my study,

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informing respondents about targeting practices may have lead to a sudden elaboration of potential privacy risks, because, in general, awareness of targeting practices is low (McDonald and Cranor 2010). Such elaboration of potential risks in the moment of learning about targeting practices might have constituted a cognitive disruption, which, in turn, is a proven source of advertising intrusiveness (McCoy et al. 2008). This situational effect might have offset the positive effect of an increase in perceived procedural justice and trusting beliefs on perceived intrusiveness. In contrast, most respondents in Tucker's (2011) study were probably already aware of Facebook's advertising practices, because Facebook introduced the new privacy policy after a heated public debate. Thus, at the time consumers were exposed to Facebook ads and when Tucker measured an increase in advertising effectiveness as a result of a higher level of control entailed by the new privacy policy, they most likely had already completed their risk assessment; thus, a cognitive disruption related to the advertisements was not present at that moment. Taken together, the results of my and Tucker's studies suggest that there might be an effect of providing a high level of control on advertising intrusiveness, but this effect is contingent upon several factors.

Second, I was unable to increase consumers' acceptance and decrease the perceived intrusiveness of the targeted advertisements by arguing that targeting would make advertisements more interesting. The ineffectiveness of the relevance mechanism is a surprising result because studies report that many consumers prefer relevant advertisements (McDonald and Cranor 2010; Turow et al. 2010), and advertisers often use this argument to justify targeting practices and even to collect data for predictive targeting. One potential explanation for why informing consumers about advertising relevance was not effective might be that consumers were already aware that targeting makes advertisements more interesting. However, because consumers' knowledge about targeting is limited (McDonald and Cranor 2010), this explanation seems unlikely. Rather, it appears that consumers do not believe that targeting makes advertisements more interesting, because, in general, relevance expectations have a positive effect on targeting acceptance. I even found some suggestive evidence that emphasizing advertising

relevance might increase the perceived intrusiveness of targeted advertisements. Although the respective mean differences were not statistically significant, they appeared relatively substantial, in particular among respondents with less education. This suggests that consumers may become cynical and suspicious when offered equivocal benefits, an effect that was found in a study by Ward, Bridges, and Chitty (2005) when respondents were offered discounts and personalized services for providing information to a website concurrently. Furthermore, with regard to the proven negative effect of consumers' persuasion knowledge and suspicion of marketers' manipulative intents on adverting effectiveness (e.g., Campbell 1995; Campbell and Kirmani 2000; Friedstad and Wright 1994; Kirmani and Zhu 2007), my results suggests that emphasizing advertising relevance is inappropriate to convince consumers to provide information for targeted advertising.

Third, my study shows that in the context of free content, under certain conditions, online consumers are highly concerned about distributive justice. Surfers exposed to a blatant reciprocity primer were more willing to share data for targeting purposes than those who were not. This effect was driven by a desire for distributive justice, not by a negative feeling of indebtedness. In fact, the positive effect of the reciprocity mechanisms was substantially stronger on distributive justice than on indebtedness. Furthermore, my SOR-level analyses revealed that indebtedness had a significant effect neither on acceptance nor on intrusiveness. This confirms that the two constructs of normative reciprocity and desire for distributive justice are conceptually different. Even more importantly, my research shows that the positive effect of appealing to reciprocity on acceptance is not driven by selfish motives (i.e., consumers hoping to obtain free content in the future), but by fairness considerations. In fact, whereas I found that utilitarian reciprocity, in general, has a positive effect on acceptance, the 'appealing to reciprocity' mechanism did not significantly increase respondents' expectation that targeting would allow them to consume free content in the future.

Thus, overall, my studies show that findings on pay-what-you-want pricing mechanisms (Kim, Natter, and Spann 2009) can be transferred to the online

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world. They suggest that consumers, after they are informed of the challenges related to offering free content, consider targeted advertising an alternative "online currency" with which they readily repay a website for benefits received. As such, my findings contradict McDonald and Cranor (2010), who report that while consumers are comfortable with the idea that advertising supports free content, they do not consider their data to be part of this exchange. My result regarding consumers' readiness to reciprocate is particularly noteworthy because previous research reveals that altruistic, prosocial behavior is often motivated by the desire for status and social acceptance (e.g., Greenberg 1980; Griskevicius, Tybur, and van den Bergh 2010). In contrast, my studies show that even in a fully anonymous business-to-consumer Internet environment, the idea of a self-oriented, purely rational, utility-maximizing user does not hold true. Therefore, my findings might be applicable even to contexts other than Internet advertising. In general, activating the norm of reciprocity might be a principle for financing "for-free" online business models.

My finding that consumers, in general, accept advertisements as alternative online currency has general implications for research on attitude to advertising. In light of these findings, Pollay and Mittal's (1999) established model of antecedents of attitude to advertising might be adapted. The role of advertising as a means to support free content might complement the existing distal societal macro factors in the model, such as lower cost of goods and better living. While advertising has always subsidized media content, this function appears to become more and more indispensible with the growth of the Internet and should thus be systematically considered in research related to consumers' attitude to advertising.

Contrary to the predictions of my model, the negative effect of appealing to reciprocity on perceived intrusiveness is mediated neither by fairness perceptions, nor by normative reciprocity, nor by utilitarian reciprocity. Therefore, my studies do not provide any qualitative explanation of the significant effect of appealing to reciprocity on perceived intrusiveness that I found. In fact, it does not seem that in the context of targeted advertising, appealing to reciprocity drives positive social influence, which I assumed to be a suitable force countering reactance and thus

perceived intrusiveness. An alternative explanation of the effect of appealing to reciprocity on intrusiveness might be derived from previous privacy studies examining so-called congruency. White et al. (2008) explained that attitudinal resistance to advertising is lowered when advertising messages are seen as justified. They found that reactance toward personalized advertising messages is lower (and click-through intentions are higher) when there is an explicit justification of the fit between the offer and the use of highly personal information. Similarly, Lwin and Wirtz (2007) found that privacy concerns increase if data collected is inconsistent with the business context, i.e., when consumers do not understand why the website collects information. In line with this, Kobsa and Teltzrow (2005) noted that if there are no straightforward explanations of the purpose of data collection, consumers tend to make speculations that are typically unfavorable for a website. Therefore, it may well be that the reciprocity mechanism tested in my research increased congruency, i.e., helped consumers to understand why the website wanted to collect information. As such, it might have made data collection appear more justified to them, thereby lowering consumers' reactance.

My studies also yield important theoretical insights regarding other possible influential factors of targeting acceptance and intrusiveness, which I accounted for as control variables, especially the perceived utility of a website. My studies show that consumers are more willing to accept targeting if they perceive a website as useful and surf it frequently. In experiment 1, the perceived utility of a website had a positive effect on both dependent variables. In experiment 2, I did not measure the effect of utility explicitly but conducted the experiment on two websites with different levels of popularity. The news website has a much greater reach, is visited more regularly, and has a stronger brand name than the query community. I found that the relative effect size of appealing to reciprocity instead of informing about advertising was similar on both websites; I was able to roughly double the click rate and the response rate. However, the acceptance "baseline" that could be increased through the reciprocity mechanism was substantially lower in the query community (with a click rate of .44 percent and a response rate of 9.1

percent) than on the news website (with a click rate of .85 percent and a response rate of 20.1 percent). This finding extends existing knowledge on the role of perceived utility of advertisements in influencing advertising acceptance. For example, White at al. (2008) found that reactance toward personalized advertisements is lower when consumers perceive the advertised service as useful. My results go beyond this finding by suggesting that consumers transfer the perceived utility of a website to its advertisements as the effect of utility on acceptance is mediated by relevance expectations. Consequently, it seems that consumers are more likely to accept targeting and perceive targeted ads as less intrusive on websites they deem useful because they expect that advertisements on such websites will be useful to them, too.

