FULL PAPER

Media habits and their impact on media platform selection for information use

Der Einfluss von Mediengewohnheiten auf die informationsorientierte Selektion von Mediengattungen

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Abstract: Media selection processes for current information are part of recipients' daily routine. As media choices take place repeatedly, they are most likely (at least partly) habit-driven. This paper focuses on two aspects: First, based on an elaborate definition of media habits as mental scripts automatically activated, we argue that habits are important determinants of the frequency of media platform selection for information purposes. Second, we differentiate between specific and general habits. Whereas the former are restricted to stable contexts and specific information topics/domains/goals, the latter can be activated in varying circumstances and to satisfy diverse information goals. Whether habits are specific or general provides information on their applicability in everyday life. If they can be instigated in various contexts to achieve various goals, their scope and applicability is broader, they have a stronger influence on media selection. A study among mobile internet users (N = 498) supports the assumption that information use is habit-driven. Furthermore, media platform information habits prove to be rather general.

Keywords: Media habits, media choice, news media, quantitative survey

Zusammenfassung: Tagtäglich wählen Rezipienten Medien aus, um sich zu informieren. Diese wiederkehrenden Selektionsprozesse sind vermutlich (zum Teil) durch Gewohnheiten bestimmt. Im Rahmen dieses Aufsatzes werden zwei Aspekte im Zusammenhang mit Gewohnheiten näher betrachtet: Erstens wird hergeleitet, dass Gewohnheiten – definiert als Skripte, die automatisch ausgelöst werden können – wichtige Determinanten für die Regelmäßigkeit/Häufigkeit der Selektion von Mediengattungen speziell zu Informationszwecken sind. Zweitens wird zwischen spezifischen und allgemeinen Gewohnheiten differenziert. Während erstere nur in stabilen Kontexten ausgelöst werden und bestimmten Informationszielen dienen, können letztere in verschiedenen Kontexten zur Befriedigung diverser Informationsbedürfnisse aktiviert werden. Der Grad an Allgemeinheit einer Gewohnheit hat Implikationen für deren Relevanz im Alltag. Gewohnheiten, die in verschiedensten Situationen ausgelöst werden können, finden breitere Anwendung und beeinflussen Medienselektion dementsprechend umfassender. Eine Studie unter mobilen Internetnutzern (N = 498) unterstützt die getroffene Annahme, dass Gewohnheiten Mediengattungsselektion zu Informationszwecken auslösen. Zudem sprechen die Ergebnisse dafür, dass es sich um allgemeine Gewohnheiten handelt.

Schlagwörter: Mediengewohnheiten, Medienselektion, Informationsnutzung, quantitative Befragung

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1. Introduction

We listen to the radio news when brushing our teeth in the morning, read the newspaper when having a cup of coffee, check the weather report on our mobile phone before leaving the house, surf the internet once we get to the office, and watch the news on television in the evening. This might be a typical day of media reception for most people. We choose between different media platforms – television set, radio set, printed newspaper, internet-equipped computer, and internet-enabled mobile devices – many times a day in order to receive current information. This inter-media selection is the first step to further intra-media selection and reception processes, for example choosing between different media brands.

Researching selection processes is relevant especially in today's media environment: Due to new digital and mobile technologies, choices become more complex as the number of possible media sources has rapidly risen (Yuan, 2011). Thus, recipients need selection strategies which are cognitively frugal, but simultaneously offer a high chance of selecting media content that fulfills their needs. In recent years, the habit concept attracted attention in this respect. Based on definitions from social psychology, we understand habits as automatic, non-conscious mental processes saving cognitive resources by relying on gratifying past experience (e.g., LaRose, 2010). Although the body of research demonstrating the importance of media habits is growing slowly but steadily, there are still many important aspects which need to be addressed theoretically and empirically. A thorough understanding of the role of habits in media selection processes is highly important for several reasons. For practitioners, habits are important as they guarantee stable audiences: Habitual media use is not questioned anew each time, as the respective content is selected automatically. For recipients, habits are relevant to manage their daily lives: "Modern society offers a plethora of means by which people can satisfy their needs. . . . Owing to the vast number of decisions to be made during one's lifetime, one would soon be lost if one always sought to consider exhaustively the whole set of alternatives and all of their possible consequences" (Betsch, Haberstroh, & Hohle, 2002, p. 453). For communication scholars, including habits into their media choice models allows for better predictions of repeated everyday media use behavior. In this paper, we address two aspects related to the concept and role of habits.

First, even today, habits are often associated with certain gratification dimensions, mainly escapism, entertainment, pass time, and diversion (LaRose, 2010; Rubin, 1984). Frequently, habitual and passive media consumption is used interchangeably (e.g., Rubin, 1984). Whether habits also contribute to the understanding of media use for information purposes is less clear: for the most part informational media use is – explicitly or implicitly – intertwined with active behavior, foremost conscious, attentive, and purposeful reception (Atkin, 1973; Hastall, 2009) which, at first sight, seems to be incompatible with the habit concept. Based on a thorough definition of media habits which specifically focuses on the distinction between selection (activation of media behavior) and reception (execution of media behavior), we debate that media habits contribute to informational media use.

