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Designing for imaginary friends: information architecture, personas and the politics of user-centered design[1]

Adrienne L. Massanari
Loyola University Chicago, USA

Abstract
This article considers the problematic relationship between new media designers and users in current texts written about user-centered design (UCD) techniques. To better understand and solidify the importance of the user within the technological artifact, these designers often create 'personas' – prototypical users with names, faces, interests and preferences. Personas serve as boundary objects used as conceptual stand-ins for users when team members make design decisions. This article traces the discursive construction of the 'user' within web design texts and how these texts describe the persona technique. The analysis suggests that the use of personas is motivated as much by political realities within new media organizations, as it is by the desire to address user needs. In addition, it is argued that personas serve to reinscribe the conceptual separation between the user and designer despite technological developments (like Web 2.0) that blur this boundary.

Key words
boundary objects, discourse, information architecture, interaction design, new media organizations, personas, politics, user-centered design

Introduction

Designing technologies with the needs and wants in mind of those who will be interacting with them seems like an obvious way to ensure their successful adoption. But, as those working within user-centered design (UCD) argue, designers and developers often design for themselves, 'mistakenly assuming that they're part of the intended audience for the site. Unfortunately, this is seldom the case. Most web users are not nearly as

Corresponding author:
Adrienne L. Massanari, Loyola University Chicago, School of Communication, 820 N. Michigan Ave, Water Tower Campus, Chicago, IL 60611, USA.
Email: amassanari@luc.edu

technically savvy as most web developers. . . . Most web users don't find quirky web sites an interesting puzzle to solve. Instead they beat a hasty retreat' (Fleming, 1998: 29). And, despite a profound desire to understand users and their needs, 'the communication between the creators and users of environments often remains uncomfortably remote' (Lawson, 2006). While many designers agree on the problem – that users' needs may be inadvertently ignored during the design process – how to integrate their needs is an ongoing debate within the interface design world.

A recent book about interaction design on the web offered the following advice: 'Understand users, then ignore them' (Hoekman, 2007: 17). This instrumental (and inadvertently paternalistic) view of the user characterizes many web design texts. In addition, such a seemingly contradictory perspective highlights the tension between user and designer – suggesting that the importance of users to the design process is minimal, or at least varies throughout a product's lifecycle.

In this article, I explore the way UCD approaches, specifically those used in interaction design and information architecture (IA),[2] confront the sometimes problematic relationship between designers and the 'users' for whom they design. I argue that most design discourse embodies a fundamental contradiction between publicly presenting designers/IAs as 'user advocates', while simultaneously reinscribing certain tropes of the user through their professional practices. In particular, certain tools used by designers naturalize a division between 'user' and 'designer' despite rhetoric espoused by experts within these fields that such approaches refocus the development of interfaces on the situated needs of users. This research grows out of a larger body of work regarding the discursive construction of IA (Massanari, 2007). Texts analyzed herein consisted of recent white papers, blog and mailing list postings, and books written by experts within the information architecture, interaction and user-centered design fields. My approach to discourse analysis is influenced by the work of Michel Foucault (1972), James Paul Gee (1999), Nelson Phillips and Cynthia Hardy (2002) and Norman Fairclough (2003).

This study also addresses an under-researched area within new media studies and communication: the practice/profession of interface design and IA. While scholars have investigated the role that organizational structure, corporate ownership and education influence the daily practice of other communication professions such as journalism (see Deuze, 2005; Fuller, 1996; Gans, 1980; Tuchman, 1978), both new media and communication scholars remain relatively silent regarding the professional practices of those responsible for the increasingly wired world in which we live. This is surprising, given the number of individuals who argue that technological design is ultimately a communicative (and persuasive) practice (Hasle, 2006; McCullough, 2004; van der Geest, 2001). In addition, while disciplines such as industrial, graphic, architectural and product design have warranted extensive interest from the design studies perspective (Bennett, 2006; Buchanan, 1989; Cross, 2007; Cuff, 1991; Lawson, 2006), the professional practices of web designers remain a relatively underexplored domain.