The effect of utility on acceptance was also mediated by reciprocity-related cognitions, indicating that consumers are even more motivated to reciprocate a website they deem useful. As such, this is not a surprising result, because in the cost-benefit tradeoff consumers perform, the more useful the free content of the website, the greater the benefit it constitutes. What is more noteworthy is that the utility of the website had a negative effect on risk perceptions. An underlying reason for this effect might be that the perceived utility of a website is strongly correlated with consumers' attitude toward that website. Thus, it appears that the more a consumer likes a website and the more frequently he or she intends to use it, the less risky he perceives providing information to that website for targeted advertising. In sum, these findings indicate that it might be most suitable for websites offering useful content to fund their operations through targeted advertising.

From a methodological perspective, my dissertation also makes an important contribution to experimental research employing priming methods. Typically, research involving priming methods to increase knowledge accessibility or concept salience employs subliminal priming techniques to avoid contrasting effects. My results demonstrate that blatant priming can be highly effective in increasing the likelihood of certain responses to a subsequent stimulus. This finding is backed by research by Wyer and Hartwick (1980), who find that the

intensity of information processing at time of knowledge activation improves knowledge accessibility, and an article by Cialdini and Goldstein (2004, p. 597), who comment on findings regarding individuals' compliance and conformity with norms by reasoning that "taken together, the results suggest that one's actions are relatively unaffected by normative information—even one's own—unless the information is highlighted prominently in consciousness." Apparently, for priming to have the desired results, it is not always necessary nor advisable to disguise the relationship between a first stimulus (e.g., teaser) and a second stimulus (e.g., request to provide information) – a finding which I could replicate even in a field setting.

In fact, a core strength of this dissertation is that it validates the findings on consumers' willingness to reciprocate online with real behavioral data with an extremely large sample size. I report real click rates, which is rare in academic literature because of the confidentiality requirements of most industry partners.

7.2   Managerial Implications

My research has several concise managerial implications. Many websites offering predictive behavioral targeting can benefit immediately from my findings related to priming reciprocity by changing their teasers when conducting predictive targeting surveys. Doing so would enable them to collect more profiles and thus offer more efficient targeting. Given that the effect of appealing to reciprocity on acceptance in the laboratory experiment was only of medium size, one could criticize the mechanisms as having only limited practical relevance. However, this is clearly not the case. In the field experiment, by employing a reciprocity teaser instead of the typical relevance teaser, I was able to increase the number of completed predictive targeting surveys on the news website and in the query community by 379 percent and 591 percent, respectively. Furthermore, the laboratory experiment shows that appealing to reciprocity can increase the number of people choosing to opt-in, or conversely, reduce the number of people opting-out of behavioral targeting. In fact, appealing to reciprocity more than doubled the

percentage of people who strongly intended to provide the website with an opt-in. It reduced the share of respondents intending to opt-out by over 25 percent. This effect was even stronger among those surfers with a high level of education, who are particularly attractive to advertisers and constitute the core readership of newspaper websites.

My findings are particularly relevant given the current regulatory pressure regarding online privacy and consumer consent through opt-in or opt-out tools. A study by Goldfarb and Tucker (2011b, 2011c) on the effects of previous tightening of privacy laws found that after the instruction of the ePrivacy Directive 2002/58/EC, which among other things put boundaries on cookie use, advertising efficiency in the EU dropped by about 65 percent—costing the industry millions of Euros, because websites either had to reduce their prices or advertisers had to pay more to reach the same level of effectiveness. They also found that the drop in effectiveness was particularly strong for websites offering general content (such as news websites) that hardly have the ability to perform other, non-data driven forms of targeting such as contextual targeting. Their findings underline that it is of utmost importance for free content websites to avert potential negative consequences of opt-in or opt-out regulations on their business model by proactively developing and testing mechanisms to address privacy concerns and to increase consumers' acceptance of targeting. Although the concept of a Do Not Track tool is at a preliminary stage, the FTC has made clear that it would push for respective legislation if the industry's self-regulatory efforts do not deliver satisfactory results. Therefore, my research provides important mechanisms to alleviate potential negative consequences of a Do Not Track tool on the funding of free content websites in the U.S.. My mechanisms should also be highly relevant in the European Union, in which member states are currently implementing the so-called ePrivacy Directive 2009/136/EC into national laws (European Union 2009). Among other things, the directive requires consumers' opt-in if websites want to employ tracking technology run by third parties, such as targeting cookies of advertising networks. After a heated debate, regulators compromised with the industry that such an opt-in may be obtained through

surfers' browser settings but that surfers must be informed clearly and comprehensively about targeting practices to allow for informed consent.

In light of my findings, critics might question whether a website should proactively inform its customers about its targeting practices as long it is not required by law. Currently, many websites do not adhere to the very basic FIP principles of notice and consent (Federal Trade Commission 2010). In fact, my research shows that surfers who were told that the advertisements shown were targeted perceived them as more intrusive than surfers who were not informed. Furthermore, although general concern for privacy did not significantly differ across treatment groups, respondents in the treatment groups reported a significantly higher general concern for privacy than respondents in the control group who did not receive any information on targeting practices.[51] As such, my research confirms Tucker's (2011) conjecture that increasing consumers' control over their information and thus increasing transparency on targeting practices may also increase the salience of privacy concerns. This might be the reason why even with my most effective reciprocity mechanism, I was unable to fully reduce the perceived intrusiveness of targeted advertisements to the level of those not denoted as behaviorally targeted. Yet, from a normative and public policy perspective, it is clear that a website should proactively inform consumers about targeting practices to allow for informed consent (e.g., Culnan and Bies 2003; Dunfee, Smith, and Ross Jr. 1999). But doing so seems advisable also from a purely commercial point of view. Consumers' privacy concerns are likely to intensify after they realize that marketers have somehow obtained information about them without their awareness or permission. For example, Miyazaki (2008) found that the detection of cookie use can have detrimental effects on a website because it decreases consumer trust, intended patronage, and positive word of mouth; however, this effect can be attenuated through clear a priori disclosure. Hiding targeting practices from consumers can backfire. In fact, Tucker's (2011)

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[51] Given this result, my research also indicates that general concern for privacy, as personal characteristic and situational privacy concerns can not always be distinguished. In fact, it seems that respondents' ratings on items measuring general concern for privacy items are—to a limited extent—influenced by situational factors.