Second, little is known about the scope of habit activation. We hereby distinguish between specific and general habits (Naab & Schnauber, 2014; Verplanken & Aarts, 1999). Whereas the former are restricted to stable contexts and specific information topics/domains/goals (e.g., regarding politics, sports, or weather reports), the latter can be activated in varying circumstances and to satisfy diverse information goals. Especially media habits are assumed to be rather general in nature, as media devices are present in many different situations and may serve a wide array of goals (LaRose, 2010). Empirical evidence, however, is rare and mixed. Whether habits are specific or general provides information on their applicability in everyday life. If they can be instigated in various contexts to achieve various goals, their scope and applicability is broader and their influence on media selection stronger.

After defining media habits and discussing their importance for informational media use as well as their potential scope, we empirically test our assumptions in a survey among German mobile internet users, who represent the group of media users with the potentially broadest media repertoire.

2. Media habits and information use

In communication research, habits are discussed in various contexts, most prominently within the uses and gratifications approach (e.g., Greenberg, 1974; Rubin, 1983, 1984), but also in audience research (e.g., Webster & Wang, 1992). Nevertheless, the habit concept is seldom elaborated on theoretically. Mostly, habitual behavior is used synonymous with repeated and regular behavior or operationalized as gratifications, equivalent to entertainment and information. Recently, an elaborate understanding of media habits has been introduced to communication research: Based on social psychological definitions (e.g., Aarts & Dijksterhuis, 2000b; Gardner, 2014; Ji & Wood, 2007; Lally & Gardner, 2013; Neal, Wood, & Drolet, 2013; Neal, Wood, Labrecque, & Lally, 2012; Verplanken, 2006; Verplanken & Aarts, 1999; Wood & Neal, 2007; Wood & Quinn, 2005), communication scholars consider media habits to be automatic, unconscious mental processes (e.g., Bayer & Campbell, 2012; Hartmann, Jung, & Vorderer, 2012; Koch, 2010; LaRose, 2009, 2010; LaRose, Lin, & Eastin, 2003; Naab, 2013; Naab & Schnauber, 2014; Newell, 2003; Ozkaya, 2014; Wohn, 2012, for early definitions similar to the current one see e.g., Babrow, 1989; Rosenstein & Grant, 1997; Stone & Stone, 1990). Automaticity is defined by a lack of/low awareness and/or controllability, resulting in high efficiency and/or a lack of/low intentionality (Andersen, Moskowitz, Blair, & Nosek, 2007; Bargh, 1989, 1994; Saling & Phillips, 2007).

Habits develop from repetition (Lally, van Jaarsveld, Potts, & Wardle, 2010; Verplanken, 2006; Wood & Neal, 2007). Confronted with a new situation, individuals consciously decide which behavior is adequate to achieve their goal(s). Through repetition and perceived gratifications, a mental script is formed (Aarts, Verplanken, & Knippenberg, 1998; LaRose, 2010; Naab, 2013; Verplanken & Aarts, 1999; Verplanken, Aarts, Knippenberg, & Knippenberg, 1994; Verplanken & Orbell, 2003). Scripts are knowledge structures stored in long-term memory,

resulting from slow learning and represented as associations (Strack & Deutsch, 2004). They link internal and external context information, a respective behavioral response, and expected gratifications (e.g., Abelson, 1981; Hastie, 1981; Schank & Abelson, 1977). Thus, we define habit within this paper as *a mental script which can be automatically activated in everyday situations*. We further differentiate between two phases: *Activation* and *execution* of the behavior stored in a script.

It is undisputed in literature that habits are *automatically activated* (e.g., Bayer & Campbell, 2012; Hartmann et al., 2012; LaRose, 2010; Orbell & Verplanken, 2010; Wood & Neal, 2007). The elements of automaticity – lack of/low awareness, controllability, and intentionality as well as high efficiency – do not have to co-occur, but define automaticity independently or in various combinations (Bargh, 1990; Saling & Phillips, 2007). Specifically lack of/low awareness and consequentially high efficiency is acknowledged by habit researchers: Habitual behavior is instigated unconsciously. A deliberate decision making process is not required. Internal and external cues stored in the script initiate the respective behavior in a given situation (Bargh, 1994; Hastie, 1981; Schank & Abelson, 1977; Strack & Deutsch, 2004; Verplanken, 2006; Verplanken & Orbell, 2003). These cues include time, location, prior and parallel activities, social surroundings, or moods (e.g., Danner, Aarts, & Vries, 2008; Ji & Wood, 2007; Koch, 2010; Naab, 2013; Wood & Neal, 2007). According to the script-based definition of habits of Verplanken and colleagues, goals can also function as cues.[1]

