

## Chapter 2: Personas and scenarios

Many of the authors contributing to HCD literature concerning personas and scenarios are very enthusiastic as to the effectiveness of personas and scenarios as both summarizations of end users (as mock users) and as persuasive communication conduits between UX researchers and designers about end users. However, there has been very little reflection about how or under what conditions personas and scenarios are effective. Recall that the primary research questions driving this investigation are concerned with how (or if) designers incorporate personas and scenarios into their design processes. In other words, are personas effective mock user constructs? Do scenarios expand the utility of the mock user construct by introducing context? What can make them more effective, more useful, and more usable? Additionally, little is known about what variables might affect their usefulness and usability; variables which include those informed by design cognitions studies; i.e. design cognition styles, design experience, domain expertise and HCD orientation. However, before answering the primary research questions driving this investigation, I first establish what constitutes a persona and what comprises a scenario in the context of HCD in this chapter.

As I investigated the literature pertaining to personas and scenarios, I discovered important differences between the content and the general tone of popular literature (mostly books) versus the academic literature (mostly journals and conference proceedings). First, almost all of the instructional literature which discusses how to actually create personas and scenarios is from popular literature. And, as to be expected, the tone of popular literature is one of promotion and enthusiasm in an effort to sell the reader on persona and/or scenario use. As such, most of the reflection about personas and scenarios in the popular literature is in support, making largely positive claims. Conversely, while there are notable exceptions, most of the negative reflection concerning personas and scenarios as HCD methods comes from the academic literature. Consequently, the general tone of the academic literature is more skeptical, although again, there are notable exceptions.

To provide background information for this research, I discuss the literature pertaining to persona/scenario reflection and analysis in this chapter in more depth. The literature on how to actually create personas and scenarios will be discussed in Appendix A, in concert with the discussion of how I modified some suggested steps due to challenges presented by the circumstances and data that were available. In the following sections I first discuss personas and then move to scenarios.

## Personas

A persona is a composite archetypal character (also known as a user model or profile) that is derived from UX research. In other words, personas are a summation of research data in which each persona represents a group of users who share common goals, attitudes and behaviors when interacting with a particular product or service (A. Cooper, et al., 2007; Mulder & Yaar, 2007; Pruitt & Adlin, 2006). Much of the literature agrees that the popularization of personas began with a brief mention by Alan Cooper in his 1999 book, “The Inmates are running the Asylum: Why High Tech Products Drive Us Crazy and How to Restore the Sanity” (Adlin, et al., 2006; A. Cooper, et al., 2007; Pruitt & Adlin, 2006). In the following sections I will first discuss claims made in the academic literature about persona utility in the design process, followed by a discussion of the criticism and concerns about persona creation and use.

### Claims of persona utility

There are multiple positive reports in both the popular literature (A. Cooper, et al., 2007; Mulder & Yaar, 2007; Pruitt & Adlin, 2006) and the academic literature on persona use in technical product design and development (Chang, Hsu, & Wang, 2008; Dantin, 2005; Hill & Bartek, 2007; Junior & Filgueiras, 2005; Markensten & Artman, 2004). Claims of why personas are effective summarizations and communicators of mock users fall into four major categories: (1) personas increase *empathy* with the user; (2) personas provide a clear *focus* of the user audience; (3) personas facilitate improved *communication* about users and (4) personas act as an aid for *stereotype avoidance* of

users. The reasons personas fulfill these enthusiastic claims, proponents argue, is due to the human ability to engage with fictional characters. Fictional character engagement can be routinely seen in how audiences respond emotionally to, and make inferences about, characters in books, television shows, and movies (Grudin, 2006). Discussion of each of the common claims is expanded below.