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study suggested that advertising effectiveness on Facebook had been hampered by an intense public wariness regarding privacy practices and could be recovered only through better privacy controls. Thus, in light of my findings, expanding voluntary industry initiatives might be worthwhile. The Network Advertising Initiative (NAI), for example, informs consumers about targeting practices and offers opt-out functionalities for several participating websites. Google (2009) and Yahoo! (2011), for example, allow consumers to view information stored on their respective tracking cookies. However, some voluntary initiatives have been criticized as misleading consumers (McDonald and Cranor 2010). My research shows that websites should educate consumers truthfully and comprehensively so that they can make informed trade-offs. This might also reduce increasing regulatory attention and the likelihood of tighter privacy laws being passed.

7.3   Limitations and Potential for Future Research

Overall, my dissertation deals with a very new area of research, targeted online advertising, and is the first to systematically investigate how to address consumers' related privacy concerns. Furthermore, to my knowledge, it is the first study to apply the norm of reciprocity in the context of online privacy and free content websites. Therefore, my study naturally has several limitations that, in turn, might open avenues for further research.

First, I was able to test my hypotheses on only two websites, a news website and a query community. Although these websites differ in terms of use, brand, and audience, additional research could validate my findings in different online environments, such as social networking communities.

Second, both studies were conducted in Germany. Because privacy concerns are related to cultural values and might differ across countries (Bellman et al. 2004; Milberg, Smith, and Burke 2000), the impact of my mechanisms might differ as well. However, because the average level of privacy concerns in Germany is comparably high (Interactive Advertising Bureau 2010a), I might surmise that my findings are also applicable in other countries.

Third, I tested a reciprocity mechanism only through a Flash layer appearing on a website. There might be more effective ways to prime reciprocity in the context of advertising-supported content, such as a large-scale information campaigns by the online industry, which could be a focus of future studies. However, in this context, it might be appropriate for me to stress that subconscious priming does not appear advisable (e.g., through editorial content on newspaper websites). First, this is for the ethical reasons discussed previously and also because respectable newspapers separate their editorial and financing departments. Second, it is because subliminal priming entails the risk of reactance if users realize that a website tries to influence them subconsciously. Apart from that, in addition to exploring ways to prime the norm of reciprocity and thus increase respondents' desire for distributive justice, research could also develop mechanisms to increase consumers' motivation to reciprocate driven by utilitarian reciprocity. In fact, I found that the effect of consumers' expectation to receive free content in the future when consenting to targeting was of a strength similar to that of the effect of their desire for distributive justice. It simply turned out that my mechanism did not trigger utilitarian reciprocity.

Fourth, I was able to explain the causal link between my mechanisms and the target variables only to a limited extent. In particular with regard to the mechanism of appealing to reciprocity and the target variable of perceived intrusiveness, future research might further investigate the related cognitive processes. Such research, in turn, would help to develop even more effective mechanisms supporting websites in funding their free content through targeted advertising.

Finally, I was able to study only the short-term effects of increasing the salience of the norm of reciprocity. Therefore, an important area for research would be to study the mid- and long-term effects of reciprocity priming. Regarding the former, research could investigate how long the effect of reciprocity priming on targeting acceptance lasts. Such research would provide insights into how regularly consumers should be reminded of the advantages of targeted advertising in funding free-content. Regarding the latter, research could examine the effect of

repeated reciprocity priming. For example, does the effect diminish as consumers become familiar with and thus indifferent to appeals to reciprocity? Or, in contrast, does the effect lead to a generally increased awareness of the challenges free-content websites face, as early research on knowledge accessibility in general by Higgins, Rholes, and Jones (1977) would indicate? As accessibility can become chronic if certain knowledge is activated frequently (Förster and Libermann 2007; Wyer 2004), this could lead to a mind-set change regarding consumers' willingness to reciprocate or even pay for free online services.

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Appendix

I.   Translation of the Questionnaires

Survey Displayed in the Context of the Laboratory Experiment (Experiment 1):

German (Displayed to Respondents)	English (Translation)
Wie alt sind Sie?	**How old are you? (please select)**
14 – 19	14 – 19
20 – 29	20 – 29
30 – 39	30 – 39
40 – 49	40 – 49
50 – 59	50 – 59
60 Jahre oder älter	60 years or older
Sind Sie…	**Are you…**
Männlich	Male
Weiblich	Female
Was ist Ihr höchster Bildungsabschluss?	**What is your highest degree?**
Mittlere Reife oder gleichwertiger Abschluss[52]	High school degree
Abitur oder gleichwertiger Abschluss	University entrance qualification
Welche Tätigkeit üben Sie aus?	**What is your occupation?**
Nicht berufstätig	Not employed
Teilzeit berufstätig	Employed part-time
Vollzeit berufstätig	Employed full-time
In Ausbildung	In education
Wie hoch ist ungefähr das monatliche Nettoeinkommen des Haushaltes, in dem Sie leben?	**What is the approximate monthly net income of your household?**
Unter 250 EUR	Below 250 EUR
250 EUR bis unter 500 EUR	250 EUR to 500 EUR
[…]	…
5000 EUR und mehr	5000 EUR or above
Ich will darauf nicht antworten	I do not want to answer this question

(Table continued on next page)

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[52] Other menue items: Noch Schüler; Schule beendet ohne Abschluss; Volks-, Hauptschulabschluss, Quali; Berufsausbildung; Hochschulabschluss; Promotion oder 2. Hochschulabschluss

German (Displayed to Respondents)	English (Translation)
Unter den im Szenario geschilderten Bedingungen […]	*Given this hypothetical scenario…*
Wie stark stimmen Sie folgender Aussage zu?[a]	**Please evaluate the following statement**[a]
Vermutlich würde ich [der Website] eine Auswertung meines Surfverhaltens erlauben	I would probably allow [the website] to evaluate my surfing behavior.
Es ist wahrscheinlich, dass ich mein Einverständnis mit der Analyse meines Surfverhaltens erklären würde.	It is likely that I would consent to an analysis of my surfing behavior.
Ich wäre dazu geneigt, einer Auswertung meines Surfverhaltens zuzustimmen.	I would be willing to agree to an evaluation of my surfing behavior.
Wie finden Sie die Anzeigen auf dieser Website?[a]	**How do you think the ads on this website are?**[a]
Aufdringlich	Intrusive
Störend	Disturbing
Penetrant	Obtrusive
Ablenkend	Distracting
Bitte versetzen Sie sich in den Moment zurück, als Sie überlegt haben, ob Sie eine anonyme Auswertung Ihrer Surf-Informationen erlauben	*Please think back to the moment when you cogitated about whether to allow the website to evaluate your non-personally identifiable browsing-information*
Wie stark stimmen Sie folgender Aussage zu?[a]	**Please evaluate the following statement**[a]
Es ist fair, [die Website] dafür zu belohnen, dass sie mir ihrem Inhalt zur Verfügung stellt.	It is fair to reward [the website] for providing its content to me.
Es ist in Ordnung, dass [die Website] mich im Gegenzug für ihren Inhalt um einen Gefallen bittet.	It is okay that [the website] asks for a favor in exchange for free content.
Wenn [die Website] eine Gegenleistung von mir für den Inhalt bekommt, ist das gerecht.	Providing the website a benefit in return for its content is fair.
Es ist fair, wie [die Website] mich darüber informiert, wie sie meine Informationen nutzt.	The way [the website] provides information explaining its information-handling procedures is fair.
[Die Website] ist aufrichtig gegenüber ihren Besuchern.	[The website] is honest to its visitors.
Die Art und Weise, wie ich hier mitentscheiden kann, ist gerecht.	The way I can influence how [the website] handles my information is fair.
[Die Website] geht fair vor, was ihre Werbemethoden und Datenschutzpraktiken angeht.	With regard to its advertising and privacy practices, [the website] employs fair procedures.

