The UX of Avatar Customization

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ABSTRACT
Avatar customization is a feature that is offered in many computer and video games. Customization options are presented to users via Character Creation Interfaces or CCIs. CCIs differ greatly between games, independent of genre, with regard to the quantity and quality of customization options available. In addition, the way in which these options are presented to users differs from game to game. Research on avatar customization is typically focused on user-avatar identity or self-representation. In general, we have found that the User Experience (UX) of avatar customization has been greatly overlooked in academic literature. As such, we look to existing research on UX in order to propose how its methodologies may be used to study the impact of CCI affordances on player experience in games.

Author Keywords
Avatars; Affordances; Identity; Interface; User Experience

ACM Classification Keywords
K.8.0 General - *Games*.

INTRODUCTION
Avatars are digital-visual bodies; graphical representations of the user in a virtual environment or game. Many games allow users to customize their avatars via interfaces, referred to as Character Creation Interfaces or CCIs. Avatar customization in digital games and virtual worlds have been widely studied (e.g., [27, 28]), but much of the work on self-representation is largely focused on identity in online spaces, utilizing distance methods (e.g., online surveys), and self-reporting (e.g., [2, 4, 11]). While the resultant data is of value to the HCI community, it does little to tell us what happened *in-situ*. In other words, what material and social circumstances were at play when the avatar was created and what impact, if any, did these circumstances have on choices the user made and player experience?

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CCIs differ between games, both with regard to complexity and presentation of customization options. The affordances - or action possibilities [24] - of each CCI are then negotiated by users as they go through the process of customizing their avatar.

In order to better understand how CCIs are leveraged by users in-game, we look to User Experience (UX) research and its methodologies. We propose that the use of such methodologies provides us with meaningful data on the effect of CCI affordances on player experience. We believe that such data can both support scholarly work on identity in games, and to inform future CCI design practices.

CHARACTER CREATION INTERFACES

Figure 1. Character Creation Interface in EVE Online.

CCIs differ greatly between games, independent of genre, with regard to the quantity and quality of customization options available. In addition, the affordances of these CCIs differs from game to game. Consider the CCIs shown in Figures 1 and 2 for *EVE Online* and *RuneScape 3* respectively.

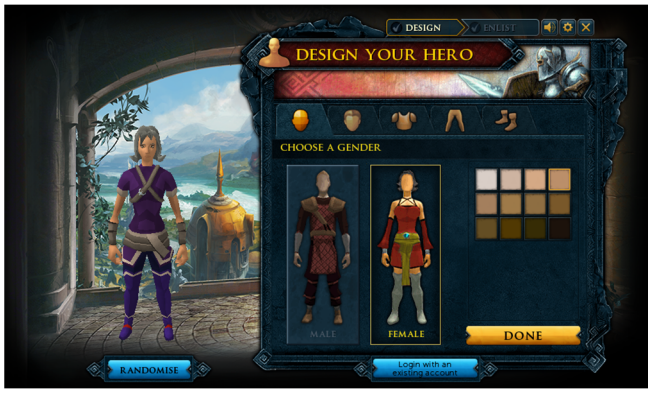

Figure 2. Character Creation Interface in RuneScape 3.

Although both games are Massively-Multiplayer Online Games (MMOGs), *EVE Online* represents a graphics-intensive, subscription-based game and *RuneScape* is a free-to-play browser-based game. *EVE Online* offers a complex CCI that allows users to create realistic looking, highly-detailed humanoid avatars. Selections can be made in the interface using widgets and the avatar's physical features can be further modified by accessing the wireframe mesh via the CCI. Avatars in *RuneScape 3* are comparatively rudimentary, offering customization options for skin colour, hair and clothes, but no ability to change the avatar's body or facial features.

These are just two examples of how CCI affordances differ between two MMOGs. In addition to the interface widgets noted above, some CCIs require that users scroll through long lists of customization options, or access additional options via sub-menus. All of these affordances have an impact on self-representation in each of these games.