It is less clear, however, whether the *execution of the habitual behavior* itself needs to be (mostly) automatic as well. In some publications, habits are explicitly defined by both components, automatic initiation and performance (e.g., Wood, Quinn, & Kashy, 2002). In most cases, however, no such differentiation is made (in communication research e.g., Hartmann et al., 2012; LaRose, 2009; in social psychology e.g., Aarts & Dijksterhuis, 2000a; Verplanken & Orbell, 2003, but see also Gardner, 2014; Verplanken, 2006; Verplanken & Melkevik, 2008). This is less problematic for simple behaviors often researched in connection with habits like brushing one's teeth, (unhealthy) eating, or seat belt use. Media use, on the other hand, can be a very complex, cognitively demanding behavior consisting of sub-processes, for example further selection steps (e.g., channel switching) and reception phases. In many cases and specifically when the goal is to become informed, attention and awareness during reception is required for a successful and satisfying result. This is in line with the definition of scripts. They structure how and in which order behavior is executed and contain rules on how to react to certain events. Hereby, conscious, deliberate and unconscious, automatic components can be intertwined. Scripts contain variables and slots allowing for a certain degree of flexibility. Thus, behavior stored in a script is not necessarily automatic (Abelson, 1981; Hastie, 1981; Schank & Abelson, 1977).

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1   This separates their definition from Wood and colleagues' understanding of habits. Aarts & Dijksterhuis (2000a), Naab & Schnauber (2014) as well as Wood & Neal (2007) provide thorough discussions on the goal-dependence of habits.

Separating between script initiation and execution reconciles the habit concept with informational media use. As information is a major reason for (repeated) media use, information goals and respective outcomes are likely to be incorporated in scripts as well (Naab, 2013; Naab & Schnauber, 2014). Scripts not only form in connection with rather diffuse gratification dimensions such as escapism, passing time, or diversion. Knowing that certain media platforms provide positive outcomes, in this case valuable information, and thus relying on simplified automatic, unconscious selection processes is an economic way of selection. Therefore, once an information goal exists, the habit may be triggered automatically (selection), but executed with the necessary amount of attention and awareness (reception). The following examples provide illustrations:

An individual automatically turns on the television set at eight in the evening, taking the habitual "entry path leading to the script" (Abelson, 1981, p. 723). The script then contains a second automatic selection process, namely switching to a specific news broadcast. Next, the reception phase starts. The script allots paying (close) attention to all news stories, for example to be able to converse with others about current events the next day. After the news broadcast is over, the script defines another selection phase. The individual switches through his/her relevant set of channels and stops once a specific cue is perceived, for example, a documentary on a topic of interest or sports results. Then, the next reception phase starts. A person may also have a habit for mobile devices: when waking up, the mobile device is automatically activated to check the weather report for the day and then put away again.

The two examples illustrate two important aspects. First, habits can differ in their scope. Whereas the television habit includes different information domains (news, special interest topics, or sports), the mobile device habit only focuses on one specific domain (weather report). This is pursued in the next chapter. Second, habits do not contain any assumptions on the duration of media use but only on how regular and frequent platforms are selected. Habit strength to quickly check one's mobile device for news or messages can be as strong as spending one's evening in front of the television set. Therefore, habits can predict usage frequency, but not duration. The latter depends on the execution phase of the respective behavior and the specifications within the script. Habit strength, however, refers to the automatic activation (Verplanken & Melkevik, 2008) and is foremost related to the selection phase.

3.   The scope of habit activation

It is known that a large proportion of behavior is at least partly habitual (Ji & Wood, 2007; Ouellette & Wood, 1998; Verplanken, 2006). Current results based on the above mentioned definition widely confirm that media selection in everyday life situations is partly driven by habits as well.[2] However, few studies explic-

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2   E.g., Bayer & Campbell (2012) for texting, Hartmann et al. (2012) for video game use, Koch (2010) and Naab (2013) for specific television shows and television use in general, Newell (2003) for television, web, E-mail, and instant messaging use, LaRose & Eastin (2004) and Limayem, Hirt, & Cheung (2007) for internet use in general, Ouellette & Wood (1998) and Wood, Tam, & Witt (2005) for television use in general, Peters (2007) for mobile device use, Verplanken & Orbell (2003) for a specific television show and turning on music at home, Wohn (2012) for social network game play.

itly deal with media habits and information use as defined in this paper. Neal and colleagues (2013) demonstrate that newspaper use is habit driven. Diddi and La-Rose (2006) find that news habit strength is positively related to the use of various sources across different media platforms, namely television, newspaper, and the internet. Based on the theoretical assumptions and empirical results, we therefore hypothesize:

> H1: *Habit strength is a significant positive predictor of media platform selection for information use.*

Whereas scholars largely agree that habits are important predictors of media selection, lesser consensus exists on the scope of habit activation, meaning in which situations a habit can be instigated. In this context, we focus on two aspects: context stability and the set of topics/domains/information goals for which a platform is used.