[a] 7-point Likert scale from "stimme überhaupt nicht zu / strongly disagree" to "stimme voll und ganz zu / strongly agree"; [ ] = real name of website was included in item

(Table continued on next page)

German (Displayed to Respondents)	English (Translation)
Es ist angebracht, sich für die Leistung [der Website] erkenntlich zu zeigen.	It is appropriate to reciprocate [the website's] service.
Ich finde, dass ich [der Website] eine Gegenleistung erbringen sollte.	I should provide [the website] with a service in return.
Ich habe das Gefühl, dass ich [der Website] etwas schuldig bin.	I feel I owe [the website] something.
Ich fühle mich verpflichtet, [die Website] für das Angebot zu kompensieren.	I feel obliged to compensate [the website] for its service.
Ich glaube, wenn ich [der Website] eine anonyme Auswertung meines Surf-Verhaltens erlaube…	*I believe if I allow [the website] to evaluate my non-personally identifiable surfing information…*
… werde ich Internet-Werbung sehen, die relevant für mich ist.	… I will see online ads that are relevant to me.
… werde ich über die Internet-Werbung nützlich Informationen bekommen.	… I will receive useful information through online ads.
… wird die Internet-Werbung in Zukunft interessant sein.	… online advertisements will be interesting to me.
… wird es sich zukünftig lohnen, auf die Werbung zu achten.	… online advertisements will be worth paying attention to.
… besteht die Website mit ihrem kostenlosen Inhalt längerfristig.	… [the website] with its free content will exist in the long-term.
… kann ich auch in Zukunft den kostenlosen Inhalt nutzen.	… I will be able to use its free content in the future, too.
… wird mir der kostenlose Inhalt erhalten bleiben.	… its free content will persist.
Wie stark stimmen Sie folgender Aussage zu?[a]	**Please evaluate the following statement**[a]
Es ist riskant, [der Website] die Informationen zur Verfügung zu stellen.	It is risky to give the information to [the website].
Potenziell könnte ich Nachteile daraus ziehen, [der Website] Informationen zu geben.	By providing the information to [this website], I could potentially incur disadvantages.
[Der Website] Informationen zur Verfügung zu stellen, würde zu viel Unsicherheit mit sich bringen.	There would be too much uncertainty associated with giving the information to [the website].
[Die Website] ist ehrlich zu ihren Kunden, was die Nutzung ihrer Informationen angeht.	[The website] is honest with customers when it comes to using their information.
[Die Website] ist zuverlässig, was den Schutz der Informationen anbetrifft.	[The website] is reliable regarding the protection of information.
Ich kann [der Website] beim Umgang mit den Informationen vertrauen.	I can trust [the website] in dealing with my information.

[a] 7-point Likert scale from "stimme überhaupt nicht zu / strongly disagree" to "stimme voll und ganz zu / strongly agree"; [ ] = real name of website was included in item

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German (Displayed to Respondents)	English (Translation)
Wie stark stimmen Sie folgender Aussage zu?[b]	**Please evaluate the following statement**[a]
Im Allgemeinen sorge ich mich um meine Privatsphäre, wenn ich das Internet nutze.	In general, I am concerned about my privacy when using the Internet.
Ich bin besorgt, dass Angaben, die ich im Internet mache, missbraucht werden könnten.	I am concerned that information I submit on the Internet could be misused.
Ich mache mir Sorgen, dass jemand persönliche Auskünfte über mich im Internet finden kann.	I am concerned that a person can find private information about me on the Internet.
Ich bin besorgt darüber, Informationen ins Internet zu übermitteln, weil sie in einer Art und Weise genutzt werden könnten, die ich nicht vorhersehen kann.	I am concerned about submitting information on the Internet, because it could be used in a way that I cannot foresee.
Wie stark stimmen Sie folgender Aussage zu?[a]	**Please evaluate the following statement** [a]
Im Allgemeinen ist Werbung eine gute Sache.	Overall, I consider advertising a good thing.
Generell habe ich eine positive Meinung zu Werbung.	My general opinion of advertising is favorable.
Im Allgemeinen mag ich Werbung.	Overall, I like advertising.
Der Inhalt [der Website] ist für mich nützlich.	The content of [this website] is useful to me.
Ich finde das Surfen auf [der Website] angenehm.	I feel comfortable in surfing [this website].
Ich bin zufrieden mit dem Inhalt [der Website].	I am satisfied with the content of [this website].
Ich würde [die Website] häufiger nutzen.	I would like to visit [this website] frequently.
Die folgenden Aussagen beziehen sich auf Werbung im Allgemeinen (ohne Nutzung von Surf-Informationen).	*The following statements refer to advertising in general (without usage of browsing information).*
Wie stark stimmen Sie folgender Aussage zu?[a]	**Please evaluate the following statement** [a]
Es ist in Ordnung, wenn auf Seiten mit kostenlosem Inhalt Werbung ist.	It is okay if there are advertisements on free content websites.
Wenn ich für eine Website nichts bezahlen muss, ist es legitim, wenn die Website mir Werbung zeigt.	If I do not have to pay for content, it is legitimate if a website displays advertisements to me.
Ich akzeptiere Internet-Werbung, weil dadurch ein kostenloser Inhalt finanziert wird.	I accept online advertising because it supports free online content.

[a] 7-point Likert scale from "stimme überhaupt nicht zu / strongly disagree" to "stimme voll und ganz zu / strongly agree"; [ ] = real name of website was included in item

[b] 7-point scale: "überhaupt nicht besorgt / not at all concerned" to "sehr besorgt / very concerned"

Alleged Predictive Targeting Survey Run in the Field Experiment (Experiment 2)