### Empathy

A common claim in the literature is that personas empathetically engage the designers to understand a user's perspective (A. Cooper, et al., 2007; Mulder & Yaar, 2007). Cooper et.al. 2007 argues that empathy with end users is critical for designers as they make decisions based on the "cognitive and emotional dimensions" of the personas. The authors equate persona empathy to method acting, which is a tool actors use to get into the skin and empathize with the characters they portray. Mulder and Yaar (2007) argue that personas address the need for designers to recognize they are not the user, "personas help you live in your user's shoes...when you face a decision, you might imagine what [persona name] would want to do in this situation, not what you want." Grudin & Pruitt (2002) contend that personas take advantage of our ability to "extrapolate from partial knowledge of people to create coherent wholes" which in turn forms a holistic image of the user in the mind of the designer, that the designer can mentally transport into new situations and settings. Persona proponents argue that the more a designer engages with the persona, the more empathy he will have for the end users represented by the persona. The user interface will therefore be more aligned to real user's needs and goals.

### Focus

Many proponents argue that personas provide constraints on user populations so that the design team can focus on a specific subset of users (Adlin, et al., 2006; A. Cooper, et al., 2007; Head, 2003; Kuniavsky, 2003; Pruitt & Adlin, 2006). Focus emancipates the design team from problems that might arise when considering a full spectrum of end users and allows them to concentrate on the highest priority set of user

goals and needs. A. Cooper et.al. (2007) argues that it is better to design for one person than vaguely for everyone. Kuniavsky (2003) adds that, “by defining an audience too broadly, you are not defining it at all.” TC theory suggests that a clear audience focus also leads the creation of consistent clues in the interface that helps real users adopt the role of the mock user(s) represented by the persona(s).

### Communication

Proponents contend that personas provide a communication channel for conveying a wide range of quantitative and qualitative data (Pruitt & Grudin, 2003). Clear communication in turn facilitates consensus and efficiency in team decision making (Mulder & Yaar, 2007). Additionally, personas can assist succinct communication about users beyond the design team to other stakeholders within the organization (Pruitt & Adlin, 2006). By making the assumptions about users explicit, they can also provide a clear benchmark measuring a design’s effectiveness (A. Cooper, et al., 2007) and provide guidance for choosing participants in later usability studies. In other words, proponents suggest that by making end users explicit, personas put all of the design team on the same page. By keeping the design team on the same page throughout the design process, personas facilitate better communication resulting in better decision making.

### Stereotype avoidance

In the void of user research, designers have only their assumptions and intuitions to guide their work. Goodwin (2002) argues that “the whole point in creating personas is to get past our personal opinions and presuppositions.” Additionally, all designers carry biases and assumptions about end users, Pruitt and Aldin (2006) argue, “Whether or not you surface these assumptions, they will affect the design and success of your products.” Persona proponents argue that if designers are convinced by the persona data, then their biases and assumptions will be replaced by personas, i.e. data-driven mock users.

If personas meet all of their claims, then proponents assume that designers will have an actionable construct of the user (mock user) in mind. All of these claims are intended to better the Designer-User relationship in the technology communication triad described in Figure 1. Empathy will lead to an interface that is more aligned to real user's needs and goals. A clear focus will lead to a consistent interface with clear and salient cues to guide the high priority users. Good communication will lead to better and more efficient decision making during design. Avoiding stereotypes forces designers to dismiss their assumptions and consider target users. In turn, if all these claims are met, an improved user experience is expected. However, there are also negative reports of persona use in the literature.

## Criticisms and concerns about personas

Personas also have many critics who report negative experiences and opinions about personas questioning their usefulness and effectiveness in the design process; critiques are primarily from the academic literature (Blomquist & Arvola, 2002; Chapman & Milham, 2006; Portigal, 2008; Rönkkö, Hellman, Kilander, & Dittrich, 2004). In my review I found six general categories of concerns and criticism in the literature about persona creation and use: (1) personas overly abstract the user; (2) personas are not believable; (3) persona creation requires the specialized skill set of a social scientist; (4) personas may be overused and can become stale; (5) designers need training and/or experience to use personas as envisioned by persona proponents; and (6) they will only be accepted and used if they align to previous stereotypes that designers already maintain. Each of these concerns is described in more detail below.

### Personas overly abstract the user

Portigal (2008) feels that personas dehumanize end users by representing them too neatly, and implores HCD advocates to “look for ways to represent research in a way that maintains the messiness of actual human beings - no tool, no method and no shortcut can substitute for real in-person interactions.” This is also a perspective shared

by proponents of participatory design (PD) where users are included as full partners in the design process acting as members of the design team (Muller, 2003; Törpel, 2005). While I am not concerned with articulating all of the differences between PD and HCD approaches, the abstracted/summarized user (i.e. persona) is a central departure between these two participatory approaches to design.

