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Advancing Human-Object Relationship Theory: An Exploration of Relationships Between Consumers and Digital Voice Assistants

Abstract:

Drawing on human-object relationship theory, this paper reports on an exploratory study that examines the interactions and relationships that users have with their digital voice assistants. Twenty users were interviewed individually and in depth to understand usage and motivations, personal experiences and connectedness, emotional responses, and relationship development over time. Deductive-inductive coding analysis revealed several themes and categories that characterize individual value creation, attachment and rational and emotional responses in the user-device interaction. Building on these, distinctive types of relationships were derived that users form with their digital voice assistant. Overall, the results support the functional and efficiency benefits that users perceive. However, the findings also indicate that there are certain relationships that users establish with their voice assistants, which differ in intensity and quality. The paper contributes to relationship theory and its application to the human-object context. It is one of the first to consider digital voice assistants as social companions with which users form attachments and build relationships. The paper concludes with a look at implications for management and future research directions.

Keywords: Digital voice assistants, consumer-object relationship, relationship types, interaction values

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1 Introduction and outset

Studies indicate that in developed countries, a significant proportion of the population owns smart speakers such as Apple's Siri or Amazon's Alexa (e.g., Kinsella, 2021, 2022). The rapid advancement of technology provides tailwind for **digital voice assistants (VAs)** being increasingly integrated into the private sphere and everyday routines of consumers (Jones, 2022). Not surprisingly, researchers have turned towards understanding consumers' use, adoption, and interaction with these devices. In doing so, research has revealed that—in addition to their functional advantages—the resulting experiences and fulfilment of consumer-specific goals are gradually transforming the meaning and value ascribed to these human-like devices by users, at times even enabling them to **form emotional bonds and relationships** (e.g., Hsieh & Lee, 2021; Marriott & Pitardi, 2021; Schweitzer et al. 2019). However, only a few empirical studies exist which address users´ ability and willingness to build relationships with such devices. Knowledge regarding the meanings, thoughts, and emotions that users associate with their VAs is still quite limited, although **insights into such relationships are needed** to assist marketers in the context of this novel medium (Jones, 2022). Against this background, this paper reports on an empirical investigation exploring the nature of relationships between consumers and digital VAs, with a view to developing a typology of relationship types in this context.

2 Basic concepts, research streams and research questions

VAs are devices that incorporate some form of intelligent speech technology to help people perform various tasks. Supported by AI technologies such as natural language processing and machine learning, users can interact with them using natural language (Chen et al., 2023). As conversational agents they are able to engage in human-like conversations by interpreting human speech and responding verbally through synthesized voices (Hoy, 2018). Today, they have been expanded into the home environment with standalone devices such as Amazon Echo, Google Nest and Apple Home Pod (Jones, 2022). Although each of these Internet-enabled systems has distinctive features, the core functions are very similar, including activities such as setting timers, playing music, shopping online, controlling other devices or conversational functions such as humorous replies, or telling jokes (e.g., Ki et al., 2020).

In order to explore user-VA-relationships, a literature review was conduced on (1) customer interactions with VAs and (2) relationship types. Research on customer interactions with VAs roughly falls into two strands. **A first strand** examines user interaction with AI-based assistants from the perspective of technology acceptance and usage models (e.g., Davis, 1989). The focus is on the utilitarian role and functional support provided (Jones, 2022). However, hedonic benefits such as enjoyment, instant gratification, and overall satisfaction are also acknowledged (e.g., Ewers et al., 2020). Depending on user-related characteristics, interaction experiences may be influenced by symbolic benefits such as prestige that result from the feeling of being technologically advanced (e.g., Ling et al., 2021). Trust and privacy in user interactions have become other important issues in this strand of research (e.g., Ewers et al. 2020)**. A second strand** of research highlights the social utility, a category that relates to the social attractiveness and communication of digital VAs (Choi & Drumwright, 2021; McLean & Osei-Frimpong, 2019). Voices from this area of research suggest that device interaction and satisfaction is also influenced by the social presence of such voice-controlled and human-like systems (Schweitzer et al., 2019; Xu & Li, 2022,). Grounded in the “Computers are Social Actors” (CASA) paradigm (e.g., Reeves & Nass, 1996), researchers argue that humans have strong social needs and therefore tend to anthropomorphize technology (e.g., Gambino et al., 2020).