German (Displayed to Respondents)	English (Translation)
Demographics: same as in laboratory experiment	
Wie interessant finden Sie folgende Produkte und Dienstleistungen?[a]	**To which degree are you interested in the following products and services?[a]**
Versicherungen (z.B. Haftpflicht-, Kranken- oder Rentenversicherung)	Insurances (e.g., personal liability, health, pension insurance)
Geldanlagen, Wertpapiere oder Fonds	Investment opportunities, bonds or funds
Telekommunikationstarife (z.B. DSL, Handy)	Telecommunication rates (e.g., DSL, mobile phone)
Immobilien (z.B. Häuser oder Wohnungen zur Miete oder zum Kauf)	Real estate (e.g., houses or apartments to let or to sale)
Urlaubsreisen (z.B. Last-Minute-Reisen)	Leisure travel (e.g., last minute travel)
Körperpflegeprodukte	Personal hygiene products
Unterhaltungselektronik (z.B. MP3-Player, Spielkonsolen)	Entertainment electronics (e.g., MP3-player, game consoles)
Musik oder Filme aus dem Internet (gebührenpflichtig)	Music or movies (for purchase online)
Bildungsangebote (z.B. Sprachkurse)	Education (e.g., language courses)
Autos und Zubehör	Cars and car equipment
Lokale Veranstaltungen (z.B. Feste, Sport-Events)	Local events (e.g., festivals, sports events)
Bio- oder Wellnesslebensmittel	Organic or wellness food
Stromtarife	Electricity costs
Handys oder elektronische Organizer	Mobile phones or PDAs
Utility of website: same as in laboratory experiment	
Attitude to advertisements on website: same as in laboratory experiment	
Wie stark stimmen Sie folgender Aussage zu?[b]	**Please evaluate the following statement[b]**
Im Allgemeinen sorge ich mich um meine Privatsphäre, wenn ich das Internet nutze.	In general, I am concerned about my privacy when using the Internet.
Im Allgemeinen mag ich Werbung.	Overall, I like advertising.
Es ist in Ordnung, wenn auf Seiten mit kostenlosem Inhalt Werbung ist.	It is okay if there are advertisements on free content websites.

[a] 5-point Likert scale from "überhaupt nicht interessiert / not interested at all" to "sehr interessiert / very much interested"

[b] 5-point Likert-scale "stimme überhaupt nicht zu / strongly disagree" to "stimme voll und ganz zu / strongly agree"; [ ] = real name of website was included in item

(Table continued on next page)

German (Displayed to Respondents)	English (Translation)
Warum nehmen Sie an dieser Umfrage teil?[b]	**Why are you participating in this survey?[b]**
Ich finde diese Umfrage interessant.	This survey is interesting to me.
Ich finde es fair, [die Website] dafür zu belohnen, dass ich ihren Inhalt nutzen kann.	It is fair to reward [the website] for providing its content to me.
Ich möchte in Zukunft interessantere Werbung sehen.	I would like to see online ads that are more relevant to me.
Ich möchte auch in Zukunft [die Website] kostenlos nutzen können.	I would like to be able to use [the website's] free content in the future, too.
Ich habe das Gefühl, dass ich [der Website] etwas schuldig bin.	I feel I owe [the website] something.
Ich ziehe keine Nachteile daraus, [der Website] diese Informationen zu geben.	By providing the information to [this website], do not incur disadvantages.
Ich kann [der Website] beim Umgang mit den Informationen vertrauen.	I can trust [the website] in dealing with my information.
Ich finde [die Website] geht fair vor, was ihre Werbemethoden und Datenschutzpraktiken angeht.	With regard to its advertising and privacy practices, [the website] employs fair procedures.
Wie häufig unternehmen Sie folgende Internet-Aktivitäten?[c]	**How frequently do you engage in the following online activities?[c]**
Produktbewertungen von anderen Internet-Nutzern anschauen.	Browsing product reviews by other surfers.
Aktuelle Nachrichten lesen.	Reading news.
Einkäufe im Internet per Kreditkarte tätigen.	Shopping via credit card.
Cookies löschen.	Delete cookies.
Sich für bestimmte Angebote (z.B. Shopping Communities, Foren) registrieren.	Register for certain online services (e.g., shopping communities, forums).
An Gewinnspielen teilnehmen.	Participate in sweepstakes.
Eine Kundenkarte einsetzen (z.B. Payback, Esprit).	Use a loyalty card (e.g., Payback, ESPRIT).
An Umfragen teilnehmen (z.B. Kundenzufriedenheit).	Participate in surveys (e.g., customers satisfaction)
Für bestimmte Informationen bezahlen (z.B. Wohnungsanzeigen, Artikel, Testberichte).	Pay for content (e.g., classifieds, articles, reviews)
Die Browser-Historie löschen.	Delete my browser history.

[b] 5-point Likert-scale: "stimme überhaupt nicht zu / strongly disagree" to "stimme voll und ganz zu / strongly agree"; [ ] = real name of website was included in item

[c] 5-point Likert-scale: "sehr selten / very seldomly" to "sehr häufig / very frequently"

(Table continued on next page)

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German (Displayed to Respondents)	English (Translation)
Wie häufig unternehmen Sie folgende Internet-Aktivitäten?[c]	**How frequently do you engage in the following online activities?**[c]
Für im Internet verfügbare Software, Musik oder Filme bezahlen.	Pay for software, music, or videos available online.
Sich für Software, Musik oder Filme registrieren (ohne zu bezahlen).	Register to access software, music, or movies (free of charge).
Reisen buchen.	Make travel bookings.
Freundschaftsanfragen in sozialen Netzwerken (z.B. Facebook, XING, Lokalisten) von anderen akzeptieren.	Accept friends requests in social networks (e.g., Facebook, XING).
Neue Kontakte über Online-Plattformen knüpfen (z.B. Soziale Netzwerke, Vermittlungsbörsen, Diskussionsforen).	Socialize with new people on online platforms (e.g., social networks, networking agencies, discussion groups).
Den Computer auf Viren checken.	Check the computer for viruses.
Finanztransaktionen durchführen (z.B. Online-Überweisungen, Aktienkauf).	Carry out financial transactions (e.g., money transfers, stock orders).
Einen Ad Blocker verwenden.	Use an ad blocker.
Einen Pop-up-Blocker verwenden.	Use a pop-up blocker.

[b] 5-point Likert-scale: "stimme überhaupt nicht zu / strongly disagree" to "stimme voll und ganz zu / strongly agree"; [ ] = real name of website was included in item
[c] 5-point Likert-scale: "sehr selten / very seldom" to "sehr häufig / very frequently"

Exemplary Screenshot of Alleged Predictive Targeting Survey in Experiment 2[53]:

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[53] Please not that in order to protect the confidentiality of my cooperation partner, I cannot present screenshots that document the field experiment comprehensively.

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II.   Documentation of Experiment 1: Screenshots

Introduction (Experiment Not Revealed to Respondents at the Beginning):

Subsequent Page—Respondents Asked to Imagine They Were Surfing this Site:

Presentation of Scenario (Random Displaying of 1 out of 8 Different Treatments):

Pop-up Window Opening upon Clicking on "[How does this work?]":

III. Mean Comparisons Based on Full Sample in Experiment 1

Cell Mean Comparison Regarding Reciprocity:

Treatment Condition of Cell[a]			Means of Dependent Variables per Cell	
Reciprocity	Relevance	Control	Acceptance	Intrusiveness
1	1	1	3.2	3.8
0	1	1	2.7	4.5
1	1	0	3.2	3.9
0	1	0	2.7	4.2
1	0	1	3.6	4.0
0	0	1	2.8	4.1
1	0	0	3.0	4.0
0	0	0	2.6	4.4

[a] 1 = present/ high; 0 = neutral/ medium; n = 515

Cell Mean Comparison Regarding Relevance:

Treatment Condition of Cell[a]			Means of Dependent Variables per Cell	
Reciprocity	Relevance	Control	Acceptance	Intrusiveness
1	1	1	3.2	3.8
1	0	1	3.6	4.0
1	1	0	3.2	3.9
1	0	0	3.0	4.0
0	1	1	2.7	4.5
0	0	1	2.8	4.1
0	1	0	2.7	4.2
0	0	0	2.6	4.4

