Stereotypes and Politics: Reflections on Personas

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ABSTRACT
Using personas in requirement analysis and software development is becoming more and more common. The potential and problems with this method of user representation are discussed controversially in HCI research. While personas might help focus on the audience, prioritize, challenge assumptions, and prevent self-referential design, the success of the method depends on how and on what basis the persona descriptions are developed, perceived, and employed. Personas run the risk of re-inscribing existing stereotypes and following more of an I-methodological than a user-centered approach. This paper gives an overview of the academic discourse regarding the benefits and downfalls of the persona method. A semi-structured interview study researched how usability experts perceive and navigate the controversies of this discourse. The qualitative analysis showed that conflicting paradigms are embedded in the legitimization practices of HCI in the political realities of computer science and corporate settings leading to contradictions and compromises.

Author Keywords
Personas; User Representation; Social Perception; Stereotypes; Qualitative Study.

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D2.10 Design, Methodologies. H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous. H.5.2 User Interfaces: Theory and methods, User-centered design. J.4 Social and Behavioral Science. K.4 Computers and Society.

INTRODUCTION
Personas are used to inform design, they are created as representatives of people that a technological artifact is designed for [36, 59, 90, 100]. The process of design inscribes values in its artifacts; in turn these values prescribe and constrain the practices in which they are used (e.g. [104, 117]). As tools in the design process, personas contribute value by informing design, i.e. have a predominantly prescriptive function. They are meant to open design spaces by connecting the designers with the people they are designing for. The creation of personas inscribes agendas or scripts in a similar manner, defining and shaping the design space and the designers' actions [113]. Designers and other stakeholders extract information from these personas, form impressions of them and make inferences about them. These processes are part of what social psychology calls "person perception", i.e. the social processing issues that occur when we encounter other people. Person perception has been shown to be prone to numerous biases such as stereotyping, resulting from the complexity of social information processing and the fact that this processing commonly happens automatically.

Since person perception lies at the very heart of the persona method, the wide-ranging aspects of the processes involved are relevant to dealing with personas. Concerns regarding the persona method and person perception have been touched upon in HCI research, but have not been systematically connected to research in person perception. As an applied scientific field, HCI relies on individuals to put the scientific findings into practice – which is particularly difficult since HCI inherits tensions from the social and the natural sciences [6]. Employing the persona method means having to deal with these tensions between disciplines and between research and practice. We present the related word dealing with the interplay of design tool and person perception. It shows that reflections of one's own views and beliefs are needed to effectively work with personas. In a qualitative study of seven experts in the area of HCI and requirement engineering we elicit their perception of the persona method and the issues they see.

This paper contributes with a look at the psychological aspects of the persona method and with insights into how these are dealt with by experts in the field of HCI.

PERSONAS
Personas are fictitious characters that are used to represent users in terms of their goals and personal characteristics. They were introduced by Alan Cooper [36]. Based on knowledge of real users they act as stand-ins for users in the phases of the design process when real users are not easily available. From their origin in goal-directed design [37], they have found their way into user-centered approaches such as human-centered design [65] and contextual design [64]. They became increasingly popular beyond these approaches and have been widely adopted [63, 91, 92].

Persona has since become a blanket term; there is an ongoing debate regarding the usefulness of the persona approach, the arguments are brought forth in conceptual work on personas (e.g. [36, 37, 44, 55, 59, 60, 90, 95, 100]), empirical studies on effectiveness (e.g. [18, 63, 76, 83]), or critical views of the method (e.g. [20, 34, 81, 82, 106, 113]). The debate regard-

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ing personas is complicated by the fact that the persona method is often viewed as a single method that can be accepted or rejected, when in fact there are numerous variants and adaptations (cf. [44, 55]), some of these adapting personas to other paradigms, e.g. as practice-based personas [95] or as critical tools [118].

Personas address concerns and challenges that are highly relevant in design of new technologies and offer a method of dealing with them. Yvonne Rogers [103] points out that approaches that came with the second wave of HCI sometimes constructed conceptual frameworks rather than full-fledged theories in an attempt to be more applied, Susanne Bødker and Clemens Nylandsted Klokmose [21] see personas as one of these singular concepts with high impact that has become part of the toolbox proposed by researchers to address design.

Benefits of personas

There are various benefits of persona use suggested in literature (for overviews see [86, 91]). Substantiation comes from several studies, e.g. the ethnographic study of using persona use shows that – contrary to prior findings – the method is well integrated into existing practices [91]. In a rating of the benefits of personas, Tomasz Miaskiewicz and Kenneth Kozar [86] sought the opinions of a panel of experts with extensive experiences with personas, first identifying a list of specific benefits of utilizing personas and then gaining consensus on the importance. The five most significant benefits of persona use identified in this study were: (1) focus on audience and their goals (rather than the specific limitations or opportunities presented by technology), (2) prioritize product requirements and help to determine if the right problems are being solved, (3) prioritize audiences and bring about a focus on the most important audience(s), (4) challenge assumptions by bringing them to the surface and challenge long-standing (and often incorrect) organizational assumptions about the users/customers, (5) prevent self-referential design by helping individuals realize how the users are different from themselves. All these benefits can only be delivered on if the personas manage to create an understanding of another person's condition from within their frame of reference. In stating these benefits it is implicitly assumed that personas facilitate perspective taking. Through their description of a specific person, personas draw on our ability to easily form impressions and make inferences about people we encounter [59]. So personas can bridge the gap between the designer and other stakeholders and the people who will be using the technological artifact. Personas are seen as a way to create empathy and a way for the designers, developers, and other stakeholders to identify with the people who will be interacting with the system that is being created.