### Personas are not believable

Personas have been accused of being a fiction that is not believable, because they were either not regarded as based on real data, or their relationship to the data was unclear (Rönkkö, 2005). Some have argued for more quantitative and objective methods to remove the “subjectivity inherent in persona creation” (Chapman, et al., 2008; Chapman & Milham, 2006; Mulder & Yaar, 2007). This debate has the potential to undermine persona persuasiveness quality for some designers (Pruitt & Adlin, 2006).

Chapman and Milham (2006) suggest that it is difficult to know how many real-users a persona represents. They feel without multivariate statistics, which require large sample sizes, it cannot be known if the persona represents a million users or one. Additionally, these researchers posit that personas need to be “falsifiable”, applying a positivistic requirement from physical sciences for personas to be considered valid. While this is an unrealistic and naive understanding of social science, the concerns about objectivity and rigor are valid if the perception of methods has persuasive qualities for persona end users, i.e. designers.

### Personas creation requires special skills

Others have expressed concerns that the specialized skills of a social scientist are required to create personas (Blomquist & Arvola, 2002). This makes personas an expensive luxury that few production processes can afford. This is a valid concern especially if personas do not do what they claim.

### Personas can be overused and become stale

Pruitt and Grudin (2003) express concerns over the reuse and over-use of personas for too many products. In their work at Microsoft, they have witnessed diminished persona utility for any one product as a result (Grudin & Pruitt, 2002; Pruitt & Grudin, 2003). Head (2003) also warns against recycling personas for new projects. Furthermore, Portugal (2008) also contends that personas become stale and cannot possibly represent the moving target of an end user.

### Designers need training and/or experience to use personas

In a study of actual design team use, Blomquist and Avorla (2002) found that designer participants did not know how to utilize persona information in the design process and never integrated the personas. The researchers contend that the designers were never comfortable with the method. They claimed personas needed to be created specifically for designer capabilities and that “for a method to work properly it must be tweaked to fit the designers that utilize it”(Blomquist & Arvola, 2002).

Rönkkö (2005) took the Blomquist and Arvola’s study further, and in an investigation that is somewhat similar to what I am attempting in this dissertation, she searched for project conditions that interact persona usefulness. The researcher observed personas use in three student (i.e. novice designers) design projects and found that personas were not used as expected by proponents. She claims that in all of the projects personas “functioned as an internal concept in the discussions between interaction designers and to justify design rationales ‘after the fact’ to other project members, as if they actually were based on the persona”; in other words, the personas were vessels in which the (student) interaction designers filled their own ideas about users to justify design decisions to the other members of the design team. Since her findings are based on first time personas users, the findings may be a further indication that experience with personas may be an important ingredient to their success, as opposed to a reliable demonstration of the failure of the persona method.

Personas are only accepted if they align to a design team stereotypes

Chapman and Milham (2006) argue that if personas do not align to a design team's pre-conceived ideas, then they will probably be rejected. Since stereotyped formation is a natural consequence of the way the human memory works, they argue that personas simply activate a previous stereotype. Additionally, they cite the concept of 'confirmation bias' in psychology that asserts that people tend to notice confirming evidence and overlook disconfirming evidence; this suggests designers will actively seek evidence to support their previously held stereotypes and ignore the personas.

Avoiding stereotypes is also one of the chief claims of personas. If it is not possible, as Chapman and Milham (2006) suggest, for a designers to avoid stereotypes then the utility of personas is reduced. Their effectiveness of conveying UX research is diminished if they only work to activate existing knowledge, and if indeed this activation then only leads to stereotype confirmation.

In summation, this section on personas discussed enthusiastic claims made of personas in the literature that will help guide some of the interview and survey questions I use in this research. Next, I detailed criticisms and concerns about persona use and misuse that are investigated as part of this research. Most studies I found analyzing personas utility do not consider the fact that proponents of personas typically suggest that personas should not be employed as user summarizations in isolation. Major proponents all emphasize that personas need scenario stories to reach their highest potential as summarizations of user data (A. Cooper, et al., 2007; Grudin & Pruitt, 2002; Mulder & Yaar, 2007; Pruitt & Adlin, 2006). In the next section I will discuss scenarios.