The discursive construction of the 'user'

Despite the casual use of the term 'users' throughout the web design community to represent all of the varying individuals who are likely to interact with a technological

product, users are diverse and heterogeneous. As Hugh Mackay et al. (2000: 738) argue, 'users are not a monolithic or straightforward group, but are complex and fragmented in nature, and are attributed with varying significance'. In this case, the 'user' may be functionally quite different. Technology creators often describe a number of different 'formulations of "users ", … [including,] "the right user", "end users", "user principals", "sponsors", "super users", "skilled users", "user managers," and more' (Mackay et al., 2000: 738). In these cases, the term 'user' suggests not just a category of people who represent a specific set of demographic characteristics, but it may also be used to classify various individuals who interact with the artifact during its development over time – perhaps influencing its overall design, technical approach, advertising, branding and use.

However, design practices often limit the ways in which we conceive of (and design for) the diverse users who actually interact with technological artifacts over time. In particular, designers may attend to only certain kinds of users and uses, and neglect others. One of the most extensive explorations of the interpretive flexibility inherent in the word 'user' comes from Andrew Friedman (1989), who thoroughly explored the early history of computing systems in his work. He noted the extreme variation inherent in the use of the term as it could simultaneously describe internal employees, external customers, systems administrators, etc.

Individuals working within science and technologies studies (STS) have proposed various approaches to understanding the role of the user and his/her relationship to technological objects. For example, Nelly Oudshoorn and Trevor Pinch (2003) explore a number of ways scholars interrogate the role of the user. All of these approaches argue for an increasing focus on not just artifact behavior, but its impact on the user's environment. Additionally, many STS scholars note the importance of the ways 'use' is constructed through discourse, especially how certain uses are encouraged and others maligned (see Pinch, 2003; Schot and de la Bruheze, 2003; van Oost, 2003).

As Edward Tufte pithily notes in his information design workshops, the only individuals that regularly employ the word 'user' to talk about their customers are web designers and drug dealers (cited in Bisbort, 1999: para. 43). While we may be at a loss as to how we should discuss those on the receiving end of interfaces if we do not call them 'users', Tufte's point is well intentioned. Such language invokes the notion of those who use technologies as being merely appendages to these systems with little or no autonomy of their own; the focus of their use becomes strictly technological (McCullough, 2004).

Researchers from design studies, like Redström (2006), problematize the shift from designing an 'object' to designing a representative/perfect 'user' – especially if this imaginary 'user' is not situated within a specific context. This approach is in direct opposition to contemporary work in HCI (human–computer interaction), where the rhetorical power of including the 'user' in the phrase 'user-centered design' de-emphasizes the role of the producer in the hopes of creating products that are humane and meet the needs of those who use them. This approach, however, implicitly positions users as victims of technological systems, instead of co-creators of the artifacts with which they engage (Spinuzzi, 2003). Unfortunately, the development of technological artifacts has very often placed the artifact at the center of the design process, expecting users to conform to

the system, rather than the system's design mirroring user needs. In the following, I highlight three different types of tropes common in HCI and UCD discourse: the 'stupid user', the 'user as victim' and the 'user as co-creator'.

The 'stupid user' (systems-centered design)

Early traditions in technology development suggested that the user was subordinate to the machine (this perspective is detailed in Laurel, 1990). Two different tropes emerged as a consequence of this perspective, both of which position users at the periphery of system development. The first involves the assumption by technological creators that they themselves are prototypical users. This positions the designer/developer in the role of the user; functionality and interface options are designed to fit the kind of site or application that the designer would find useful. It is important to note that such an approach to design is typically unstated or unconscious. This sort of developer-centered design, especially in an era when usability testing and UCD approaches are gaining a foothold in most organizations, may be the unintended result of political and financial pressure on design teams. Without a commitment to understanding the ways in which the audience for a particular product differs (demographically, cognitively, experientially, etc.) from the design team, the 'design for oneself' mentality is likely to guide the development process, even if the term 'user' is bandied about.