Connecting personas with data

Personas are supposed to be based on data about the people who are expected to be using a technological artifact [67], they are meant to connect the designers to the data and make it more tangible [99] – although practitioners do not necessarily follow the recommended practice [33]. While not all variations of personas have to be strictly empirical. (e.g. Mark Blythe and Peter Wright's personas derived from fiction developed to help designers be reflexive [19], Don Norman's [93] ad-hoc personas, or fiction-based or extreme characters to explore the edges of design spaces [45]) there is a great emphasis on the empirical evidence as a source of validity for personas – to the point that some authors suggest to not use personas at all based on the problematic relationship between personas and user populations, and difficulties ascertaining their validity [34].

Based on a study in industrial software design with practitioners experienced with the use of personas, Tara Matthews et al. [83] emphasize that personas must accurately reflect the user population to focus on key aspects as constraints of the design problem. They stress that rather than creating engaging personas, it is critical to avoid persona attributes that mislead or distract. They suggest an approach that presents user information to designers in three layers: persona, user role, and user study data. Linking all three layers and thus providing access to user study data, personas should be used to communicate user needs and advocate specific designs to stakeholders not familiar with user-centered design. In a different approach to linking their personas to their originating source of empirical data, Shamal Faily and Ivan Fléchais [51] present a variant of personas based on grounded theory where the persona's characteristics are traceable to the originating source.

Personas vs. real users

Beyond grounding personas in empirical data, interacting with and experiencing users is seen as an important basis for creating personas [99]. Experiencing users is seen as the key to avoiding or reducing the impact of stereotypical user descriptions [24, 64, 101]. The knowledge of actual users is essential for creating engaging personas and facilitates portraying a believable individual and having a compelling storyline [90].

There is a risk that designers may get carried away developing personas without connecting to the people that are supposed to be represented. This could result into unduly reducing the complexity of real users, making designers more comfortable about their design decisions while disconnecting them from real in-person interaction with users. Or it could lead to oversimplifying important differences between individuals, and giving designers a false sense of knowing; letting them assume they are using a scientific method that backs this up [17, 43, 82, 98].

The fact that the persona method seems so accessible that it is often adopted and then – purposefully or inadvertently – modified is both a strength and a weakness. There is a possible danger that the aura of the technique might be used to justify ignoring the study of real users [55, 98], using personas as a fig leaf to cover up the lack of studying actual users. Susanne Bødker and colleagues [20] found that the use of personas cannot in any way be a substitute for the in-

volvement of real users in design activities. In a study aimed at understanding whether applying personas is productive to designers' understanding of users' use situation they came to sobering conclusions: Based on four cases they could not find that personas per se support participatory design. They did, however, observe that personas are helpful intermediaries that help process and present data from participatory processes and might help designers get in the mode of preparing actual design participation. In addition, the use of personas seemed to activate pre-understandings, prejudices and assumptions – at best bringing the designers closer to actively remembering their prior knowledge relevant in the situations at hand, helping to activate and reframe pre-existing knowledge.

Personas as political tools

Some authors question the value of personas to inform design. They argue personas are used to justify decisions that were made on other grounds [105], or that the success and failure of personas are symptomatic for political processes in the organization [106]. Adrienne Massarani sees personas as political tools and warns they might oversimplify important differences between the individuals that the artifact is being designed for [82]. In her paper "Designing for imaginary friends: information architecture, personas and the politics of user-centered design", she takes the stance that personas are being perceived as non-scientific and concludes that "it is a bit surprising that they are used at all" (p. 409). Regarding personas as political tools she shows that the adoption might be made difficult by the perception of them being made up and points to the fact that experts expect them to be detailed descriptions grounded in real data. Susanne Bødker et al. [20] agree that personas have to be made immune to questioning whether they really exist – yet they point out that in their cases the questioning of the personas never happened. They explain this with the richness and insight they provided. Adrienne Massarani [82] elaborates how personas can be seen as boundary objects [23] in their role as political tools. As boundary objects used for cooperation across social worlds, the personas might be a linkage to the user data from which they were developed for designers. For developers, personas bring users needs that would otherwise be neglected to the forefront of attention. For business analysts and project managers, personas may help communication about functionality and support conflict management. As political tools they might be used by developers to avoid having to implement features they do not want to integrate: If the organization is committed to developing for the personas they have developed, wishes for additional features from upper management can be fended off by calling on the personas and their "needs". In the context of teaching design with personas, Cameron Jones and colleagues [67] refer to another type of political person which they call "promotional persona": It is created based on the designers' bias towards the design context to promote their preconceived notions of what the design should look like. The authors see promotional personas as the "Trojan Horses" of persona-based design, permitting designers to think that they are employing user-centered design.

Authenticity through stereotypes

In developing personas, referring to stereotypes can be seen as one way to make personas seem more "real" by yielding a high recognition value. Alan Cooper [36] stated "Stereotypical personas are more effective if the stereotype lends more credence to the persona. My goal here is not to be politically correct but to get everyone to believe that my personas are real." (p. 128). Some studies explicitly use "stereotypes" to inform design [2]. In line with this perspective, validity might be taken as plausibility for the end users, e.g. when iteratively refining the personas in workshops, taking comments "'Nothing big is missing' and 'this is a guy we could hire here' […] as confirmations about the validity of the personas." ([16], p. 382). The assumption was that this way of validating the personas would also add to their trustworthiness.