Research on **relationship types** confirms that some people perceive devices such as VAs as social actors with whom they can establish para-social relationships and form emotional bonds (Hoffman & Novak, 2018; Hsieh & Lee, 2021; Xu & Li, 2022). Novak and Hoffman (2019) derive relationship styles (e.g., partner style)

that explain the nature of consumer interactions with smart devices and their evolution over time. A similar view is taken by the work of Schweitzer et al. (2019) who identify three types of human-object relationships (e.g., servant-master). Alabed et al al. (2024) introduce a relationship taxonomy based on self-congruence and self-AI integration (e.g., functional). Overall, this area of relational research suggests that the regular use of digital VAs and their anthropomorphic properties have influenced the way people perceive and engage with their devices (Marriott & Pitardi, 2021), in some cases leading users to view their VAs as social companions (Zhang et al. 2024, Schweitzer et al., 2019; Tschopp, Gieselmann & Sassenberg, 2023).

All in all, most of the research to date has addressed the functional and hedonic perspective of VAs. Only a few researchers have looked at VAs as social companions with which users build relationships. As a result, integrative knowledge about the emotional bond, the meanings associated with VAs, and key relationship dynamics is still scarce and underexplored (Alabed et al., 2024; Hsieh & Lee, 2021; Schweitzer et al., 2019). Based on the sketched picture, we focus on the following two research questions:

RQ 1: How can the human-object relationships between consumers and digital VAs be defined?

RQ 2: What are the dynamics of these relationships as they develop in response to ongoing interactions?

3 Study

3.1 Methodology

As the study sets out to explore the nature, emotions, and subjective experiences related to the user-VA interactions, a **qualitative** research lens using semi-structured in-depth interviews was adopted. The pre-tested guideline was organized into several sections, encouraging the interviewees to provide insight into their (i) reasons and motivations for adopting and using a VA, (ii) their perceptions about the VA, (iii) interactions and experiences with the VA, as well as evaluations of the interactions with the VA as human-like, (iv) their emotions and perceived relationship-characteristics, (v) any evolution of relationships over time in terms of frequency of use, interaction style, and perceived attachment, and, (vi) interviewees´ views on recommending the VA to others, desired changes and their openness to promotional activities through the VA.

A purposeful **sample** of 20 individuals from Germany was used, including two pilot interviewees. 11 of the sample were female, and participants´ age was between 17 and 60. The types of VAs used by the participants covered Alexa, Google, Siri; and the VAs were most used on a daily base. The participants were selected on the basis of two qualifying criteria: a female or male person who a) owns one or more digital VAs and b) uses them regularly, meaning at least a few times a week, in everyday life. Criteria such as age, education level, or occupation, however, did not matter in our selection process. The compliance with the two qualifying criteria was checked with an online questionnaire sent out in advance. Specifically, this questionnaire looked at a set of questions on demographics, personality, technological affinity, usage patterns, and general attitudes toward VAs, used to better frame interviewee-specific statements, and it also served as language cues for the subsequent interviews.

For data analysis, the audio-recorded material from the interviews was transcribed and anonymized, and interview-specific information from the questionnaire on the socio-demographics and background data were added. The data were then systematically (deductive-inductive) coded using MAXQDA software, applying a two-stage procedure in which first the basic coding and then a further development of the categories was carried out (Silverman, 2021). The final coding system is shown in Appendix 1.

3.2 Results

The analysis identified themes and categories forming the basis for relationship types. An overview of key categories and characteristics are given below, along with a typology of relationships between users and VAs.