The second trope suggests that users' interactions are problematic, unpredictable, uncontrollable and chaotic, or somehow 'stupid' (refuted in Nielsen, 2001a). Systems-centered traditions typically view the software/site as inherently riddled with 'bugs' – errors, defects, or other (unintended) problems. Because of their perceived 'unpredictability', it is assumed that individuals' use of the product over time will reveal increasing numbers of these defects, even if it is a well-designed product. Even though users might be required to employ extensive 'work-arounds' to complete common tasks, developers may be reluctant to address these bugs, especially if they require a complete overhaul of the software (Friedman, 1989). The system, from this perspective, works – even if it does not fit users' cognitive models or even their needs. As Michael Salvo (2004: 63) argues, in systems-centered design, 'human participation is limited to resisting, rejecting, or requesting a change in the newly designed technology' – essentially, users are relegated to the peripheries of the design process.

Users as victims of bad design (user-centered design)

In contrast to systems-centered design, user-centered design structures the development process around users and their practices. It involves 'active user participation' in the form of user research (interviewing, contextual inquiry, etc.) and usability testing, and typically encourages an iterative development cycle where prototypes are continuously refined after being tested with users (Gulliksen et al., 2003). The UCD approach suggests that designers (and IAs in particular) serve as 'user advocates' throughout the design/development process (Rosenfeld and Morville, 2002). While encouraging a focus on actual users not present in system-centered design approaches, UCD methods do not entirely ensure user 'acceptance' of a particular design. Ethnographic research of teams utilizing these techniques has revealed that the 'real-world' implementation of UCD does

not relieve them from political, financial, relational, or definitional conflicts between team members and/or between the team and management, which may ultimately derail the project (see, for example, Gulliksen et al., 2003). In addition, some scholars suggest that while teams may rhetorically conform to UCD principles, the reality of the design and development process (the actual practice) may be quite different (Oudshoorn et al., 2004). The rhetoric of UCD relies upon the notion that considering the 'user' during the development cycle ultimately improves the final product. As some critics have noted, such an emphasis on the user is often driven by market, rather than humanistic, concerns: 'users are held to be "a good thing" because their involvement improves requirements, so it leads to better systems. . . . Indeed, systems are defined as "better" precisely because they meet user requirements better' (Mackay et al., 2000: 738). Thus, UCD techniques may be criticized for an overemphasis on 'figuring out' the user and their immediate needs, rather than focusing on their long-term use of a product.

Individuals within the UCD tradition suggest users are in some ways incapable of asking or telling designers what they really 'want' out of a product (see, for example, Nielsen, 2001b; Schaffer, 2004). As one author notes, 'Users and clients typically speak to you in terms of desired features and solutions, not of needs and problems' (Tidwell, 2006: 4). Thus, users are presumed to be poor designers (see, for example, Cooper, 2004; Cooper and Reimann, 2003; Hoekman, 2007; Nielsen, 2001b; van Dijck, 2003). Because 'few users are consciously aware of or are able to clearly articulate their goals,' and 'tend to focus on low-level tasks', their inclusion in the design process causes difficulties (Cooper and Reimann, 2003: 6). Presumably, this inability to focus on goals, and difficulty to 'think like a designer', means that including users within the design process would both slow it down and make the final product difficult for others to use.

As a result, the usability engineer or IA conducting the usability test is ultimately responsible for translating problems users have when interacting with the product into concrete solutions. In a worst-case scenario, the user's actual participation in the design process is non-existent; they may only be viewed as additional data points to be 'mined' by the development team. While it may be useful to watch 'users' interact with technology in addition to discussing their needs/wants, there is a danger in simply dismissing the user's thoughts altogether. As Clay Spinuzzi (2003) notes, these techniques create a very strong delineation between 'user' and 'designer' – often discounting tacit and situated knowledge the user has about his/her interaction with a technological artifact.