## **Scenarios**

A scenario used in the HCD context is a story describing a character in an activity in relation to a product (Carroll, 2000a; Go & Carroll, 2004; Quesenbery, 2006; Rosson & Carroll, 2003) A. Cooper et.al. (2007) emphasizes the need to include personas in scenarios because they provide an empathetic center to the story. Where

personas describe the individuals that will interact with a product, scenarios describe the content and context of an idealized interaction.

In this investigation, I am focusing specifically on how designers consider users as they do their work, i.e. how they form their mock user image, and how persona and scenarios work to help or hinder the formation of the mock user image. As such, I will be investigating scenarios primarily as an adjunct to personas. Many of the claims made of scenario utility, concentrate on how scenarios aid the design process, but do not discuss how they help designers keep the user in mind. Additionally, I have found that depending on the discipline and granularity of detail, the term ‘scenario’ has multiple meanings.

## Scenario variations

HCD is only one of the disciplines that have utilized scenarios. Other disciplines that use the term “scenario’ but with different meaning include strategic planning, requirements analysis and engineering, and object-oriented design (Go & Carroll, 2004). Each of these disciplines focuses on telling scenario stories but varies from typical scenario used in HCD in that they (a) are told from a different perspective, (b) concerned with different timeline projections into the future and (c) use the scenarios for different functions. To clarify what I mean when I use the term ‘scenario’ in this dissertation, these variations are briefly detailed below.

### Strategic planning scenarios

Scenarios in the HCD context are an adaptation of scenario-based approaches used first in planning and management (Go & Carroll, 2004). Often referred to as ‘what-if’ scenarios, strategic planning scenarios describe possibilities that facilitate decision-making about alternative approaches to possible events years in the future (Kahn, 1962). They are told from the perspective of an organization, and typically project imagined events far out into the future, frequently for a year or more.

## Requirements analysis and engineering scenarios

Scenarios used for requirements analysis and engineering are intended to specify user requirements for interactive systems. These scenarios are focused only moments in the future and are concerned with keystroke commands and task order. These types of scenarios tell the story of a computer interaction from a system's perspective. Seminal work in this field includes the 'Inquiry Cycle model' (Potts, 1995).

## Object-oriented design scenarios

Scenarios used for object-oriented design are intended to help developers to program interactive systems. Object-oriented design scenarios help developers identify objects, data structures and class hierarchies that define objects within the system and how those objects will interact (Go & Carroll, 2004). Much like those used in requirements analysis, scenarios used in object-oriented design look only moments into the future, describing possible paths users might take when using an interactive product or service; however, unlike requirements analysis, they focus their interactive tale from the perspective of a system or system object. There are three commonly used approaches/methods: (1) use case approach (Jacobson, 1995); (2) Responsibility-driven design approach (Wirfs-Brock, 1993, 1995) and (3) automated modeling approach (Koskimies, Systä, Tuomi, & Männistö, 1998).

## Scenarios in the HCD context

Scenarios in the HCD context are told from a user (persona, in the context of this research) perspective and can describe anywhere from a few moments to an entire day of interaction with a product or service. A. Cooper et.al. (2007) labels these types of scenarios, used in early phases of the HCD process, as 'context' or 'day in the life' scenarios. This is the type of scenario that I am focusing on for this dissertation; from this point on I will refer to these types of scenario as 'context scenarios' to disambiguate their meaning from scenarios used in other disciplines and those used later in the development process (also advocated by A. Cooper et.al (2007). In their

‘Goal-Oriented™ Design’ approach, A. Cooper et.al (2007) suggest that context scenarios are created early in the design process *before* any design is performed. The authors contend that context scenarios are used to “explore, at a high level, how the product can best serve the needs of the personas,” and “help create initial user requirements before the specifics of the product are understood” (A. Cooper, et al., 2007).