Ingbert Floyd and colleagues [55] state that stereotypes can be useful in persona development but should be selected carefully to avoid "ethnic, gender, or status profiling". They see their usefulness in the fact that these stereotypes generate social intuitions that the designer cannot ignore. And they assume that these intuitions allow the designer to predict a user's behavior even if it is different from how they would act themselves. Jonathan Grudin [59] warns against employing stereotypes since they can lead to systematic errors in trying to predict behavior. Yet he acknowledges that they might give rise to empathy. Lene Nielsen [89, 90] argues that stereotypes have the opposite effect: Taking engagement as the key to empathize with users, she shows how stereotypes prevent identification with the user. She sees the creating of engaging persona descriptions as a means to counteract stereotyping and actively involve themselves in the lives of the personas. However, she also concludes that creating stereotypes is hard to fight.

In HCI, creating authenticity through stereotypes is common when striving to design authenticity since it offers the social markers that are expected to be found [46]. Göde Both [22] shows how hetero-normative gender performances of a human-computer interface promotes authenticity – and points out how this performance of hetero-normativity in turn reinforces rather than deconstructs gendered performances. Creating stereotypical personas would in the same way trade authenticity for reification of roles and stereotypes. This tradeoff has been criticized by feminist HCI where it is argued that designers should use the unique opportunity to not reify the gendered status quo but attempt to change values with regards to gender in the design of technology (e.g. [6, 102]).

Considering diversity and gender in personas

Stereotypical personas thus risk reinforcing the existing stereotypes. Trying to avoid the reification of gender norms is one of the main concerns in using an intersectional perspective to HCI [1, 5, 7, 13, 47, 74, 78, 79, 97, 102, 104]. Some approaches or concepts in HCI explicitly deal with the dan-

gers of using stereotypes in user representations, e.g. by pointing to the danger of stereotypes being employed unintentionally by the designers, perceiving the users based on their own ideas, wishes, motives, tastes, and competencies. This approach has been called the I-methodology [12, 13, 96] or the fundamental design error [101]: With regard to personas this would imply that designers use themselves as a starting point for design and attribute their own goals, approaches, and tastes on the personas, developing them more similar or – based on the psychological contrast effect – less similar to themselves than they really are. Other factors facilitating the use of stereotypes can be found in all aspects of the practice of creating personas, e.g. time pressure, automatic thinking, need for closure, group identities, personal experience [80], or attributes of the persona description itself [90].

Trying to avoid reinscription of traditional gender roles, Eva Källhammar and Åsa Wikberg Nilsson use personas as a tool for critical reflection on gender issues and as a means of challenging and unfreezing conventional beliefs regarding gender [70]. Åsa Wikberg Nilsson and colleagues [118] present personas as a possible means of changing mindsets. Their objective is to use the persona method to challenge existing norms and perspectives. In their studies they found that personas can contribute to re-framing practices. They argue for personas as a qualitative method to understand the social aspects of the enquired context, since qualitative research's primary interest is to achieve understanding of a situation, an individual, a group, (sub)cultures etc., rather that explaining or predicting future behaviors [15].

Instead of focusing on trying to avoid stereotypes when using personas [80] or use personas to trigger a reflection on stereotypes [70], Margaret Burnett and her colleagues turn their attention to improving software by considering existing gender differences [14, 26-29]. Looking at actual differences found between men and women as they pertain to software tools, they have developed personas specifically designed to represent the different approaches to software that are found more often in males or females [31]. Their method "GenderMag Method – GenderHCI Cognitive Walkthrough with Magnifying Persona" helps software development teams to develop more gender-inclusive software [30]. It consists of a specialization of a cognitive walkthrough and several personas, including the persona of a female end-user programmer, to support analysis especially from a female perspective. The personas can be adapted to match the characteristics of different target user populations, e.g. regarding occupation, age, or geographic location. The authors emphasize that the personas are designed to not reinforce stereotypes of female versus male users' skills, since they are presented as equally good problem-solvers and equally competent with their technical domain; the differences incorporated in the persona descriptions concern their motivations and their different approaches based on gender differences found in empirical studies.

STEREOTYPES

Personas foreground a person in the design process and thus are exposed to psychological processes of social perception. As shown above, personas have received some attention regarding possible biases especially regarding a gender-fair representation of users. The following section points to stereotypes as a central concern of social perception that might be difficult to recognize in practice. It also explains the basic dimensions that organize person perception, and reports on a prior study on stereotypes in personas regarding the stereotype content model.

Since personas due to their very nature are limited in the information they are presenting about a person, they rely on and are prey to the cognitive bias, Daniel Kahneman [69] calls What You See Is All There Is, i.e. the notion that people form impressions and judgments based on the available information without wondering what information they might be missing. In social cognition, i.e. in perceiving and thinking about people, these judgments are – at least partially – informed by stereotypes. Stereotypes are oversimplifications of a complex social reality, they comprise knowledge about attributes and behavior about a certain group in society [72]. They are socio-cognitive knowledge structures, i.e. they are individual in the sense that each person carries this knowledge within themselves, but it is socially shared, created, and recreated through interpersonal and cultural consensus [50]. This dual structure of stereotypes leads to a continuous validation through consensus, leading to alleged knowledge of a social group being perpetuated in every act of repetition. The cognitive component (the stereotype in the strict sense) is accompanied by an affective and by a behavioral component - regarding gender, this triad of stereotype, affect and behavior is called sexism [112]. Stereotypes are often applied unconsciously and automatically, i.e. without our own knowing or even our own conscious endorsement [4], and become effective through implicit associations [57].