3.2.1 Interdependence of user and VA

Most users perceive their VA as a constant and integral component of their daily lives, **integrated into certain routines** and activities; the regularity of VA use was high. Furthermore, it emerged that the functions of the VA have become an **internalized routine**, to the extent that users even perceive a lack of availability as a disadvantage, for instance when on holiday. In some instances, the interaction with the VA has become **automated**. The process of habituation results in users becoming dependent on the luxury of having and convenience of using the VA. *When you're lying in a hotel room somewhere, you always realize how quickly you miss it and how much you've gotten used to it, because it's just such a routine, such a reflex almost (Interview 11)*. However, the interaction routines vary depending on the use case and circumstance. The extent and intensity of interactions ranges from the utilisation of a limited number of functions to the construction of an entire system around the personal virtual assistant, which may be considered a smart home.

The desire for **efficiency** emerged as a significant factor influencing the use of these technologies. As might be expected, the exploration of new functions is contingent upon users having sufficient time, a clear need to improve, and the capacity for patience.

Moreover, the data indicate that users perceive the **distribution of power to be rather asymmetric**. In terms of their role in the interaction, users tend to view themselves as the primary decision-maker, while the **VA is typically seen as a subordinate entity** that carries out orders without questioning or rejecting them. The VA is thus regarded as a functional instrument in the form of a **personal assistant**, comparable to a servant or helper whose sole objective is to provide assistance to the user. In addition, **a genuine, human-like conversation is typically absent** due to the perception that it is superfluous and does not contribute value.

3.2.2 Affective components of interactions

There were several **emotion-related angles** that emerged from the data. As already evident, there is a bond established between users and VAs that stems from the **utility** (esp. convenience and efficiency) that unfolds during the interaction. However, VAs also **add value through entertainment and encouragement** (by playing music, telling jokes, or providing games), specifically when informants are bored or lack company. In addition, the data indicate that VAs can **provide a sense of well-being** in terms of comfort and safety through control of blinds, for example. Appendix 2 summarizes all **(functional and affective) values added** angles that emerged from the analysis.

The values added in everyday life can **elicit emotionally charged reactions** in the form of attenuated feelings of happiness, relief and general satisfaction, as evidenced by the data. In particular, tech-savvy male informants reported experiencing positive emotions, such as pleasure and enjoyment, when interacting with the VA. However, there are also ups and downs, as in many real-life relationships. Since users often take smooth communication and correct execution of their commands for granted, occasional complications can lead to negative emotional reactions such as frustration, anger and disappointment, particularly if users feel their commands have been misunderstood and are required to repeat them on multiple occasions: … *you can really get upset about it, to say the least (Interview 11).*

In addition to the aforementioned emotional responses, users agree to not exhibit any personal or emotional attachment to the VA itself. The data suggest that the personal level of interaction with a VA is entirely disregarded and considered as rather neutral, and that **no feelings are conveyed**. **No indication was found that users tend to anthropomorphize** the VA. Although VAs might convey anthropomorphic traits to some degree (through a warm voice and acquired manners), the data support that the technology is insufficiently advanced to enable users to perceive a truly humanized relationship with VA. Moreover, the users mention that deep feelings can only be attributed to humans.

3.2.3 Temporal characteristics of interactions

The emergent themes for the temporal dimension can be depicted according to three phases:

(1) Awareness and buildup: In many cases, users make a conscious decision to initially acquire or use the VA. Significant **starting points** were **individual** curiosity and a desire to keep up-to-date in terms of technology, on the one hand, and practical reasons (sometimes with the sole intention of using it as a speaker for music, but then started using the voice function for convenience), on the other hand. In contrast to that, VA usage was in some cases **externally imposed**: purchase initiated by children, given to the user as a gift, or after moving in with a life partner and combining households, a VA was part of the daily reality.