This division is often reinscribed in UCD discourse. Advocates of user-centered design often suggest that failures within a user community to adopt a particular product may be 'a matter of insufficient knowledge about people, their capacities, needs and desires' (Redström, 2006: 123). Increasingly, designers are encouraged to 'create empathy with the audience for which they design' (Forlizzi and Lebbon, 2006: 51). Thus, interviewing potential users, testing prototypes with them and conducting usability tests become an important way to understand the user's interaction with a particular design. However, such well-intentioned approaches continue to perpetuate a mindset where users are considered objects, and design becomes an activity of making users 'fit' into the designers' preconceived notion of how the design will be used. In addition, researchers argue that although UCD purports to turn away from 'the developer knows best' toward 'the user knows best', these techniques often 'fail to identify uses, needs, and

problems that users and developers might not independently envision' (Gay and Hembrooke, 2004: 18–19).

The trope of the user as a victim of poorly designed software rife with usability flaws is complemented by the image of the designer as their savior. Spinuzzi argues:

> The worker-as-victim is portrayed as needing to be rescued by a heroic figure, an information designer. This heroic figure is enlightened, principled, and capable, and is able to employ user-centered design methods to defeat the tyrannical system and rescue the victims . . . the designer listens to the worker-victims, synthesizes their comments and feedback, and develops the means of their rescue. (Spinuzzi, 2003: 2)

These texts sometimes position the designer as impartial interpreter, who advocates for the users without interjecting his/her own agenda. As most sociotechnical theorists would argue, such a perspective ignores the realities of technological design (Bijker, 1993; Callon and Latour, 1981; Latour, 1992).

Users as co-creators of artifacts (participatory design)

Although scholars working within the STS tradition have long argued that users are co-creators of the artifacts with which they interact after-the-fact (see, for example, Bijker and Law, 1992), participatory (Mueller and Kuhn, 1993; Schuler and Namioka, 1993) and activity-centered (Gay and Hembrooke, 2004; Kaptelinin and Nardi, 2006; Tarbox, 2006) design approaches openly enlist the users as co-designers throughout the design process. Unlike traditional systems-centered design methods, participatory approaches do not perceive users as a problem to be fixed; they are, in fact, a critical source of knowledge about how they work and how the technological systems can best support that work. And, in contrast to UCD, participatory design integrates user input throughout the design process and is not limited to the usability testing phase of the development cycle.

Advocates for participatory design argue that there are both practical and political reasons for encouraging user participation. First, they suggest that both designers and users benefit from a 'mutual learning process . . . [which] supports developing a shared understanding of the problems that the design project aims to solve and helps anchor the proposed solutions in the business organization' (Bødker et al., 2004: 58). Second, this tradition argues that users have a right to participate in and change their own working environments (Bødker et al., 2004; Mueller and Kuhn, 1993). Other scholars suggest that systems designed to support creative modification are inherently more pleasing for individuals to use over time. As Eric von Hippel (2005) argues:

> Democratization of the opportunity to create is important beyond giving more users the ability to make exactly right products for themselves. . . . The joy and the learning associated with creativity and membership in creative communities are also important, and these experiences too are made more widely available as innovation is democratized. (von Hippel, 2005: 123–4)

Von Hippel refers to this approach as 'user-centered innovation' – and suggests that organizations producing technological artifacts must embrace this reality or accept the fact that their products will increasingly be outpaced and outmoded by their target

audiences. As David Hendry (2008) argues, the democratizing potential of such innovation is most likely to be realized if relationships between developers/designers and users shift dramatically. He proposes the following guidelines for empancipatory technological development, which is closely related to other participatory design methods:

1. Any development process makes a particular commitment for involving users;
2. Advances in information and communication technology have increased the range of possibilities for involving users in software design and development;
3. A design methodology can be structured to support the emergence of roles (role differentiation);
4. User roles need to be supported by tools that facilitate particular kinds of discourse (role discourse demands);
5. User roles and the accompanying conversational spaces can become a valuable resource for the design and development team . . . (Hendry, 2008: 555).