With stereotyping being essential to person perception, it is well-established that stereotypes can bias judgment of individuals [54]. One aspect of stereotypes is specifically relevant to informing design through personas: Stereotypes have descriptive aspects, that describe what group members *are* typically like, and prescriptive aspects, that describe what they *should* be like. In the context of personas it is important to note that while descriptive stereotypes can be overridden with clear disconfirming information about an individual, prescriptive stereotypes persevere with contrary evidence [56]. Design itself is already a process making prescription in the artifacts created (e.g. [104, 117]). Using personas as a tool to mediate the design process means to use a tool that relies primarily on person perception. The prevalence of stereotypes in person perception and the fact that they are typically applied automatically [8, 58] adds not only another layer, but another level of complexity – possibly even another quality – to the design process.

Recognition difficult

Beyond the unconscious application and recognition, even a conscious attempt to recognize stereotypes and prejudice is difficult: They are typically not explicitly expressed [10] since most people do not endorse blatant negative views of others but are motivated to be unprejudiced [116]. Still people unwittingly ascribe characteristics to other people that seem to be in line with their group membership; and these biased associations are stronger predictors of actual behavior towards others than the intention to provide equal treatment [58]. Stereotypes thus have moved towards more implicit forms [73]. Rather than focusing on negative aspects of groups, modern stereotypes value and emphasize positive aspects considered typical for these groups [38].

Subtle expressions of bias could be assumptions based on stereotypes, e.g. assuming that a judge is white [42], that people with disabilities are seen as lacking in strength or endurance, or are perceived as less competent [77]; or that women react more emotionally in work situations [35] or need to be restricted in their activities in order to protect them [88]. Since there is always ambiguity, the specific act can be easily questioned [66]. Looking at the same case, individuals do not always agree whether it involves stereotyping; people identifying with a group that tends to be stereotyped are more likely to note stereotypes than members of groups that are not typically targeted by prejudice [85]. Stereotypes are less likely to be detected when they are masked with positive views – studies of benevolent sexism even show that women tend to like the individuals expressing these views [9, 71]. So while social scientists have established that benevolent sexism can be harmful for women, it might not be perceived as sexism – a phenomenon that is unsettling since prejudice needs to be perceived before it can be challenged [68]. Furthermore, stereotypical views that seem to emphasize positive characteristics – and the failure to recognize them as such – elicits stereotype-confirming responses and cause targets to focus on their ability to demonstrate these positive qualities rather than challenging the stereotypical expectations [11].

Stereotype content model

Regarding the content of stereotypes, recent studies have provided a clear picture [41, 52]: Stereotyped groups can be described with reference to two basic dimensions of person perception, warmth and competence. Regarding gender there is a bias in terms of women being evaluated as higher on the warmth dimension and men in the competence dimension. Theory and research in social cognition show that the warmth dimension reflects qualities related to friendliness, helpfulness, sincerity; and trustworthiness; the competence dimension captures qualities such as ability (including intelligence), skill, efficacy, and confidence. Based on the two-dimensional warmth-by-competence grid different clusters of outgroups can be differentiated. The hypotheses based on the stereotype content model have been supported using a wide range of target groups, e.g. ethnicities, nationalities, socio-economic groups, religions, occupations, and gender subtypes (see [40] for a review). There are unique patterns of the intergroup emotions admiration, contempt, envy, and pity for each of the four resulting clusters [52, 53]. The ingroup is typically judged as having high competence and high warmth, eliciting pride and admiration, that are reserved for groups and individuals with self-relevant positive outcomes. Groups stereotyped as low on both dimensions elicit contempt. Outgroups that are stereotyped high on warmth but low on competence in the US sample included elderly, disabled people, and housewives. Viewed as harmless and pitiful, they elicit pity as a paternalistic response. The last cluster, outgroups stereotyped as low in warmth but high in competence elicit envy, an emotion that tends to be targeted at higher-status outgroups whose positive outcomes are seen as unjust. The stereotype content model has shown that within the origins of perceived warmth and competence lie competition and status as social structure variables: Non-competitive others are judged to be warm, whereas competitive others are not. High-status others are judged to be competent where as low-status others are not. This relationship between status and competition with warmth and competence has been replicated for actual groups of societies cross-culturally [41], constructed groups [32], and the perceptions of individuals [110].

Much of research on stereotypes has been on gender stereotypes and the relationship between the dimensions warmth and competence to femininity and masculinity respectively [108]. Supporting the stereotype content model, studies have provided ample support regarding the correlation of males with high status and high competence, as well as the correlation of females with low competition and high warmth [39, 41, 49, 50]. For the perception of individuals not conforming to these stereotypes a wide range of penalties can be observed: Both males and females experience a backlash effect, e.g. males working in care [111], supporting and mentoring women in organizational contexts [87], requesting family leave [109]; females being assertive in negotiations [3] or generally being agentic and violating gender stereotypes [25, 107].