In terms of users´ **initial attitudes** to the VA, two opposing categories emerged. One was a more open and unbiased, even curious approach to the technology. The other category referred to a critical or skeptical position. Users initially considered the VA to be superfluous or questionable in terms of data security.

Users familiarized themselves quickly with its functions via trial-and-error. The subsequent establishment of the relationship can be characterized by **three different patterns**, taking into account how frequency and intensity of use as well as the perceived attachment to the VA evolve over time:

- **Intensified**: a development that is perceived to become stronger and more intense over the course of ownership, often related to an expansion of functions and a greater appreciation of the possibilities offered by the device: *I was open to it from the start and said, okay, let's see what this thing can do and how it can help you. And yes, that's how it developed, and then more and more functions were added, where I realized that they could help me (Interview 11).*
- **Constant**: a development in which users first learned about the features of the VA and discovered certain use cases for themselves, but then did not change much since then: *I think with Siri, once I got into it and figured out what the options were, I got stuck on that level (Interview 13)*.
- **Cooled down**: a development in which the frequency of use has decreased over time after users have initially tried out more and have found specific use cases: *I really only use it now where I need it and where I know it works … Accordingly, I would say that I definitely used it more in the beginning than I do now (Interview 9).* Hand in hand with this, attachment to the VA has also decreased and any initial euphoria has diminished.

(2) Consolidation: Analyzing the data for how the relationship further developed, person-related factors (that could not be influenced) vs. function-related factors (that could be adapted through further technical developments or marketing measures) were isolated. **Person-related factors** are mostly reflected in a change in the user´s living situation: moving, marriage, children, job-changes. **Function-related factors** entail categories like technological progress, the processing of collected data to improve the VA´s performance, usability, and understandability, or new and more distinctive features.

(3) Breakdown: The data did not provide much insight into the dynamics associated with relationship dissolution or failure, as none of the informants actually thought about ending the relationship at the time. However, several **relationship stressors** were mentioned that could hypothetically cause users to stop using

their VAs. The categories that emerged were: (i) degradation of functionality, understandability or usability, (ii) compromised security, data misuse or data passed to third parties and (iii) the use as a marketing channel, as it would be *“super annoying” (Interview 6).*

3.2.4 Typology of relationship patterns

Based on relationship theory (e.g., Fournier, 1991; Levinger, 1983) and the findings of the current study, a typology of consumer-object relationships for VAs has been established. Table 1 illustrates the types, organized with decreasing intensity and quality from top to bottom.

Table 1: Typology of relationship types emerging from the data

Type	**Description**	**Interview Example**
(1) Everyday personal assistant relation	This relationship is characterized by a high use and integration of the VA into the private sphere, leading to an intense, partnership-like functional relationship in which the VA accompanies the user in everyday life. The resulting habituation and extreme value perceived through the interaction leads to high importance and rational attachment. To further increase the value, efforts are made to expand the functions and increase the functional benefit. In this view, users are characterized by an overall positive and relaxed attitude.	Interview 11 Interview 18
(2) Instrumental relation	This relationship is a very neutral, more or less intense purpose-driven relationship, where users value the functional benefits and the resulting emotional arousal they experience during use. This may take the form of convenience, well-being, or entertainment. Although these users perceive some degree of habituation, they experience only moderate levels of dependency and place less importance on their VA. Some of these users are critical of data security, but tend to value its benefits more than the concerns.	Interview 6 Interview 7 Interview 9
(3) Aspirational relation	This type is characterized by a buddy-like relationship in which the user sometimes interacts with the VA beyond the functional level, indicating a relatively equal symmetry of the relationship through the exchange of data in return for support. Overall, this attitude is based on technology and science fiction enthusiasm, familiarity, positive experiences, and a desire to have a virtual friend with the help of technological development. Nonetheless, this relationship is based on a rather limited use and a lower level of attachment.	Interview 14
(4) Frustrated purpose relation	This relationship is characterized as a pure purpose relationship, where users value functional utility. Indifferent to other forms, however, the relationship is negatively charged by high frustration and deep disappointment with the state of art, sometimes leading to avoidance behavior. Despite this negative attitude, the user maintains the relationship with a moderate to low degree of dependency, resulting in a rather toxic relationship.	Interview 2
(5) Distrust relation	This type can be described as rather dysfunctional relationship, as users adopt a very critical, distanced attitude. While they appreciate the benefits, they do not consider the VA as trustworthy and therefore keep their distance. In extreme cases, users within this type limit their use to avoid dependence or a feeling of habituation, even reject any emotional	Interview 16 Interview 12