These guidelines encourage technology designers to view users as co-designers possessing a wealth of tacit knowledge that cannot be tapped into by traditional UCD means. This approach also mirrors technological developments such as Web 2.0, where users and designers implicitly act as co-producers of content – in effect, 'co-designing' these spaces (Massanari and Foot, 2007).

Understanding the 'user' through personas

A challenge to any emerging field is the relative looseness and lack of cohesive, codified methods used in its practice. Information architecture is no exception, and as a field that draws from a number of diverse disciplines, the methods practitioners use to do their work are unique. In this section, I examine a commonly used technique, personas, employed to create site (or product) features and design for a specific user base. Personas are narrative descriptions of user 'types' for whom a product is designed. Proponents of personas suggest they facilitate empathy between designer and user and highlight important information about users that might otherwise be lost or discounted during the development cycle (Cooper, 2004; Cooper and Reimann, 2003). As I mentioned earlier, the term 'user' has a diversity of meanings and often becomes a point of conflict between team members. Advocates for personas argue that they defuse these tensions. However, I contend that personas are political tools that may oversimplify important differences between individuals using technological artifacts.

The development of personas as a conceptual tool has its roots in market segmentation analysis, where specific target audiences for whom a product would be designed would be turned into 'prototypical' users (Brown, 2007; Cooper and Reimann, 2003; Wodtke, 2003). Unlike market segments, however, personas are rooted in 'user behaviors and goals' rather than 'demographics and distribution channels' (Cooper and Reimann, 2003: 63). Dan Saffer (2007) argues that personas are critical for designers in their quest to move beyond simply creating a product for 'the users' to specific, identifiable persons.

Despite their argument that personas be limited to what is known about the site's (or product or technology's) end-users, personas can be quite rich in their final form.[3]

Typically, a persona consists of a name with demographic information, goals, desires and personal details woven into some sort of narrative (Kolko, 2007). Additionally, most personas include a picture of the person who best represents that persona (see, for example, Kolko, 2007; Mulder and Yaar, 2007; Wodtke, 2003). As Christina Wodtke (2003: 174) notes, 'the more real your personas are, the more likely you are to care about their successes or failures and the more likely you are to design a good experience for them'.

Alan Cooper, principle at Cooper Interaction Design, is credited with developing the persona technique (describing it variously as both a 'tool' and a 'method') in his book, *The Inmates are Running the Asylum* (2004). Personas are a part of a larger methodological approach to understanding and designing for users, which he refers to as 'Goal-Directed Design'. Cooper (2004) describes a persona as '*a precise description of our user and what he* [*sic*] *wishes to accomplish*' or, '*hypothetical archetypes* of actual users' (pp. 123–4; emphasis in original). While he is transparent about the fact that these are not 'real people', he argues that 'they are defined with significant rigor and precision' despite being imaginary (p. 124). Cooper argues that the strength of using personas, in conjunction with other UCD practices, is their ability to sensitize and focus design and development processes on appropriate functional requirements that meet the needs of their target audience. In addition, personas are leveraged as a way to defuse conflict or disagreement among team members when discussing possible design solutions (Cooper and Reimann, 2003) – more on this political use of personas later.

The persona technique assumes that IAs and other designers are unable to connect fully to their users unless they create archetypes to which they can refer throughout the design process. Despite the notion of designers being sympathetic and interested in their audience's goals, the creation of a narrative around each of these personas somehow solidifies the identity of the user in the designer's mind in a way that typical user research does not. As authors of one book on personas note, 'Personas help you live in your users' shoes. As you use personas, they start to feel like real people' (Mulder and Yaar, 2007: 23). Jesse James Garrett (2002: 56) echoes this perspective, suggesting that personas 'can be printed out and posted around the office so that when we have decisions to make we can ask ourselves, "Would that work for Janet? How would Frank react to it?" The personas help keep our users in mind every step of the way.' Thus personas can attune the IA to particular user needs and perhaps focus design decisions in a way that just referring to 'users' as a generic group may not.