Prior study on gender stereotypes in personas

In a study of personas in use Nicola Marsden and colleagues [75, 81] examined the descriptions regarding gender stereotypes. The empirical study of 170 personas [75, 81] supports the stereotype content model regarding the presentation of male and female personas. The persona descriptions were analyzed regarding the personal and social environment of the persona, their leisure activities and their technical competencies. The results confirmed the gendered presentation of male and female personas: In descriptions of female personas, children are mentioned more often than in male persona descriptions. Other people from the social surrounding of the persona are also mentioned less in male personas. The descriptions of the personas' leisure activities showed gendered qualities as well: Besides hobbies and interests that were mentioned for personas of all genders, there were those that were only mentioned for one gender, e.g. knitting or

aerobics for female personas, or soccer or technology for male personas. Regarding their technical competence, the descriptions of the personas did not show any differences. The authors interpreted this to be the result of a conscious attempt to avoid deficit-oriented descriptions: Researcher and practitioners trying to prevent stereotypical personas would be very careful to avoid differences in competency, since females' lack of technical competence is very prominent in the discourse regarding gender stereotypes.

In line with this, the study provided evidence that regarding the central dimensions of the global gender stereotypes, gendered presentations of personas were more prominent with regards to the dimensions warmth than with the dimension competence. Based on the assumption that the designers of the personas tried to avoid stereotypes in the descriptions, the authors interpret these findings in line with the stereotype content model: For males, the absence or a lacking presence of qualities from the warmth dimension is not deemed a problem – and thus no corrective action was taken in creating the personas. For females, on the other hand, the absence or lack of competence presents a noticeable deficit, thus the persona descriptions turned out gender-fair in this dimension. This interpretation is in line with the findings that show that in Western cultures, the self-reported traits on the competence dimension are continuously rising for women, while for men, the self-reported traits on the warmth dimension are staying the same while the societal values have moved towards valuing traits form the competence dimension and devaluing traits from the warmth dimension [114, 115].

Regarding the representativeness of personas the findings in this study are telling: Children were mentioned only half as often in descriptions of a male persona – except when the persona described was older: The combination of children and grandchildren was mentioned at a similar frequency for both male and female personas. This clearly shows that personas do not simply describe objective features of users and add enlivening elements to it. Rather, this study [81] showed a selective representation of data, stereotyping males to be less concerned with the warmth dimension. Additionally, the lack of this gender difference for older people can be seen as hinting to the fact that older people might be met with ageist rather than gender-based stereotypes [94]. So while single cases of stereotyping and bias might be hard to disambiguate – the aggregation of cases is not. The stereotypical presentation in this study of 170 personas lends support to the claim that personas are oriented towards representing the societal status quo, i.e. perpetuate the prevalent stereotypes.

A STUDY OF EXPERTS' VIEWS ON PERSONAS

By looking at the discourse about the persona method it is clear that there are conflicting views and paradigms involved. There are numerous implications and trade-offs to be considered and the very thing that makes personas an effective tool in HCI also make them prone to systematic biases. Underlying are the questions of objectivity, empirical validity and how or if design should also follow political agendas.

We report on a study of usability and requirement engineering experts with a background in computer science to gain an understanding of how experts perceive these issues and navigate their implications. We chose the target group motivated by the desire to get insights from expert practitioners who did not have formal training in social sciences and person perception, yet could be expected to not only use the persona method but also reflect upon the methods they use.

Our research was guided by the questions of how the experts navigate through these conflicts, how they position themselves with their expertise, and which paradigms are relevant for their professional judgment of the persona method.

Interviews

Data were collected in qualitative guided interviews with seven German usability and requirement-engineering experts. Our interviewees all work in applied research and have extensive experience in both higher education and corporate projects. While they all had experience working with the persona method, the focus of their formal education had not been on design or social sciences. The interviewees were a convenience sample of individuals having a formal education in informatics and identified as experts in the area of usability or requirement engineering.

While we were conducting guided interviews with experts [62] it is important to note that the interviews were not expert interviews in the sense that we were taking their statements as factual findings. Rather, our interviews focused on reconstructing their knowledge regarding the perception of usefulness and validity of the persona method.

Interviewee #	Characteristic point of view	Gender
1	Wants to highlight needs of marginalized groups	Female
2	Personas help create empathy of the users	Female
3	Methods need to be efficient, focus on functionalities	Male
4	Interacting with real users is better than using personas	Male
5	Personas as a result of the requirement analysis, focus on workflow	Female
6	Personas need to be based on empirical data	Female
7	Sees no alternative to the persona method	Male

Table 1. Overview of the interviewed experts

Phrasing and sequencing of the invitations to talk about the topics ensured that the interview was conversational, open and non-directive to give a maximum of latitude for responses and extensive narratives. The interviews started with a

lead question inviting the interviewees to talk about their experience with the persona method. This was followed by contextual questions to further elicit their approach and their position regarding personas. In a final step, unaddressed issues were clarified [61].

The interviews were conducted in German; they took place face-to-face or via telephone and lasted between 30 and 45 minutes. The audio recordings of the interviews were literally transcribed in a simplified GAT style [48] for analysis and translated by the authors. Noises and fillers are included and emphasized words are marked by capitalization.