Especially Wood and colleagues define behavior as a habit only if it is repeated in stable contexts. Specific (mainly external) cues trigger the respective behavior. This also applies to the script-based definition of habits. The script develops when behavior is repeated in stable circumstances. These context factors are then linked with the respective behavior and signal the "entry path leading to the script" (Abelson, 1981, p. 723). Empirical research on situational cues is rare. According to their assumptions, Wood and colleagues find that changes in context lead to an interruption of television and newspaper habits (Wood et al., 2005; see also Ouellette & Wood, 1998). Other studies, however, point to rather context-independent habit activation *(*Naab, 2013; Naab & Schnauber, 2014; Newell, 2003). This, at first sight, contradicts the script-based habit concept. Automaticity always depends on the presence of cues to trigger behavior (Bargh, 1989). Abelson's concept of meta-scripts (Abelson, 1981) provides a theoretical basis for the reconciliation of (statistical) context-independence and habit activation. Separate scripts for different specific situations containing similar behavioral sequences can be merged to a meta-script. "While the action rules for entering these several alternatives are different, the internal scenes of each are very similar" (Abelson, 1981, p. 726).

An individual may, for example, always switch on the computer to check his/her favorite news website after dinner and form a script which connects computer use, finishing dinner, and political information. The same person may also switch on the computer after brushing his/her teeth in the morning to check the same news website as well as the weather report. This behavioral sequence forms another script associating computer use with getting ready in the morning and political as well as weather information. As the behavior stored in these two scripts is very similar, they may be merged to a meta-script. This meta-script can then be automatically instigated by all cues formerly stored in separate scripts, in this case different prior activities (finishing dinner and brushing one's teeth), and may serve different information goals (political and weather information). Verplanken and Aarts (1999, p. 106) argue in the same vain when differentiating between specific and general habits: "In the case of specific habits, the instigation cues that elicit the habitual response are confined to a well-defined and particular situation . . .,

whereas general habits are under the control of cues that appear in many different situations" (see also Aarts et al., 1998; Naab & Schnauber, 2014; Verplanken et al., 1994; Verplanken, Aarts, Knippenberg, & Moonen, 1998). Compared to specific habits, general habits have a broader scope and therefore influence people's everyday lives, in this case via media selection, to a larger extent (Verplanken & Aarts, 1999). To investigate whether media platform information habits are rather specific or general, we therefore ask:

RQ1: Does habit strength predict frequency of use independently of context stability?

RQ2: Does habit strength lead to a broader set of topics/domains/information goals for which a media platform is used?

4. Method and data

4.1 Sample and procedure

In total, 498 German-speaking mobile internet users participated in a face-to-face survey. The study was conducted face-to-face because of a rather complex and long (on average, an interview took 40 minutes; *SD* = 10.01) questionnaire which included questions on all media platforms. Identical questions for news consumption and habits were asked for each platform used for information and news. The sequence of platforms was rotated between respondents to avoid order effects. Further, a specific focus of the questionnaire, which is not part of this paper, dealt with mobile news consumption and user expectations (see Wolf & Schnauber, 2015).

Mobile internet users are defined as individuals who accessed the internet via browser or app by means of cellphone, smartphone, tablet-PC, MP3-player, or E-reader within the last two weeks. Mobile internet users potentially have the largest range of media platforms available as sources for information and news. They can choose between television set, radio set, newspaper, computer, and mobile device. Therefore, they allow for a comparison of various platforms. Quota sampling was applied to recruit respondents. The sample was based on representative quotas on gender, age, and education for mobile internet users aged 16 to 69 (Institut für Demoskopie Allensbach, 2011, see table 1). As it is mostly the case in quota samples, the number of approached participants is unknown to the researcher. Therefore, no response rate can be calculated. Interviews were mainly conducted in two regions of Germany, one rather rural and one rather metropolitan, to reflect differences in media use patterns due to urbanity. Although they are not representative for all German mobile internet users, they cover structurally different parts of Germany. These limitations – quota sampling and lacking regional distribution – have to be kept in mind when interpreting the results. As can be seen in table 1, the quotas were followed closely. The distribution of the sample followed the population parameters of mobile internet users quite well.

Table 1: Sample distribution and population parameters

	Sample (N = 498)	Mobile internet users (2011 – 9.81 million)	General population (Germany)
	%	%	%
Gender (male)	64	64	50
Education Level			
Low	19	19	36
Medium	37	39	37
High	44	42	27
Age (M (SD))	33.46 (13.36)		
16 to 29	46	44	25
30 to 54	47	49	50
55 to 69	6	7	25

Note: Education levels: Low = Haupt-/Volksschule (approx. nine years of school); medium = Mittlere Reife (approx. ten years of school); high = (Fach-)Abitur (approx. twelve/thirteen years of school). Mobile Internet users and general population parameters based on Institut für Demoskopie Allensbach, 2011.

4.2 Questionnaire

Frequency of Use. For television set, radio set, newspaper, computer, and mobile device, the frequency of use was assessed by the number of days in an average week they were selected for information and news ("How many days in average week do you use the following media platforms for information and news? It does not matter whether you use them for other reasons, e.g. for entertainment. Please specify your answer only for informational use."). Compared to other behaviors (e.g., watching "Tatort" on a Sunday evening) media use for information purposes (e.g., for surveillance/to be up-to-date on political or societal issues, or to check the weather report) is a behavior that can be performed on a daily basis. The number of days is therefore a valuable indicator related to habit strength: Stronger (general) habits should make daily use more likely. In addition, we assessed whether mobile devices were used once or several times a day. Participants only answered further questions on media platforms they used at least once a week for information purposes.