[a] 1 = present/ high; 0 = neutral/ medium; n = 515

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Cell Mean Comparison Regarding Control:

Treatment Condition of Cell[a]			Means of Dependent Variables per Cell	
Reciprocity	Relevance	Control	Acceptance	Intrusiveness
1	1	1	3.2	3.8
1	1	0	3.2	3.9
1	0	1	3.6	4.0
1	0	0	3.0	4.0
0	1	1	2.7	4.5
0	1	0	2.7	4.2
0	0	1	2.8	4.1
0	0	0	2.6	4.4

[a] 1 = present/ high; 0 = neutral/ medium; n = 515

IV. Frequencies of Completed Surveys vs. Aborted Surveys in Experiment 2 by Scenario

Scenario 1A (Relevance and no Post-Hoc Reciprocity) vs. Scenario 2 (Reciprocity):

	News Website		Query Community	
Scenario:	**Relevance Teaser**	**Reciprocity Teaser**	**Relevance Teaser**	**Reciprocity Teaser**
Response	(1A)	(2)	(1A)	(2)
Complete	34	164	8	55
No Complete	138	250	176	277
Total	172	414	184	332

Scenario 1A (Relevance and no Post-hoc Reciprocity) vs. Scenario 1B (Relevance and Post-hoc Reciprocity Appeal):

	News Website		Query Community	
Scenario:	**Relevance Teaser**	**Reciprocity Teaser**	**Relevance Teaser**	**Reciprocity Teaser**
Response	(1A)	(1B)	(1A)	(1B)
Click	34	33	8	24
No Click	138	129	172	145
Total	172	162	184	169

V.   Motivation to Provide Information per Scenario by Website in Experiment 2

News Website: Motivation to Provide Information per Scenario
[Stage I Manipulation]

Construct	Scenario 1A: Relevance (n = 34) Mean	Scenario 2: Reciprocity (n = 164) Mean	Homogeneity of Variances (Levene)	T-Value[a]
Indebtedness	1.96	2.52	Yes	**-2.270 ***
Distributive Justice	3.41	3.93	Yes	**-2.002 ***
Utilitarian Reciprocity	4.11	4.49	No	-1.251 n.s.
Relevance Anticipation	2.97	2.75	Yes	.771 n.s.

[a] Accounting for variance (in)homogeneity; significance: * $p < .05$; n.s. = not significant

Query Community: Motivation to Provide Information per Scenario
[Stage I Manipulation]

Construct	Scenario 1A: Relevance (n = 8) Mean	Scenario 2: Reciprocity (n = 55) Mean	Homogeneity of Variances (Levene)	T-Value[a]
Indebtedness	2.00	2.57	Yes	-.921 n.s.
Distributive Justice	1.80	3.58	Yes	**-2.731 ****
Utilitarian Reciprocity	3.80	4.46	Yes	-1.306 n.s.
Relevance Anticipation	2.80	2.89	Yes	-.140 n.s.

[a] Accounting for variance (in)homogeneity; significance: **$p < .01$; n.s. = not significant

News Website: Motivation to Provide Information per Scenario
[Stage II Manipulation]

Construct	Scenario 1A: Relevance only (n = 34) Mean	Scenario 1B : Relevance and Post-hoc Reciprocity (n = 33) Mean	Homogeneity of Variances (Levene)	T-Value[a]
Indebtedness	1.96	2.43	yes	-1.405 n.s
Distributive Justice	3.41	3.55	yes	-.347 n.s.
Utilitarian Reciprocity	4.11	4.63	no	-1.495 n.s.
Relevance Anticipation	2.97	2.44	yes	1.352 n.s.

[a] Accounting for variance (in)homogeneity; n.s. = not significant

Query Community: Motivation to Provide Information per Scenario
[Stage II Manipulation]

Construct	Scenario 1A: Relevance only (n = 8) Mean	Scenario 1B : Relevance and Post-hoc Reciprocity (n = 24) Mean	Homogeneity of Variances (Levene)	T-Value[a]
Indebtedness	2.00	2.39	yes	-.625 n.s.
Distributive Justice	1.80	3.83	yes	**-2.739 ***
Utilitarian Reciprocity	3.80	4.53	yes	-1.207 n.s.
Relevance Anticipation	2.80	3.32	yes	-.65 n.s.

[a] Accounting for variance (in)homogeneity; significance: * $p < .05$; n.s. = not significant

VI. Overview of Requirements and Characteristics of SEM Estimation Procedures

Criterion	ML	GLS	ULS	SLS	ADF
Assumption of normality	yes	yes	no	No	no
Scale invariance	yes	yes	no	Yes	yes
Minimum sample size (t = number of parameters to be estimated)	t +50 *or* 5×t	t+50 *or* 5×t	t+50 *or* 5×t	t+50 *or* 5×t	1.5×t(t+1)
Inferential statistics	yes	yes	no	No	yes

Source: Weiber and Mühlhaus (2009, p. 56)

VII. Skewness and Kurtosis of Items in Structural Model

Item	Skew-ness	Kur-tosis	Item	Skew-ness	Kur-tosis
Acceptance 1	.55	-1.08	Procedural Fairness 1	-1.01	.66
Acceptance 2	.51	-1.10	Procedural Fairness 2	-.58	.44
Acceptance 3	.60	-1.06	Procedural Fairness 3	-.68	.28
Intrusiveness 1	-.06	-.79	Procedural Fairness 4	-.48	.08
Intrusiveness 2	-.08	-.88	General Concern for Privacy 1	-.76	-.06
Intrusiveness 3	.04	-.84	General Concern for Privacy 2	-.97	.64
Intrusiveness 4	-.06	-.82	General Concern for Privacy 3	-.81	.12
Normative Reciprocity 1	-.07	-1.04	General Concern for Privacy 4	-.92	.40
Normative Reciprocity 2	.21	-.99	Risk Beliefs 1	-.25	-.67
Normative Reciprocity 3	.81	-.45	Risk Beliefs 2	-.35	-.64
Normative Reciprocity 4	.70	-.63	Risk Beliefs 3	-.35	-.67
Distributive Justice 1	-.14	-1.07	Trusting Beliefs 1	-.36	-.37
Distributive Justice 2	-.15	-.96	Trusting Beliefs 2	-.01	-.70
Distributive Justice 3	.01	-.95	Trusting Beliefs 3	-.06	-.66
Utilitarian Reciprocity 1	-.36	-.75	Gen. Attitude to Advertising 1	-.55	-.10
Utilitarian Reciprocity 2	-.50	-.59	Gen. Attitude to Advertising 2	-.39	-.62
Utilitarian Reciprocity 3	-.45	-.66	Gen. Attitude to Advertising 3	-.11	-.89
Relevance Anticipation 1	-.14	-.98	Utility of Website 1	-.65	-.45
Relevance Anticipation 2	.03	-1.05	Utility of Website 2	-.42	-.64
Relevance Anticipation 3	.07	-1.08	Utility of Website 3	-.55	-.36
Relevance Anticipation 4	.20	-1.06	Utility of Website 4	-.14	-1.03