It is important to note the relative homogeneity of personas – even if the potential audience for a design is vast. As one Microsoft team observes (Pruitt and Grudin, 2003), their personas are predominately American (although they are aware of the international audience who uses their products) and do not reflect a range of (dis)abilities. Thus, personas are potentially reductive and limit the time and consideration given to accessibility issues, in contrast to participatory design techniques that directly enlist users' participation within the design process.

Personas and politics

Personas are implicitly political tools within organizations. For example, Alan Cooper and Robert Reimann (2003: 57) mention that personas 'resolve three user-centered

design issues that arise during product development: the elastic user; self-referential design; and design edge cases'. However, their unique form may make adoption within new media organizations difficult. Some researchers argue that personas can only be used successfully if the entire team employs them regularly and consistently – otherwise, their use can actually exacerbate the political reasons for which they may have been employed in the first place (Rönkkö et al., 2004). Still others note the difficulty in moving personas from mere showpieces in design meetings to relevant tools employed by all team members (including project stakeholders, project/program managers and developers), especially when the designers using the technique experience 'distrust' of these archetypes and their overall representativeness (Blomquist and Arvola, 2002). Contrary to Cooper and Reimann's assertion above, both of these perspectives suggest personas are not a 'cure-all' for problems arising during the design process.

Adoption of personas within organizations may be made more difficult by the perception that they may not be grounded in real data. As I mentioned earlier, IA experts warn against the potential dangers of creating superficial descriptions of users and masquerading them as personas. As Dan Saffer argues, 'half of the personas out there are entirely made up, with no user research to back them. In most cases, no one on the design team has talked directly to users to find out who they are, so designers come up with an idea of a user type. The resulting personas are like the designer's imaginary friends' (Saffer, 2005: para. 3–4). Given the perceived non-scientific nature of personas, and the difficulty in convincing others within the organization to refer to them during the design process, it is a bit surprising that they are used at all.

Mike Kuniavsky (2003) discusses the potential difficulties of convincing others that persona creation is worthwhile. He argues that personas (what he terms 'user profiles') are best created in a team setting, where all appropriate stakeholders can contribute to their development. While Kuniavsky does not state it explicitly, such an approach would likely circumvent later objections. Additionally, he argues that the persona method sensitizes group members to the needs of the users, creating what he terms 'an efficient shorthand' (Kuniavsky, 2003: 133). He notes:

> Rather than describing a feature for 'infrequent large-scale Fortune 1000 purchasers who use SAP', you can say, 'it's for Leonard' and marketing, engineering, and design will all know the qualities of the audience and how they will use the feature. 'Leonard' represents a shared understanding of a class of user experience issues that are important to the success of the product.
>
> The rest of the benefits of the procedure – the ability to understand subtle interaction problems, the coupling of people's desires with a model of their understanding, the team building – are side effects of this communication benefit. (Kuniavsky, 2003: 133)

Importantly, Kuniavsky (2003) and others (Norman, 2004; Pruitt and Adlin, 2006) suggest that the predominant benefit of personas is that they act as powerful communication devices, by refocusing the team and encouraging them to be sensitive to their users' needs and desires. However, employing the technique successfully means personas must be used consistently throughout the organization, which often requires the design team 'selling' the persona as though it were a product in-and-of itself. For example, one Microsoft team

notes their use of 'gimmicky' giveaways (mouse pads, office supplies, etc.) containing images and information about the personas in an effort to introduce and convince others of their value (Pruitt and Grudin, 2003). Steve Mulder and Ziv Yaar's (2007) *The User is Always Right* contains an entire chapter titled 'Keeping Personas Alive', in which they outline many different ways designers can promote the use of personas throughout their organizations. These include handing out baseball-like cards with stats for each persona to team members, creating posters and cardboard cutout pictures of the persona that can 'attend' design meetings and even setting up simulated offices or cubicles to show the physical environment in which the persona would work (Mulder and Yaar, 2007).