    Habit strength. Habit strength was measured by an adapted version of the *Self-Report Habit Index* (SRHI, Verplanken & Orbell, 2003, see also Gardner, Abraham, Lally, & Bruijn, 2012; Koch, 2010; Naab, 2013). Respondents rated the following items on a five-point-agreement-scale for each media platform they used at least once a week: 'Flipping open a newspaper/Turning on the television set/computer/smartphone/radio for information/news is something…' 'that I do automatically', 'I do without thinking', 'I do while thinking of other things', 'I do before realizing I'm doing it', 'I would find hard not to do', and 'that would re-

quire effort not to do it'.[3] Cronbach's α indicates adequate internal consistencies for all media platforms (table 2).

Context Stability. On a five-point-agreement-scale respondents rated whether they always use the respective media platform at the same location, at the same time, after doing the same thing(s) and while doing the same thing(s) (Naab, 2013). Thus, high agreement signifies high context stability.

Information domains. Respondents named their main source of information for nine different areas (i.e., politics and society, celebrities, economy and finance, music, culture and education, sports, regional news, traffic and public transportation, weather, and advice and consumer information). An index for each media platform was computed by counting the number of times it was named as the most important source for a topic.

Socio-demographics. Age, gender, education, occupational status, and marital status were surveyed.

5. Results

Before turning to the hypothesis and research questions, we examine the general frequency of use and domains for the five media platforms: On average, respondents use four media platforms for day-to-day information and news at least once a week (SD = 1.02). Mobile devices (96% of all respondents use mobile devices at least once a week for information and news[4]), computers (91%), and television (86%) play the leading role, followed by radio (65%) and newspaper (62%). Computers (M = 5.50 days a week, SD = 1.93; basis: only users) and mobile devices (M = 5.31, SD = 2.21) are used most frequently. Hereby, 13% use mobile devices once and 44% several times a day. Television (M = 5.17, SD = 1.92), radio (M = 5.03, SD = 2.09), and newspaper (M = 4.12, SD = 2.30) follow. On average, respondents named 3.52 (SD = 0.94) different media platforms as their main source across the nine information domains. Here again, computer (M = 1.95, SD= 1.69), mobile device (M = 1.66, SD = 1.53), and television (M = 1.74, SD = 1.53) are used for the widest variety of topics. Newspaper (M = 1.41, SD = 1.55) and radio (M = 0.99, SD = 1.00) are used for fewer domains.

Habit strength is moderate for all media platforms (table 2). Note that the basis only consists of respondents who used a media platform at least once a week for information and news.

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3   The original SRHI contains additional items on the repetition of a behavior ('I do frequently', 'that belongs to my everyday routine', 'I have been doing for a long time') and its contribution to the self-concept of an individual ('that's typically 'me'', 'that makes me feel weird if I do not do it'). These dimensions were dropped. The former is a necessary but no sufficient condition for habits and does not relate to the automatic initiation of the behavior. The latter is not an integral part of the habit concept (see also Koch, 2010; Verplanken & Orbell, 2003).
4   All respondents use the internet via mobile devices, however, not everyone for information and news.

Table 2: Descriptive statistics habit strength

	n	M	SD	α
Computer	450	2.91	0.86	.78
Mobile device	474	2.87	0.97	.83
Television	424	2.88	0.78	.70
Radio	320	3.22	0.78	.71
Newspaper	303	2.57	0.74	.70

Note: 6 items, 1 = lowest habit strength, 5 = highest habit strength.

To test the role of habits, hierarchical regression analyses are conducted with frequency of use in days per week as dependent variable. For mobile devices, we conducted an additional analysis including a split between respondents who used their mobile device once or several times a day. Results did not differ significantly from those reported in tables 3 and 4.[5] To keep results comparable between media platforms, we therefore use the frequency per day measure as dependent variable for mobile devices in the following. All metric variables were mean-centered. In a first block, the socio-demographics gender (dummy coded, 0 = male), age, and education (dummy coded, 0 = low/medium) are entered as control variables. In a second block, habit strength is entered. As can be seen in table 3[6], habit strength contributes significantly to the explanatory power of the model for all media platforms ($\triangle R^2$ between .09 and .16). Thus, the selection of news media is at least partly habit-driven. H1 is supported.

Context stability is entered in a third block. Which context factors may function as cues differs between behaviors (Ji & Wood, 2007; Neal et al., 2012; Wood et al., 2002). Therefore, location, time, prior and parallel activities are entered separately. Table 3 shows that context stability does not contribute to frequency of use for computer and mobile devices and only weakly for television ($\triangle R^2$ = .02; significant predictor: location), radio, and newspaper ($\triangle R^2$ = .04; significant predictor: time). To answer RQ1, however, the interaction terms between habit strength and context stability are relevant. As can be seen in table 4, for computer, mobile device, radio, and newspaper, the interaction terms do not improve the explanatory power of the models. Thus, habit strength predicts platform selection independent of context stability, indicating general habits. Only for television, one significant interaction can be found between habit strength and prior activity.