Method of analysis

For the qualitative, reconstructive analysis the first step was to code and categorize the transcripts based on an inductive category model [84]. By forming the categories the data was summarized, explicated and structured. In a second step the categorized data was further analyzed with a focus on contradictions and inconsistencies, which are occurring when conflicting paradigms and ideas play a role. Such inconsistencies were interpreted considering the broader framework the interviewees are positioned in. By reconstructing the social framework of these inconsistencies the thought processes of the interviewees were traced along the relevant social structures beyond the individual mindset. The examples and quotations included in this paper are translations made by the authors.

FINDINGS FROM THE INTERVIEWS

As HCI experts the interviewees all expressed the goal to approach design in a user-centered way. But they emphasized different aspects of users and their needs. In their narrative regarding personas, three of the interviewees (Interviewee 3, 4, and 5) concentrated more on functionalities, while the other interviewees described how personal and socio-cultural aspects of the users should be included. These different focuses led to different arguments regarding the way and the aim with which the persona method might be useful. They also serve as a backdrop to the six themes that emerged from our analysis. These six themes are elaborated in the following sections.

General view of personas

Most of the interviewees think that anyone is able to use the persona method adequately and people developing personas do not need to be e.g. usability experts. To be able to apply the method, some basic knowledge of research methods, of the persona method itself and some degree of openness and communicative skills are required. The interviewees express that the average software developer should be able to acquire this knowledge without problems. They only make the restriction that people who fit the stereotype of a nerd might not be able to have the openness and communication skills to work with the customers and are not suited.

This optimism is surprising in the light of literature that shows the difficulties of persona perception in general and the challenges of teaching the persona method in particular [67]. But it has to be seen in the context of the experts' overall situation: They are teaching or using the persona method in a very technically oriented environment and perceive the need to justify using it. Assuming or admitting this method is too complex for software developers to learn in a relative short time, they would also have to admit a kind of capitulation towards their own job – and their ideal to make product design more user-centered.

Personas to help empathizing

In line with the main benefits of personas found in literature, personas are described to be a tool to create empathy for the users amongst the developers. It is assumed that by using personas, developers can take the user's perspective more easily and the method gains a pedagogical quality. Crucial for this is that the persona description includes personal descriptions like a picture and hobbies.

Interviewee 1: *when i say, imagine to be in this situation, (.) mhm? ((laughing)) then that doesn't work as well as when the whole thing gets a face, yeah, or a name.*

In the above quotation the interviewee describes how beneficial the use of personas is to help empathizing with the users. By laughing at the thought of trying to take the user perspective without another tool it is pointed out how difficult this task is – but also how little the average developer is expected to be able to empathize without further triggering. The lacking confidence in the empathizing skills of software developers is pivotal in all interviews and often explained by a natural preference for technical aspects.

In the perception of the experts, empathy is seen as a prerequisite for other persona benefits mentioned in HCI research. Two pitfalls are differentiated: I-methodology itself on the one hand and by using it failing the users or develop something that is not needed on the other. Whereas wanting to avoid the first threat has some ethical motivations – wanting to be true to the users, being fair and inclusive – the second threat is endangering the usefulness, the cost effectiveness, and endangers meeting stakeholders' wishes.

Personas as a communication tool

Talking about their experience and typical project setups, all interviewed experts see themselves very much as moderators between the users and the software developer and possibly the management of a company. Typically they work very closely with software developers and their students are also studying computer science or software engineering. The main purpose they see in using personas is to help the communication with the software developers. And – from the experiences of the interviewees – the user analysis, the development of personas, and the requirement analysis are also usually done by software developers.

The idea of personas as a useful "communication tool" (Interviewee 2) was included in all interviews, showing that the experts are very much aware of personas as political tools in the sense of being communication tools. They state that personas can help the communication within the team, but also

towards other stakeholders like management. The interviewees express the importance of the persona descriptions as a reference point and create scenarios, where the team would talk about which one of the personas would say: "what would Claudia say?" (Interviewee 2). The persona does then not only act as an anchor for what the users need, but offers a way to place your argument in someone else's mouth and referring back to agreed grounds where it might be easier to solve conflicts.

Personas can also replace the direct communication with the users when they are not available. In agreement with the HCI literature on participatory design, some of the interviewed experts (Interviewee 3, 4, 6, and 7) emphasized that the persona method is only a workaround and the direct communication with the users would always be preferred. Whether or not direct communication with the users is possible depends on the scale and type of the project and whether the users are very preoccupied with their work.

Personas and political agendas

Another aim that personas can be used for is to highlight those needs of users that are easily overlooked. Using personas to draw the attention to specific types of users or aspects of a user group is motivated mainly by ideas about fairness and sustainability. This purpose of the persona method is where the interviewed experts differ the most in their opinions.

With a focus on the functionalities of the product it seemed contra productive to some interviewees (mainly Interviewee 3, 5 and 6) to additionally include aspects that were not directly mentioned in interviews with the users or observed in an ethnographic study. Following the idea that the typical users have to be included and the product has to be designed to suit the majority, there is no space for highlighting the needs of minorities or less stereotypical users. Instead, stereotyping in personas is often understood as a matter of course. Agendas like inclusive design, anti-discrimination or sustainability are ruled out unless the customer directly asks for such a design or the benefits can clearly be shown with regard to cost. Any aspects of personas that are not directly in line with the current user sample should not be considered, unless considered mandatory or best practice. Therefore it seems not only legitimate, but necessary to reduce the complexity of the users and focus on the typical user groups.