### Claims of context scenario utility

Persona advocates argue that the addition of context scenarios help designers keep the user in mind (e.g. mock user). Quesenberry (2006) suggests that stories are an important augmentation to personas because stories are effective at communicating culture and transmitting persona information into a memorable format. Proponents also suggest scenarios are effective additions to personas because people are pre-wired to receive complex information through storytelling (Grudin, 2006; Quesenberry, 2006).

John Carroll, a long standing advocate of what he coined ‘scenario-based design’ in the HCI community has written extensively on scenario utility (Carroll, 2000a, 2001). However, Carroll focuses primarily on how scenarios support *design process*, and less on how they help designers keep the user (mock user) in mind. His work in the field is deservedly respected; I have summarized the five challenges that he argues scenarios address in the design process in Appendix B.

### Concerns about scenarios

Several authors have argued against using scenarios without personas (A. Cooper, et al., 2007; Grudin & Pruitt, 2002; Mikkelsen & Lee, 2000; Pruitt & Adlin, 2006). Mikkelsen and Lee (2000) argue that scenarios without a character description (i.e. persona) assume the reader understands relevant details about the user. Consequently, critical details such as user motivation are expected to be inferred by the reader. Grudin & Pruitt (2002) contend that while scenarios are capable of describing

work practices well, without main characters, i.e. personas, they are not engaging enough to employ designer imagination.

Carroll's scenario-based design has been criticized for not being based on data. Grudin & Pruitt (2002) expound on this criticism, stating that "A quarter century of working with scenarios in design has left one of us feeling that scenarios are rarely useful because they are rarely empirically grounded". They maintain that direct user observation is often not performed prior to the formation of scenario stories, making them a means by which to justify "particular feature or technologies." However, they capitulate that "...scenarios are not a problem, but how they are used usually is," and suggest that scenarios should be used in conjunction with personas.

In summation, this section on scenarios explained how HCD context scenarios can be differentiated from those in other disciplines because they focus on interactions from a user perspective; and in the context of this investigation, from a persona perspective. Additionally, context scenarios span less time than strategic planning scenarios, but usually more than those used in requirements analysis and object oriented programming. Finally, context scenarios are explicitly intended to communicate different types of information from those in other technical related disciplines - they are intended to help designers keep the users in mind. Conversely, scenarios in other technical related disciplines are meant to inform designers about the system, or in the case of scenario-based design, they can aid the design process.

Traditional scenario-based design (versus context scenario use) has been criticized for lacking a main character; therefore lacking the ability to empathetically engage designers. Persona proponents argue that context scenarios are a powerful adjunct to personas by going beyond a mere description of the user, by describing the user in an activity in relation to a product or service. Proponents also claim context scenarios work as conduit of user information because humans are predisposed to consuming information via storytelling.

## **Personas and Scenarios: conclusions**

Personas and context scenarios are created to make envisioned user interactions with technical systems explicit. Persona proponents argue that they work well together; personas provide the actors that represent users, scenarios provide the context describing user activities in relation to a product or service. In this investigation, I explore their utility as summarizations and communication conduits of user research.

If personas and context scenarios are effective at improving the Designer-User relationship, as their proponents claim, then it is clearly dependent on many variables – variables this dissertation hopes to help disambiguate. However, it is impossible to actually measure the impact of personas and scenarios on a design process, as Mulder and Yaar (2007) recognize when they state, “did personas cause that 22-percent rise in conversion rate or was it the usability test you ran, or the senior designer you hired?...It is more likely a combination of factors.” The authors call for a ‘controlled experiment’ to measure persona results. Other authors have discussed the return on investment (ROI) for HCD methods and UX research in more detail (Bias & Mayhew, 2005).

While a controlled experiment to determine the ROI of personas and scenarios is beyond the scope of this dissertation, TC theory suggests that for personas and context scenarios to be effective conduits of the negotiated mock user they need to: (1) guide designers towards creating a consistent clear interface for the mock user which will in turn help the real user adopt the role of the mock user; (2) be understandable and usable by the intended audience (i.e. designers) which in turn requires an audience analysis; and (3) be credible to designers so they are persuaded to utilize them and accept the role of the mock designer. The next chapter will outline the methods I used to explore the research questions driving this investigation.