	attachment or response as a result of use and, in some cases, question the notion of a relationship.	

4 Main contribution and managerial relevance

The study defines and deepens the understanding of the various human-object relationships that users establish with their digital VAs and how these evolve through ongoing interaction. Valuable implications for the future development of VAs and the implementation of appropriate communication measures can be derived. As the findings indicate that the relationships can be strengthened through positive experiences and satisfaction with the functionality and performance of the VA, it is important for marketing practice to give users more value-adding interaction experiences. With the users´consent, this could be achieved through a certain degree of personalization, offering users more tailored functions and content to increase the relevance and added value of this medium. By providing higher contextual relevance and making the VA more emotionally engaging, users could ultimately place a higher attachment to their VA, which may lead to a change in the affective nature of the relationship. This could even be enhanced by the advancement of the technology, enabling users to engae in human-like conversations and extend VA interaction beyond a functional level. Through the intensive interaction, users could increasingly disclose personal information and build trust in the VA's capabilities, so that they see the VA not only as a helper or servant, but also as a friend and reference person, making them more receptive to marketing influences conveyed. However, these measures must be implemented with caution and user consent, as research shows security concerns, particularly about personal data, remain high.

5 Limitations and future research

Since the aim of qualitative research is to gain comprehensive and descriptive insights into the different dimensions of the research subject, it is not designed to provide generalizable or quantifiable statements (Queirós et al., 2017). Future research is needed to verify and possibly expand the resulting typology of different relationship types. In this context, a separate research question should examine in more detail the extent to which personal factors may influence the direction of these relationships. In addition to aspects such as demographics, personality, or affinity for technology, cultural differences and perceptions of society's general attitude toward the topic should also be taken into regard. This is important because this study also found that societal acceptance of VAs is often viewed very critically and could influence participants' responses by exerting pressure to provide socially acceptable answers. This is reflected in the statement of one participant who is worried about being labeled as a "freak" because he wants to interact with his VA beyond functional use. As this is a very sensitive topic, anonymous research methods for data collection, such as anonymous diary entries, could address this issue. At the same time, these methods could potentially mitigate biases, as interview participants sometimes omitted or forgot about certain interactions, or never thought about some aspects, such as their attachment and importance to their VA.

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Appendix 1: Coding scheme

Code	Subcode	Definition	Example
Category: Relationship Building			
Device Adoption	Regularity of Interaction	Indicates how often users engage with their device and the routines they establish.	*You say "Good morning" to the device in the morning so that the light comes on and then the radio comes on and the weather report is read out, and at some point it becomes so integrated into your daily routine that it really is not only a routine for the device, but also for you (Interview 11).*
	Scope of Interaction	Indicates for which use cases the users use their VA and how extensive the interaction is.	*I actually use Siri mainly for organizing my everyday life as well as for sports. I use it mainly for time or calendar functions when I'm on the road, for example (Interview 7).*
	Device Infrastructure	Indicates the integration of VA in the household by the number of devices and equipment.	*I think there should be five, so in any case there should be a capable system in every room [...] so that you have the possibility to address the device in every room without having to shout through the whole apartment (Interview 11).*
	Overall Engagement	Indicates the extent to which users engage with the features and try to expand their uses.	*If I had more time [...] in which I could occupy myself with something like that, then I would actually do it. Yes, but otherwise it just sinks into everyday life, so I don't take the time now to get to know the device even better and to exploit even more functions (Interview 15).*
Usage Behavior	Interaction Behavior	Indicates how users perceive their behavior when interacting with the VA.	*I would describe my interaction with the device as [...] that I try not to do that too often, that is, only when it is necessary. [...] I wouldn't expect us to talk to each other or anything like that, but it's more like commands that I give to be executed (Interview 3).*
	Communication Style	Indicates how users perceive their communication when interacting with the VA.	*Direct, technical and complicated, because I have to be careful to give commands as precisely as possible so that Siri is not confused, so to speak precisely, to speak clearly, to give almost military commands and not as you would speak in everyday life (Interview 7).*
	Language Adaptation	Indicates the extent to which users adapt their language use while interacting with the VA.	*You use less colloquial language, I would say. For example, yes, that you don't somehow shorten words or use abbreviations or something like that, that you speak loudly and clearly and also somewhat more slowly (Interview 8).*