An imaginable benefit of including fictitious aspects in the persona description can be seen in the creative development of new products (Interviewee 6). Even if this expert describes her own projects as "rather classic", she can imagine that additional persona descriptions or personas that are not based on empirical data could add a creative value to the design project. But in projects where the user group is clearly identified, personas have to be based on information given by the users, she argues.

For Interviewee 1, 2, and 7 it is important that a well-designed product is sustainable and not discriminating. To achieve this, they argue for deliberately including descriptions in the persona set that are less stereotypical or not yet part of the current user sample, but will become more important in the future. Following this idea, it is the job of the requirement specialist to highlight and in a way predict the needs of underrepresented users like women and of younger users, who will be using the software in the future. By wrapping this idea in statements like "i think", "yeah, i would do it" (Interviewee 7) or "well, i personally would be open to fictitious personas" (Interviewee 2) they communicate that they consider this idea to be swimming against the tide – or even directly point out that it is their agenda to highlight the needs of users positioned more on the margins of the user sample. With the idea that user-centered design also needs to include the needs of minorities and marginalized groups this opens up questions about what kind of information personas have to be based on and what role empirical validity and objectivity play.

But talking about which information is essential in the persona description and which additional information could be misleading also caused some inconsistencies within the interviewees. It seemed sometimes hard to decide, whether it was more important to be able to prove the validity of the persona description or to actively use them to introduce additional and interesting perspectives to the design project.

Objectivity and validity

The interviewees find it challenging to work with a method that involves person perception and at the same time keep their claim of being an objective researcher. Some simply accept that this method is used in HCI and take this as adequate legitimization. Others describe difficulties with the persona method as an approach of understanding and interpreting. They have different ways of dealing with these ambiguities and these ways sometimes lead to contradictions and inconsistencies, which are possibly symptomatic for the challenges involved in user-centered design.

Interviewee 1*: yeah that is of course CRUCIAL, that one tries to look at the user groups objectively, isn't it? (..) though that is of course also a question. everybody has their own PERSPECTIVE, so fully- (..) mhm objective will you never be able to be. uhm, but I think that is important. that=that one (..) tries to identify objectively, which=which groups do I have here? to describe them, (..) mhm if one puts themselves in their position the whole thing becomes subjective again (therefore (laughing)) it is an area of conflict, isn't it? yeah. yeah.*

Interviewee 1 describes the conflict between empathic understanding and objectivity. She notices her own contradiction, laughs about it and points it out. Other interviewees had similar contradictions, but not all of them noticed the occurring inconsistencies as the justification of objectivity or validity was more important.

The question how using the persona method can be justified was crucial and all interviewed experts see the answer in

empirical validity. They stress that persona descriptions need to be based on data in order to be true representations of the users. The empirical research methods they use and find adequate for analyzing the user requirements are mainly qualitative research methods like qualitative interviews, ethnographic observation and focus groups. Quantitative data might sometimes also be used, but do not seem to play a major role. As shown in the literature section, the implications of person perception are extensive and qualitative methods require interpretation and the ability to reflect by the researcher. Yet in the interviews, the subjective element included in any interpretation process is either neglected, denied, or strategies are developed to eliminate it. For example a mix of research methods is seen as an appropriate tool.

Interviewee 3: *well we have ALWAYS uhm done basically (muffled) structured interview plus observation. (..) yes, then you get quite a good overview, uhm (..) ONE method alone is of course not enough uhm (..) well i mean there are also reports and studies, that the picture is simply biased*

In the above example the interviewee describes his preferred mix of research methods and stresses that one method by itself would not be sufficient. He argues that reputable user research would always have to use mix of methods in order to avoid unwanted bias. This idea is contradictory to the statement that most people would be able to develop good persona descriptions, since operationalizing and conducting such research needs expert knowledge.

Objectivity is seen as a quality attribute and therefore crucial to justify the work towards the customer's company, colleagues with a more technical focus, and software developers. The threat of not being taken seriously affects the experts personally but they also see their work at threat and with it the whole user-centered approach.

Interviewee 3 emphasizes that objectivity is essential and sums up: *therefore I say, that objectivity is extremely important from my point of view, (...) there we have to be objective, have to be reliable, be without contradiction.*

But objectivity or the validity of the used data is also seen as a necessity to prevent I-Methodology. Personas have to be based on valid data otherwise the method seems to become useless.

Interviewee 7: *that is from my experience the most difficult part, when teaching this method, that it uhm isn't a FANTASY WORLD, i'm building for myself, but that it needs a really strong objective basis.*

It is argued that if the persona description is not based on empirical data, the method cannot help a user-centered design. Overall, the experts' statements focus on the persona descriptions – the topic of how these personas are perceived is mostly neglected. So while research on person perception shows numerous biases that are relevant when using personas, the interviewees do not reflect these.

Image of the persona method

The need to justify their work as being objective and valid is rooted in a bigger conflict, which becomes apparent when the interviewees talk about the strong technical focus in IT corporate and academic settings. In this political landscape they create a strong picture of "the other" and talk about being belittled or laughed at with their own approach.