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5   R^2 = .25; $\triangle R^2_{\text{habit strength}}$ = .17; $\triangle R^2_{\text{context stability}}$ = .00; $\triangle R^2_{\text{interaction terms}}$ = .00.
6   In accordance with the interpretations below, table 3 contains the unconditional effects of the independent variables (block 1 to 3 without interaction terms) and not the conditional effects of the total model (including block 4).

Table 3: Hierarchical multiple regression analyses predicting the frequencies of selection of socio-demographics and habit strength

	Computer		Mobile device		TV		Radio		Newspaper	
	b	t	b	t	b	t	b	t	b	t
Block 1: Socio-demographics										
Gender (0 = male)	-0.52**	-2.94	-0.31	-1.68	0.02	0.13	-0.19	-0.86	-0.47	-1.947
Age	0.00	0.57	-0.02*	-2.28	0.04***	5.46	0.04***	5.11	0.06***	7.196
Education (0 = low/medium)	0.21	1.25	-0.14	-0.79	-0.22	-1.27	-0.20	-0.97	0.15	0.324
$\triangle R^2$	.02**		.09***		.06***		.09***		.22***	
Block 2: Habit strength										
SRHI	0.88***	8.42	1.00***	9.72	0.73***	6.47	0.74***	5.36	0.86***	5.501
$\triangle R^2$	.14***		.16***		.10***		.10***		.09***	
Block 3: Context stability										
Location	-0.14	1.55	0.01	0.12	0.21*	2.29	0.05	0.64	-0.18	-1.84
Time	0.14	1.40	0.02	0.22	0.14	1.72	0.25**	2.84	0.36**	2.94
Prior activity	0.15	1.63	0.08	0.72	0.08	0.93	0.13	1.45	0.11	0.85
Parallel activity	-0.09	-1.12	0.08	0.83	0.01	0.16	-0.13	-1.37	0.05	-0.43
$\triangle R^2$	.01		.00		.02**		.04***		.04**	
n	450		474		424		320		303	
Total *R²*	**.17***		**.25***		**.18***		**.23***		**.35***	

Note: Coefficients of the final model are presented, * $p < .05$ ** $p < .01$ *** $p < .001$.

Table 4: Interaction effects of habit strength and context stability

	Computer		Mobile device		TV		Radio		Newspaper	
	b	t	b	t	b	t	b	t	b	t
R^2 **Blocks 1 to 3**	**.17***		**.25***		**.18***		**.23***		**.35***	
Block 4: Interaction terms between habit strength and context stability										
Location	0.12	1.81	-0.06	-0.63	-0.13	-1.17	-0.06	-0.61	-0.11	-0.71
Time	-0.18	-1.42	0.12	0.83	-0.08	-0.84	-0.20	-1.68	0.19	1.06
Prior activity	0.15	1.36	-0.13	-1.11	-0.24*	-2.48	-0.10	-0.93	-0.29	-1.66
Parallel activity	0.01	0.06	0.01	0.15	0.17	-1.66	0.15	1.30	0.12	0.89
$\triangle R^2$	**.01**		**.00**		**.01***		**.01**		**.00**	
n	450		474		424		320		303	
Total R^2	**.18***		**.25***		**.19***		**.24***		**.35***	

*Note. * p < .05 **p < .01 *** p < .001.*

To probe the significant interaction, we used simple slope analysis (Hayes & Matthes, 2009). Only when habit strength is low (M -1 SD), stable prior activities significantly influence frequency of use ($b = 0.26$, $t = 2.34$, $p < .05$). For moderate (M) and strong habits (M +1 SD), context stability does not significantly moderate the impact of habit strength (moderate habit: $b = 0.07$, $t = 0.88$, p = n.s.; strong habit: $b = -0.12$, $t = -1.07$, p = n.s.). Thus, although the interaction is significant, it also points at the context-independence of at least moderate and strong habits. Figure 1 illustrates the results.