VIII. Effects of Control Variables on Dependent Variables in SEM Analysis

Control Variable		Dependent Variable	Std. β	Critical Ratio
General Attitude to Advertising	→	Procedural Justice	.187	**4.295 *****
General Attitude to Advertising	→	Risk Beliefs	-.091	**-2.122 ***
General Attitude to Advertising	→	Trusting Beliefs	.127	**3.287 ****
General Attitude to Advertising	→	Relevance Anticipation	.394	**9.455 *****
General Attitude to Advertising	→	Normative Reciprocity	.137	**3.109 ****
General Attitude to Advertising	→	Distributive Justice	.188	**4.325 *****
General Attitude to Advertising	→	Utilitarian Reciprocity	.145	**3.343 *****
General Attitude to Advertising	→	Acceptance	.011	.249 n.s.
General Attitude to Advertising	→	Intrusiveness	-.158	**-3.268 ****
Perceived Utility of Website	→	Procedural Justice	.352	**7.768 *****
Perceived Utility of Website	→	Risk Beliefs	-.134	**-2.903 ****
Perceived Utility of Website	→	Trusting	.288	**6.636 *****
Perceived Utility of Website	→	Relevance Anticipation	.282	**6.712 *****
Perceived Utility of Website	→	Normative Reciprocity	.375	**7.765 *****
Perceived Utility of Website	→	Distributive Justice	.338	**7.448 *****
Perceived Utility of Website	→	Utilitarian Reciprocity	.24	**5.384 *****
Perceived Utility of Website	→	Acceptance	.049	.992 n.s.
Perceived Utility of Website	→	Intrusiveness	-.251	**-4.623 *****

Std. β = standardized estimate; significance: ** p < .01; *** p < 0.001; n.s. = not significant

IX. Standardized Direct and Indirect Effect of Predictor Variables on Dependent Variables in Model

Standardized Direct Effects:

Predictor Variable	Dependent Variable								
	Ac	Int	PJ	Ri	Tr	RA	NR	UR	DJ
CONT: Control Manipulation			.093						
PJ: Procedural Justice				-.124	.406				
Ri: Risk Beliefs	-.237	.102							
Tr: Trusting Beliefs	.149	-.176							
REL: Relevance Manipulation						.024			
RA: Relevance Anticipation	.151	-.004							
REC: Reciprocity Manipulation							.097	.124	.069
NR: Normative Reciprocity	-.021	-.035							
DJ: Distributive Justice	.18	.056							
UR: Utilitarian Reciprocity	.237	.066							
AA: Attitude to Advertising	.011	-.158	.187	-.091	.127	.394	.137	.188	.145
PU: Perceived Utility	.049	-.251	.352	-.134	.288	.282	.375	.338	.24
PC: Concern for Privacy				.399					

Blanks = no specified direct causal link in structural model

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Standardized Indirect Effects:

Predictor Variable	Dependent Variable								
	Ac	**Int**	**PJ**	**Ri**	**Tr**	**RA**	**NR**	**UR**	**DJ**
CONT: Control Manipulation	.008	-.008		-.011	.038				
PJ: Procedural Justice	.09	-.084							
Ri: Risk Beliefs									
Tr: Trusting Beliefs									
REL: Relevance Manipulation	.004								
RA: Relevance Anticipation									
REC: Reciprocity Manipulation	.037	.008							
NR: Normative Reciprocity									
DJ: Distributive Justice									
UR: Utilitarian Reciprocity									
AA: Attitude to Advertising	.182	-.034		-.023	.076				
PU: Perceived Utility	.259	-.073		-.044	.143				
PC: Concern for Privacy	-.095	.04							

Blanks = no specified indirect causal link in structural model

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X. Effects of Control Variables on the Dependent Variables when Controlling for a Common Method Factor

Control Variable		Dependent Variable	Std. β	Critical Ratio
General Attitude to Advertising	→	Procedural Justice	.119	**2.455 ***
General Attitude to Advertising	→	Risk Beliefs	-.128	**-2.736 ****
General Attitude to Advertising	→	Trusting Beliefs	.128	**3.173 ****
General Attitude to Advertising	→	Relevance Anticipation	.354	**7.981 *****
General Attitude to Advertising	→	Normative Reciprocity	.087	1.825 n.s.
General Attitude to Advertising	→	Distributive Justice	.14	**3.003 ****
General Attitude to Advertising	→	Utilitarian Reciprocity	.099	**2.13 ***
General Attitude to Advertising	→	Acceptance	-.012	-.254 n.s.
General Attitude to Advertising	→	Intrusiveness		
Perceived Utility of Website	→	Procedural Justice	.286	**5.68 *****
Perceived Utility of Website	→	Risk Beliefs	-.164	**-3.325 *****
Perceived Utility of Website	→	Trusting Beliefs	.286	**6.381 *****
Perceived Utility of Website	→	Relevance Anticipation	.242	**5.38 *****
Perceived Utility of Website	→	Normative Reciprocity	.323	**6.195 *****
Perceived Utility of Website	→	Distributive Justice	.288	**5.916 *****
Perceived Utility of Website	→	Utilitarian Reciprocity	.19	**3.994 *****
Perceived Utility of Website	→	Acceptance	.027	.543 n.s.
Perceived Utility of Website	→	Intrusiveness		

Std. β = standardized estimate; significance: * $p < .05$; ** $p < .01$; *** $p < 0.001$; n.s. = not signif.

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XI. Mean Values of General Concern for Privacy, Risk Beliefs, Trusting Beliefs and Acceptance of Targeting by Demographic Groups

Demographics	Privacy concerns		Risk Beliefs		Trusting Beliefs		Acceptance	
	Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.
GENDER								
Male	5.33	1.34	4.80	1.58	3.81	1.48	2.92	1.93
Female	5.30	1.32	4.78	1.47	3.89	1.36	3.02	1.86
AGE								
14-19	4.98	1.47	4.93	1.24	4.26	1.10	3.17	1.74
20-29	5.19	1.42	4.75	1.53	3.69	1.47	2.98	1.97
30-39	5.28	1.34	4.85	1.47	3.71	1.30	2.59	1.76
40-49	5.27	1.24	4.67	1.58	4.23	1.44	3.17	1.90
50-59	5.58	1.39	4.76	1.57	3.61	1.46	3.00	2.00
60 +	5.59	1.10	4.87	1.76	3.74	1.64	3.21	2.01
EDUCATION								
High School/ No Degree	5.48	1.22	4.76	1.48	3.99	1.42	3.19	1.89
University Entrance Qualification ("Abitur")	5.18	1.41	4.82	1.59	3.70	1.44	2.75	1.90

For better comparability with results presented in 6.3.1 based on equalized sample n = 408 / 469

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XII. Respondents in Experiment 2 by Demographic Groups and Scenario Compared to German Online Population and Newspaper Audience