Device Perception	Device Properties	Indicates which properties and characteristics users would assign to their VA.	*Polite, questioning, helpful, goofy sometimes when she doesn't understand me after three times […]. Constantly changing, forward-looking (Interview 14).*
	Human Resemblance	Indicates whether users perceive or would attribute human-like characteristics to their VA.	*You don't feel like you're communicating with a human being. Maybe with a very old, somewhat demented person who also has bad hearing [...], but otherwise it really has few human traits for me. It's like a robot that has to do something for me (Interview 2).*
	Role Distribution	Indicates how users perceive the role and hierarchical position of the VA.	*Practical little helper that takes certain tasks off your hands to make your daily life easier when you don't have time or are too lazy (Interview 4).*
Perceived Attachment		Indicates how much users feel dependent on their VA.	*You just get so used to it that when you don't have it available, you just miss it and [...] a small dependency is probably also there when you have such a habituation factor that sets in like that (Interview 6).*
Added Value		Indicates the value users perceive from interaction.	*Technical tool that supports you in your everyday work and provides you with information quickly and easily (Interview 12).*
Emotional Bond		Indicates the emotional bond users feel to their VA.	*It is and remains for me still a technical device and I do not see myself now in a position to somehow build up an emotional attachment to any technical device (Interview 11).*
Emotional Responses	Positive Response	Indicates positive reactions in terms of pleasure, satisfaction or fascination.	*Feelings of happiness in a weakened form, because she just takes work off my hands and that is somehow a satisfying feeling when she does what I just feel like doing (Interview 6).*
	Negative Response	Indicates negative reactions in the form of frustration, annoyance, or concern.	*So really big disappointment. I was hoping for more from the technology than they have on the market. [...] I really wonder how the usability can't improve that much (Interview 2).*
Perceived Meaning		Indicates the importance that users would attribute to the VA.	*A high one, because it's already integrated into everyday life, because it's become a habit. So from that point of view, I would already attribute a high significance to the device for me (Interview 11).*

Perceived Trust		Indicates the level of trust users place in their VA.	*Usually I trust it, because she repeats it, that she has done it, but sometimes, [...] if it seems strange to me, then I sometimes make sure (Interview 8).*
Social Acceptance		Indicates the extent to which the use of the VA is socially accepted.	*For me it was actually something taken for granted [...] and for my friends it wasn't, and because there was such a surprising reaction from my friends because they just made fun of it and said, "What a freak and why are you even using that?“ (Interview 10).*
Category: Relationship Development			
Initiation	Initial Awareness	Indicates user's original reason for using or purchasing the VA.	*The first device we bought because it was kind of, because it was new, because it sounded cool, because I wanted to test it (Interview 18).*
	Initial Expectations	Describes the original expectations users had before purchasing or using the VA.	*I was very open. I just wanted to look at it: What's in it for me? What can this device do? I think I wanted to let it come to me first and try it out: What can this device do, what can Alexa do? (Interview 4).*
	Initial Attitude	Indicates the initial attitude of the user when first using or purchasing the VA.	*I would say mixed between neutral, but also partly curious, but not exuberant, so just curious about the technical features - what can it do, what can't it do, what is the current state of the art - but still also critical (Interview 7).*
Continuance	Time of Ownership	Shows how long users have owned their VA.	*I bought the first Echo Dot about two years ago, and then it evolved a bit, so more devices were added and then just the control options (Interview 6).*
	Change in Usage Behavior	Describes perceived changes in user behavior, such as frequency and intensity of use.	*I would say that it becomes more and more week by week or over time because you realize some features that you didn't think of before, but then you incorporate them into your routine or everyday life (Interview 3).*
	Change in Communication	Describes perceived changes in communication behavior, such as word choice or intonation.	*In the beginning, you had to get used to talking to the device, it's like learning how to Google. [...] Exactly, that's how communication developed, so I had to adapt to the device (Interview 2).*