Figure 1: Simple slope analysis of 2-way-interaction between habit strength and context stability (prior activity)
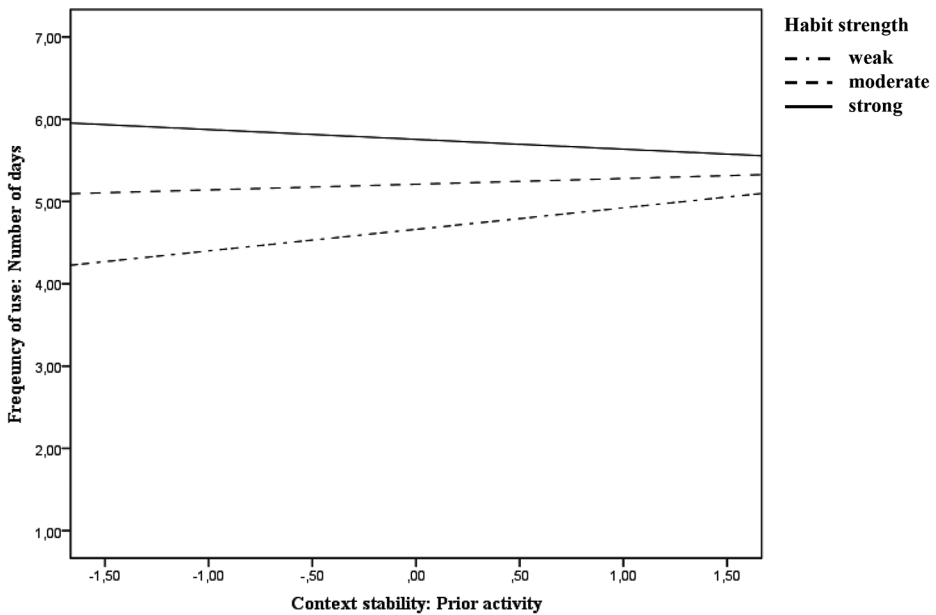
Notes: Context stability is mean-centered with negative values indicating below average and positive values above average context stability. Weak habit (M -1 SD), moderate habit (M), strong habit (M +1 SD). Significance of interaction term $p < .05$

To answer RQ2, partial correlations between habit strength and the number of domains for which the respective media platform is used are computed. Next to the socio-demographics age, gender, and education, the frequency of use is controlled to identify the unique contribution of habit strength over and above frequency measures. Habit strength correlates significantly and positively with the number of domains for which a media platform is used ($r_{computer} = .17$, $p < .001$; $r_{mobile\ device} = .26$, $p < .001$; $r_{television} = .16$, $p < .01$; $r_{radio} = .13$, $p < .01$; $r_{newspaper} = .09$, $p < .05$). In line with the results on the context-independence of habit activation, this also points to rather general habits; stronger habits align with diverse domains/goals.

6. Summary and limitations

Recently, the habit concept has attracted scientific interest in communication research. The growing body of literature and empirical studies points to the high relevance of habits for media selection in everyday live. This paper adds to the stock of knowledge by showing that habit strength is a significant predictor of media platform selection for information and news in a sample of mobile internet users. Whereas information use usually requires a motivated and attentive reception, recipients may still rely on automatic, unconscious selection processes once a habit is formed.

By differentiating between specific and general habits, we furthermore explicitly deal with the scope of habit activation. Whereas specific habits are bound to stable contexts and/or specific information goals, general habits may be regarded as meta-scripts, merging separated specific scripts containing similar behaviors. They can be instigated by all cues formerly associated with the specific scripts and incorporate different goal dimensions. Therefore, their applicability is higher in everyday life; they exert a stronger influence as they are not bound to specific circumstances. Our empirical results show that informational media platform habits may be regarded as general. They are instigated independent of context and serve various information goals. Interestingly, context stability predicts frequency of use independent of habit strength for television, radio, and newspaper, although the explained variance is rather small (2% for television and 4% for radio and newspaper). One explanation may be that information goals are active in specific circumstances more often than in others (e.g., a person always wants to know what is new in the morning after waking up at home). This leads to media use, irrespective of the level of habit strength, and is indicated by the main effect of the stability of certain contextual cues. Information goals are, however, not restricted to these specific situations, but can be active in different surroundings, at different times etc. This is reflected by the significant main effect of habit strength in combination with the non-significant interactions for four out of five platforms as well as the insignificant simple slopes for moderate and strong television habits. The influence of habit strength on frequency of use is largely independent of context stability.

Our results encounter some limitations. First of all, representativeness of the sample is restricted as quota sampling, no random sampling procedure was applied, and interviews were conducted in two regions of Germany, thus not covering the entire country. The two regions, however, differ in their structure, one being rather metropolitan and the other rather rural. Therefore, different important features are covered. Nevertheless, validation of the results using random sampling and nationwide coverage is necessary. Second, it is challenged by some researchers as to whether unconscious processes such as habits can be measured explicitly by a self-report scale (e.g., Hefner, Rothmund, Klimmt, & Gollwitzer, 2011). Results from studies on habit measurement, however, suggest that the SRHI produces valid results (Verplanken, 2005, 2006; Verplanken & Orbell, 2003). Furthermore, the SRHI mingles automatic initiation and automatic execution of the habitual behavior as its inventors did not clearly make this distinction.

With a slight adaptation of the wording and the use of only those items related to automaticity, we tried to focus more explicitly on the automatic initiation, which is central to our understanding of media habits. Third, we did not measure variables relevant in deliberate/volitional decision making (e.g., following the reasoned action approach, Fishbein & Ajzen, 2010). However, it is assumed that media use is seldom completely controlled by habits. Rather, a combination of both, deliberate decision making and habits, seems plausible (LaRose, 2010). We cannot directly compare the impact of the two routes. Results from other studies indicate that habits contribute in addition to deliberate process constructs when explaining behavior (Ji & Wood, 2007; Klöckner, 2005; Newell, 2003; Ouellette & Wood, 1998; Verplanken, 2006). Thus, it seems plausible that the results obtained in our study would persist even when controlling for more rationale elements. Future research should aim at combining both, measurements of habitual as well as deliberate processing. Fourth, our frequency measure only captures how many days a week a media platform is selected for information purposes, but not how often per day. One might argue that the mere number of days is a rather rough indicator and reduces variance in the dependent variable: strong habits should not only lead to using a platform on more days, but also more times per day. A proxy for the actual number of selection processes per day (once vs. several times a day) was only available for mobile devices. However, including this variable, results in general and the impact of habit strength in particular did not change. Still, future studies should include refined measures of selection frequency, for example by way of diary studies.