Marshalling the forces of the 'users' through personas can be an incredibly effective way of handling conflict within (and outside) the design team. If the entire company knows that a new product is being designed for three people – Bob, Shelly and Maria – and a person in upper-management suggests a new feature be added to the site or product that does not address the needs of any of these individuals, the design team can 'enlist' the personas and their needs as reasons why the new feature should not be added. For IAs and other designers, therefore, personas are an important conceptual shorthand that attunes them to the larger set of user data from which they are derived. For developers, personas may foreground user needs/desires that would otherwise go unaddressed. And, for business analysts and project managers, personas may help refocus discussions about functionality and reduce conflict between team members. In this way, personas can become both a valuable political tool and important boundary object (Bowker and Star, 1999) for team members.

Interpellation and simulation through personas

B.J. Fogg (2003) suggests that interfaces are inherently persuasive – that is, the designers who create them are interested in shaping user behavior to meet particular goals set out by the site's creators. Extending this idea, Per F.V. Hasle (2006) argues that IA practice in particular is at its core a rhetorical process. He writes, 'Surely IA-workers, while availing themselves of as much solid information as can be had about future users, still are . . . trying to imagine how future users will react to various features of the system to be developed' (Hasle, 2006: 10). This focus on future use can be tricky, as IAs anticipating future use are shaping what will constitute appropriate use and the affordances of the final product (for more on affordances, see Norman, 1998).

The persona technique, and other UCD approaches, creates an idealized version of 'the user' who represents those who will eventually interact with the design. Despite the empowerment rhetoric of UCD methods, the audience is still made subject to the design. Or, as Mizuko Ito (1997) argues, users are 'hailed' (in the Althusserian sense) through the interface. We recognize our own subject position (and tacitly agree to its formulation). Ito extends this metaphor to the interface, arguing, 'with mass media commodities like computer games, we might considered the stabilized text and technology as a similarly powerful formation, able to hail, interpellate, and construct subjects in relation to its preformulated content' (Ito, 1997: 3–4).

So, the designer in this case 'hails' the individuals using her/his creation – constructing what is and is not 'appropriate' use of the object. Thus, interface choices made throughout the design process by IAs (e.g. will a particular e-commerce site allow individuals to

purchase items without a credit card?) create an idealized subject and constrict user behavior. At the same time, interfaces, like other media content, are potential sites of resistance and resistive practices (see Hall, 2001; Spinuzzi, 2003).

Nelly Oudshoorn (2003) notes that STS have long considered users from a 'sociological' perspective, where particular individuals involved in the diffusion of a technology are the researcher's focus (see, for example, Rogers, 2003). However, she argues that STS scholars are now examining the assumptions designers make about potential users, and investigating their importance from a 'semiotic' perspective. The 'semiotic approach draws attention to users as represented by designers rather than to users as individuals or groups involved or implicated in technological innovation' (Oudshoorn and Pinch, 2003: 8). In addition, such approaches 'tend to reinforce the view that technological innovation and diffusion are successful only if designers are able to control the future actions of the users' (p. 15). Thus, the focus shifts away from the study of technological adoption by groups of users, towards the ways in which designers employ semiotic users to 'stand in' for the real thing.

Personas are representations of real people – people for whom IAs and interaction designers create. They are simulations of people, perhaps built on empirical evidence, but simulations nonetheless. However, at some point, these simulations of users ('Bob' or 'Maria') become, as Jesse James Garrett (2002: 54–6) suggests, 'more real' than 'all sorts of data'. From a semiotic standpoint, therefore, personas are actually simulacra (Baudrillard, 1995) – they (re)present copies of individuals who do not, ultimately, exist. While Cooper and Reimann (2003) suggest basing personas on real data, the technique still flattens differences between users in an attempt to create a composite user profile. And, personas can be collapsed even further. For example, Mulder and Yaar (2007) suggest using visual symbols as shorthand for each persona type, which can be included on design documents and on items handed out to team members. Users (and their complex, individual needs) are therefore reduced to one-dimensional signs, further reducing their 'presence' within the design process.