An image that comes up in several of the interviews is the esoteric HCI expert with incense sticks versus the "traditional" technically focused programmer. While they do not think of themselves as being esoteric, they seem afraid of this stereotype being applied to them since it implies being less technical – and thus less important. They feel confronted with this putative contradiction between the technical and the user-centered approach both in academic and in corporate settings; several interviewees referred to the "traditional" way of thinking. Traditional here stands for a technical focus, making the user-centered approach the innovative approach. Software developers are in turn seen as technology loving, tinkering people, seeing themselves as not needing much education on how to empathize with users.

The interviewees then express that they are met with suspicions of trying to fulfill a pedagogical mission by using tools like personas. There is a general feeling that, whilst prescribed, personas and user-centered design in general are not seen as valuable by "others". The wider infrastructure (economic, organizational, policy, IT community) is perceived as enduring the work with personas rather than seeing its value.

This political dimension frames the experts' whole outlook on the persona method. They seem to commit themselves to a scientific paradigm of objectivity that offers no room for the discussion of subjective elements or probabilistic rather than deterministic causalities. In HCI research, this need to negotiate between different paradigms and objectives has been discussed in the context of feminist HCI [6], but has been largely absent from the scholarly debate of personas.

DISCUSSION AND CONCLUSION

It is somehow surprising that the persona method carries an image of being easy to use and somehow hands-on. Current research on automatic and implicit processes indicates just the opposite: It shows how person perception can bias design when working with personas, thus making it obvious how many difficulties the unreflected use of the persona method involves. In our interview study, we wanted to find out how usability experts deal with the issues, i.e. how they explain their use of a method that relies on a process that is systematically biased by group processes, automated thinking, and stereotypes. It was their reflection on these common and partially inescapable biases of impression formation in the context of the persona method we expected to get and wanted to analyze. But these reflections on person perception were largely absent from the interviews. Thoughts about biases in the perception of personas, their implications, or the content of stereotypic attributions did not play a significant role in the interviews. The interviewed experts thought of the method as

being on the rise and a progressive way to represent users. They expressed that developing and working with personas was quick and easy enough to learn. Their main criticism of the method was regarding the cost-effectiveness and, if not based on empirical data, it being used incorrectly

So the problems stated in the academic discourse regarding implicit and automatic person perception triggered by stereotypes were largely neglected. However, there seemed to be an abstract knowledge that automatic impression formation might be facilitated by personas. In the interviews, we found the following four – often intermingled – approaches to dealing with this awareness of automated social perception and personas: (1.) Seeing it as necessary prerequisite for empathy: The valence and the imperative flavor of person perception in personas was seen as positive. It was assumed that if personas were used, empathy would be a natural consequence. Whether these social intuitions were really resulting from empathic processes, i.e. taking another person's perspective and using their frame of reference, or were successful applications of stereotypes, was not differentiated. (2.) Seeing it as a topic only for some people: The possibility to empathize was seen as an inter-individual issue. Some people with a very technical focus might struggle to empathize. The locus of control was thus attributed to individuals working with personas and not seen as an inextricable problem of the persona method itself. (3.) Seeing it as an unavoidable nuisance that cannot be changed. Interviewees seemed to perceive a necessary trade-of: Reducing the complexity of the users in persona descriptions seems to somehow make it easier to empathize. With a rationale of "better this than nothing", possibly stereotyping and therefore discriminating implications were accepted. (4.) Seeing it as a problem that can be overcome by grounding the personas in objective data. The objectivity and validity of the data that the persona is based on was seen as a way to ensure that subjective processes of impression formation did not have to be dealt with.

What all four of these approaches have in common is that they do not focus on the responsibility to actively take ownership of the impressions generated by the personas. They do not consider the way the impressions are formed or how it could be ensured that stereotypes are not reinforced. While the existence of automatic perception processes was acknowledged, broader reflections e.g. on reifying the social status quo regarding stereotypic perception was not something the experts seemed to be concerned about.

One factor that seems to explain the lack of critical reflection of the persona method is the political landscape: In the perception of the interviewees, the corporate and academic IT world shows little acceptance of user-centered methods. Usability experts seem to face a difficult conflict and perceive their professionalism as being at stake: In an IT world that champions a technical and deterministic approach, an approach like user-centered design that places value on social factors is seen to need legitimization. To be responsive to this need, the experts we interviewed tried to justify the validity of the persona method by taking on a paradigm of value-free science. It becomes clear that in this political environment, there is little room to critically reflect that this paradigm is incommensurable with the qualitative methods and the approach to understand humans in their complexity.

With our study we wanted to elicit how the experts navigate through issues arising from processes of impression formation, how they position themselves with their expertise, and which paradigms are relevant for their professional judgment of the persona method. We expected the experts to reflect upon the implications of possibly biased impression formation for the design process. It turned out that taking ownership of the results of possibly biased processes of social perception was not something the experts considered part of their role. We found the usability experts being very occupied to position themselves within the IT world and proving their user-centered approach to be valid and useful in economical and science-oriented contexts. This seems to be the everyday challenge of the experts and very much influences their view, approach, and practice of the persona method.

Personas are seen in need of defense against being esoteric and non-scientific. Unfolding the biases that are an inevitable part of person perception is avoided since it might open another flank. With their focus on people, personas seem to inherit the challenges of interdisciplinary work in the extreme. This raises the question whether personas per se really help designers and developers. Future research should focus on the politics and practices surrounding the use of personas and the extent to which they facilitate and require reflections of biases, views, and beliefs.

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