7. Conclusion

In some respects media habits differ from other habitual behavior. Reasons for this lie in the rather complex nature of many media behaviors as well as their strong association with many areas of everyday life. Defining habit as a mental script which can be automatically activated allows for an integration of different forms of media behavior into the habit concept, for example information use as in this paper. The decisive element, the automatic activation, unites all habits, irrespective of the organization of the subsequent behavior. The integration of media platform information habits into everyday life is shown by their context-independent activation and their applicability to different domains/goals. There may be two reasons for this wide scope: First, unlike other behaviors frequently researched, for example brushing one's teeth or seat belt use, most media use is not restricted to specific situations. Once established, media habits – unlike most other habits – can influence behavior outside the initial context, thus in less familiar situations as well (Naab, 2013; Naab & Schnauber, 2014). Second, even when consciously taking decisions which media platform to use, individuals have to rely on information stored in long-term memory. More salient information will be retrieved easier and influences decision making in any given situation (Strack & Deutsch, 2004, 2012). As media platform information habits are most likely

executed frequently (on a daily or weekly basis)[7] and thus highly salient, habit strength may be seen as an indicator for the ease of recalling the selection of a media platform as an effective means of solving a problem, for example when looking for various kinds of information.

Habits are bounded rational. Going through a cognitively effortful decision process anew each time is rationally ineffective as the (cognitive) costs would outweigh the benefits (Simon, 1957). Here, a connection between habits and heuristics becomes apparent: Habits and heuristics are sometimes even used synonymously in literature (e.g., Aarts et al., 1998; Ernste, 1998; Kahneman, 2003). Both have in common that they need few cognitive resources and motivation. They are, however, distinct concepts. Heuristics may be defined as "cognitive shortcuts to make a decision" (Marewski, Galesic, & Gigerenzer, 2009, p. 103), meaning they are simple, fast decision rules (Gigerenzer, Todd, & ABC Research Group, 1999; Kahneman, Slovic, & Tversky, 2001; Payne, Bettman, & Johnson, 1993; Tversky & Kahneman, 1974). Based on this decision, a specific behavior may be executed. Habitual behaviors, on the other hand, are automatically activated. Thus, habits do not require a decision-making process. Compared to deliberate selections – whether formed heuristically or systematically – the performance of habits is not questioned as it is activated automatically, resulting in more stable media use patterns. This, however, does not imply that recipients are unable to control their habitual response and take a conscious decision. Following the dual system paradigm, habits can be overcome, but only if motivation and ability are high (Saling & Phillips, 2007; Strack & Deutsch, 2012): "In . . . everyday settings . . ., people typically do not have sufficient self-regulatory resources to carry out intentions that conflict with established habits" (Wood & Quinn, 2005, p. 60). This is sometimes negatively evaluated, especially for bad habits (Hartmann, 2009; Quinn, Pascoe, Wood, & Neal, 2010; Wood & Neal, 2007). Bad habits go against an individual's attitudes, values, or norms. In this case, low controllability may result in negative life consequences as they reduce well-being and can turn into addictions (LaRose, 2009; LaRose et al., 2003). However, in the case of good or even socially desirable habits – for example information habits as a major source for political knowledge – this automaticity in media use leads to positive consequences for the individual as well as society. Even under unfavorable circumstances, strong habits are executed, guaranteeing that an individual stays informed (see also the results from Neal et al., 2013). This paper contributes to the growing body of literature on the importance of habitual selection for communication research. By showing that habits are important determinants of informational media use, this positive side of the habit concept is supported.

Still, many relevant aspects on the role and function of habits are open to research. Two of those directly related to this paper will have to be addressed in future studies to support the assumptions based on the current survey. First, we argued that whereas the selection can be automatic and thus unconscious, the

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7   This does not necessarily have to apply to all habits. Some habits, e.g. watching the super bowl, may be performed only once a year, but still on a regular basis. The defining element of habits is not frequency, but the automatic initiation of the behavior stored in a script.

subsequent reception may be involving and attentive (see also Levy & Windahl, 1984). Empirical research on the relation between habitual selection and attention during reception, however, is lacking. Second, a deeper understanding of habit activation requires research on the situational level: Selection processes are influenced not only by inter-individual factors as assessed in the vast majority of empirical studies on habits, but also by intra-individual variables (Gardner, 2014), for example the presence of cues in a given situation as well as motivation and ability. Multilevel approaches combining these two levels, for example using diary studies, are needed to detangle the effects of stable and situational influences on media selection and the impact of habits.

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