This becomes problematic when these symbolic users/personas are reified to such an extent that they become the primary focus of the IA's work and move beyond a conceptual tool. In his discussion of architectural drawings, Bryan Lawson (2006) argues that this sort of 'icon trap' can easily overtake the work of designers, as their focus becomes the style/design of their drawings, rather than the spaces these drawings are meant to represent. He writes, 'It is all too easy for the designer gradually to become more interested in what the drawing looks like in its own right, rather than what it represents' (Lawson, 2006: 229). In the same way, IAs run the risk of confusing the persona (as a design tool) for the actual users it represents. Time spent crafting the persona and 'selling' it to other team members may actually further distance the IAs from the users for whom they are designing.

As I mentioned earlier, personas are predicated upon the idea that designers require some sort of detailed description of a person, rather than just a body of 'users', to create a successful design. But, unlike participatory design methods that enlist those who will be using a particular design as participants within this process, personas are controllable simulations that can be invoked to reduce conflict or win certain political disputes within the design team.

Conclusion

In this article, I have discussed various approaches to technological design – from those that place the system at the center of design and expect users to conform, to those that mirror and complement users' cognitive models. Both approaches, however, stand in contrast to participatory methods that acknowledge the role users play in co-construction of the design. While we might expect IA discourse to embrace and encourage participatory design approaches, I argue that these methods remain underutilized. More surprisingly is the fact that IA discourse continues to reinscribe many of the tropes traditionally associated with user-centered and systems-centered design, both of which implicitly marginalize the individuals interacting with technological devices. A possible explanation for this may be the longer-term history of UCD methods, which increases their visibility and perceived acceptance over more non-traditional participatory design approaches. Whatever the reason, *user needs* remain central concerns within the design process, but incorporating *actual users* in the design process still remains relatively uncommon.

At the same time, the increasingly embedded nature of technology into our everyday lives (McCullough, 2004) and advances beyond Web 2.0 (O'Reilly, 2005) will likely require innovative approaches to user research. This may result in 'expanded opportunities for practitioners and the possibility of developing new hybrid forms of practice and discourse. Subsequently, this suggests new forms of consumption for audiences, users and/or co-creators of the objects produced' (Marshall and Pengelly, 2006: 121). Thus, larger numbers of designers may become willing to embrace approaches like participatory design. While including users as co-designers during the design process may remain a relatively innovative practice, it is likely that this approach may become more appealing to new media designers as they realize the limitations of strictly user-centered design approaches.

The professional practice of interactive design deserves more attention from new media and communication scholars. While we have often focused on the social and cultural impacts of technological artifacts, we have remained relatively silent as to the ways in which professional practices and organizational behaviors shape these products. Tracing the development of an artifact from concept to prototype, how tools like personas shape these designs and what constitutes 'appropriate' use of the final product would be beneficial in understanding the very real consequences these practices have on the design and use of new technologies. In addition, case studies and explorations of the lived experiences of information architects and interaction designers are vital if we seek to fully understand the complex relationship between users and designers.

Notes

1 The title is borrowed from an article about the persona technique in which bad personas (those not grounded in user research) became 'the designer's imaginary friends' (Saffer, 2005). Earlier versions of this article were presented at the Information Architecture Summit 2009 (Memphis, TN)

and the International Communication Association 2009 (Chicago, IL) conferences. Many thanks to the anonymous reviewers whose comments on earlier drafts helped improve this piece.

2 Information architecture (IA) is a field concerned with 'users, content, and context' (Rosenfeld and Morville, 2002: 23). In this article, the abbreviation 'IA' is used interchangeably to mean information architecture (the field) and information architects (those who practice IA).

3 An example of a persona can be found at http://www.7nights.com/asterisk/sara_locke.gif (consulted 15 July 2009).

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Adrienne L. Massanari is an Assistant Professor in the School of Communication at Loyola University Chicago. She is the co-editor, with David Silver, of *Critical Cyberculture Studies* (NYU Press, 2006) and is a practicing information architect/usability consultant.