Demographics	German Internet Population	Average German Online Newspaper[a]	Relevance + Neutral (1A)	Relevance + Post-Hoc Reciprocity (1B)	Reciprocity (2)
GENDER					
Male	54.1%	64.1%	65.9 %	57.9 %	68.5 %
Female	45.9%	35.9%	34.1 %	42.1 %	31.5 %
AGE					
14-19	11.5%	7.8%	17.5 %	27.5 %	9.1 %
20-29	19.4%	19.3%	20.0 %	15.7 %	22.0 %
30-39	19.3%	21.4%	12.5 %	17.7 %	21.0 %
40-49	23.3%	23.0%	22.5 %	15.7 %	18.7 %
50-59	15.1%	16.2%	15.0 %	15.7 %	13.9 %
60 +	11.4%	12.3%	12.5 %	7.8 %	
EDUCATION					
High School/ No Degree	70.6%	52.7%	42.9 %	38.2 %	35.0 %
University Entrance Qualification ("Abitur")	29.4%	47.3%	57.1 %	61.8 %	65.0 %

[a] Top 3 non-tabloid online newspapers (AGOF Internet Facts 2009)

XIII. Respondents' Interests per Scenario and Website in Experiment 2

Mean Values [top rows] & SD [bottom rows] of Responses to Question: *To which degree are you interested in the following products and services?*	All	Responses by Scenario (Both Websites)			Responses by Website (All Scenarios)	
	1A, 1B, 2	Recipro-city (2)	Rele-vance (1A)	Relevance + Post-Hoc Reci-procity (1B)	News Web-site	Query commu-nity
Insurances	2.16	2.18	2.13	2.15	2.07	2.43
	1.32	1.30	1.26	1.45	1.21	1.56
Investment opportuni-ties, bonds or funds	2.41	2.40	2.59	2.33	2.46	2.25
	1.40	1.37	1.57	1.42	1.39	1.42
Telecommunication rates	2.54	2.48	2.51	2.83	2.47	2.73
	1.35	1.30	1.43	1.51	1.32	1.45
Real estate	2.51	2.47	2.46	2.67	2.38	2.85
	1.38	1.34	1.37	1.56	1.31	1.51
Leisure travel	2.90	2.84	2.63	3.29	2.74	3.33
	1.44	1.38	1.58	1.49	1.39	1.50
Personal hygiene products	2.60	2.51	2.58	2.96	2.35	3.31
	1.40	1.37	1.41	1.49	1.25	1.58
Entertainment electronics	2.85	2.77	2.79	3.20	2.76	3.12
	1.43	1.39	1.47	1.55	1.35	1.64
Music or movies (for purchase online)	2.30	2.22	2.16	2.67	2.14	2.73
	1.43	1.36	1.46	1.60	1.32	1.62
Education	2.62	2.62	2.58	2.69	2.52	2.91
	1.37	1.35	1.35	1.48	1.32	1.47
Cars and car equipment	2.45	2.35	2.71	2.69	2.51	2.28
	1.33	1.26	1.49	1.44	1.33	1.30
Local events	2.97	2.94	2.86	3.19	2.93	3.09
	1.42	1.37	1.55	1.52	1.40	1.48
Organic or wellness food	2.39	2.38	2.65	2.25	2.30	2.64
	1.41	1.38	1.55	1.41	1.37	1.49
Electricity costs	2.32	2.32	2.46	2.23	2.32	2.31
	1.36	1.33	1.39	1.49	1.34	1.44
Sample Size	**318**	**219**	**42**	**57**	**231**	**87**

XIV.   Respondents' Online Behavior by Scenario and Website

Mean Values [top rows] & Standard Deviation [bottom rows] of Responses to Question: *How frequently do you engage in the following online activities?*	All	Responses by Scenario (Both Websites)			Responses by Website (All Scenarios)	
	1A, 1B, 2	Recipro-city (2)	Rele-vance (1A)	Relevance + Post-Hoc Reci-procity (1B)	News Web-site	Query commu-nity
Daily Life						
Browsing product reviews by other surfers	3.01	3.03	3.18	2.81	3.11	2.67
	1.33	1.34	1.40	1.25	1.31	1.35
Reading news	4.37	4.42	4.34	4.22	4.62	3.58
	1.07	.98	1.21	1.29	.86	1.30
Shopping via credit card	2.52	2.54	2.53	2.42	2.71	1.89
	1.47	1.45	1.55	1.51	1.51	1.13
Pay for software, music or videos available online.	2.14	2.12	1.94	2.33	2.16	2.06
	1.37	1.34	1.24	1.55	1.38	1.37
Carry out financial transactions	3.01	3.08	3.00	2.78	3.24	2.31
	1.62	1.62	1.65	1.61	1.58	1.54
Make travel bookings	2.68	2.70	2.77	2.56	2.85	2.17
	1.44	1.44	1.50	1.40	1.45	1.27
Privacy Protection						
Delete cookies	3.45	3.54	3.66	2.94	3.56	3.06
	1.46	1.43	1.43	1.51	1.43	1.49
Delete my browser history	3.22	3.29	3.03	3.04	3.32	2.87
	1.59	1.57	1.61	1.66	1.57	1.60
Check the computer for viruses	3.85	3.91	3.97	3.60	3.93	3.63
	1.42	1.39	1.54	1.49	1.42	1.40

(Table continued on next page)

(Table continued)

Mean Values [top rows] & Standard Deviation [bottom rows] of Responses to Question: *How frequently do you engage in the following online activities?*	All	Responses by Scenario (Both Websites)			Responses by Website (All Scenarios)	
	1A, 1B, 2	Recipro-city (2)	Rele-vance (1A)	Relevance + Post-Hoc Reci-procity (1B)	News Web-site	Query commu-nity
Socializing and Interacting						
Register for certain online services	2.56	2.55	2.45	2.64	2.48	2.78
	1.28	1.26	1.37	1.34	1.23	1.42
Accept friends requests by distant acquaintances in social networks	2.59	2.50	2.77	2.80	2.45	3.03
	1.47	1.45	1.59	1.46	1.43	1.50
Socialize with new people on online platforms	2.40	2.31	2.28	2.80	2.37	2.50
	1.40	1.40	1.40	1.34	1.39	1.41
Ad Avoidance						
Use an ad blocker	3.09	3.16	3.07	2.85	3.10	3.05
	1.64	1.63	1.58	1.73	1.63	1.68
Use a pop-up blocker	3.65	3.72	3.47	3.51	3.75	3.32
	1.52	1.46	1.59	1.72	1.46	1.69
Register for Benefits						
Register access software, music, or movies (free of charge)	2.12	2.03	2.29	2.33	1.97	2.59
	1.39	1.34	1.51	1.48	1.29	1.57
Participate in sweepstakes	1.58	1.53	1.72	1.69	1.56	1.64
	.967	.91	1.14	1.07	.92	1.10
Pay for content	1.66	1.61	1.84	1.74	1.69	1.55
	1.04	.96	1.34	1.10	1.03	1.04
Use a loyalty card	1.73	1.72	1.78	1.76	1.74	1.70
	1.18	1.12	1.31	1.32	1.16	1.23
Participate in surveys	2.96	2.91	3.13	3.04	2.9	3.01
	1.07	1.03	1.06	1.20	.99	1.27
Sample Size	**318**	**219**	**42**	**57**	**231**	**87**