Continuance	Change in Binding	Describes perceived changes in personal or emotional attachment to the VA.	*That it was a nice gimmick at the beginning, and that in the course of time one has learned to appreciate it very much and then consequently likes to fall back on it again and again. So it's a development of dependence, [...] a positive dependence, that is, an ever greater relief (Interview 18).*
	Future Usage Intent	Indicates users' intent and willingness to expand the use of their VA.	*All the things that you had in this questionnaire, you can create with these lists. I can imagine that well, or to just set reminders for a certain period of time, that that is saved and the call function (Interview 6).*
Breakoff	Person-Related Factors	Indicates factors such as life situation or occupation that might cause the user to discontinue use.	*If data protection and data security were even more important in my job, or one of the most important things of all, then I would also deactivate Siri for security reasons, because then the job would be more important to me than the benefits Siri brings me in everyday life (Interview 7).*
	Feature-Related Factors	Indicates factors such as functionality mitigation or data misuse that could cause the user to discontinue use.	*If the whole thing were to be used, let's say, commercially or if it were to encroach on my privacy, in other words if there were gross violations of data rights, then of course that would already be a reason for me to say, "Hey, then we'll pull the plug, that's absolutely not allowed" (Interview 18).*
Category: Marketing Implications			
Perceived Influence		Indicates the perceived impact users feel from interacting with their VA.	*For example, if I ask about the weather and the voice assistant says it's about to rain, then of course I put on a rain jacket, but those were not far-reaching or major decisions in which I was influenced. So if it was really every day, short, concise things and nothing important in that sense (Interview 4).*
Advertising		Indicates user acceptance and attitudes toward the use of VA as an advertising medium.	*I think I would do away with it then. I would find that very upsetting. Yes, I would find that very, very, very bad (Interview 6).*
Future Adaptation		Indicates how users would adapt the device in order to strengthen the interaction with it.	*I think it would be even better if the features were clearer and the features were personalized and customized for you. I think there are so many thousands of functions or all these capabilities that you can't see through (Interview 4).*

Appendix 2: Types of value added in the interactions

Added Value	Example Quote
Convenience	*I think that's actually super cool, because you don't have to get up and turn on the lights and walk through the room, but you can just... just do it with your voice (Interview 8).*
Facilitation	*It takes some work off your hands […] Of course I can do everything myself, but it's easier for me to tell her and she does it for me (Interview 4).*
Time-Saving	*I would say that it gives me a lot of added value because it saves me a lot of time, or at least I imagine that I save a lot of time (Interview 7).*
Productivity	*Why shouldn't you use it to outsource something, to use your own brain capacity or time […] for other things? (Interview 13).*
Entertainment	*I find entertainment quite cool with Alexa from time to time. For example, if you're sitting in a room with several people […] there's a function that lets you tell jokes (Interview 3).*
Well-Being	*I think the fact that we have this home system makes me feel more comfortable at home. So we always have music playing […] and it's always such a feel-good factor at home (Interview 6).*