RELATED WORK

Although avatar customization has been widely studied, much of the related work in this area is focused on identity and is commonly investigated via distance methods, such as surveys and online ethnography (e.g., see [2, 4, 11, 22]). Studies such as these focus on the kinds of "bodies" and identities users craft in Massively-Multiplayer Online Games (MMOGs) and social virtual worlds. In both of these papers, the authors focus on the choices users make in customizing their avatars and how identity fidelity (how "accurately" they represent themselves via avatar appearance) contributes to an understanding of the pragmatics of self-representation online. For example, papers by Ducheneaut et al. [4] and Kafai et al., [11] utilize survey and online interviews to collect data on the self-representational practices of MMOGs and social virtual worlds. Using the self-reported data collected from their participants, both papers report that users' avatar customization preferences could be grouped under one of three or four trends (e.g., the desire to create a representative avatar, the desire to create a new online identity, or the desire to create an avatar that follows a popular trend in the virtual world).In these papers, and others like them, avatar creation interfaces are presented as tools that help users create an online identity. These papers are often methodologically centred on users and commonly utilize surveys to collect their data.

The preference for fieldwork or lab-based methodology, while less common in identity work involving avatars, is more prevalent largely in studies where researchers wish to observe offline behaviours that are strongly correlated to a specific effect (e.g., effect of avatar appearance on helping, motivation, etc.) [3, 10, 17, 29, 30, 32].

For example, Lim presents a study investigating the effect of avatar choice on player arousal in *World of Warcraft* [17]. Results of the study revealed that participants' ability to choose their avatar (rather than being presented with a pre-selected one) leads to greater arousal, especially for male players. Physiological data was collected to measure arousal, including heart rate, skin conductance, as well as self-reported data on emotional arousal and presence. Participants in the choice condition choose 1 of 6 prefabricated avatars. Participants in the no choice condition were provided with a prefabricated, preselected avatar. Avatars in both conditions were the same sex as the participant. Participants were not given the ability to customize their avatar.

In another study, Dolgov et al. [3] investigated the effects of cooperative gaming and avatar customization on subsequent spontaneous helping behaviour. Two studies were conducted in which participants were invited to play *Wii* games in a lab setting with a confederate or actor posing as another participant. Participants were invited to play with the confederate, either cooperatively or competitively, using either a generic or customized avatar. During the study, the confederate accidentally spilled a cup of pens and the researchers noted which participants helped the confederate pick up the pens, and how many pens they helped to pick up. The authors found that cooperative gameplay was a predictor of subsequent spontaneous helping behaviour, and more interestingly, cooperative players who were allowed to play with a customized avatar picked up significantly more pens than those who were not. However, the authors did not report on the avatar customization process, only the relationship between avatar customization and spontaneous helping.

Lastly, Ratan and Dawson [29] collected biometric data to assess avatar self-relevance - a kind of persistent emotional attachment to an avatar. Participants in the study played as an avatar, and then later observed (without controlling) the same avatar being beaten-up in-game. Psycophysiological data was collected and analyzed. The authors found that, in some cases, avatar self-relevance persists after use. The authors did study the effects of avatar customization on self-relevance, although CCI affordances were not the focus of their study.

While many CCIs offer an extensive range of customization options, research has shown that, through affordances, CCIs have the potential to represent socially exclusive values [13, 27]. Both the quality and quantity of customization options present in a given CCI determines how significant identity categories, such as gender and ethnicity, may be represented via avatar bodies (e.g., see [8, 16, 26, 20]). In each of these papers, researchers looked to interface analysis as a means to study the effects of affordances on social inclusion, but did not study user interactions with the interface.

Although well suited to qualitative studies on identity, we believe that such methods cannot be used effectively when studying the effects of CCI affordances on player experience. In order to address this limitation, we look to

UX methodologies as an alternative approach to the study of self-representation in virtual worlds and games.

UX

User Experience (UX) is a branch of HCI research concerned with the emotional and affective aspects of a user's interactions with a given artefact [7]. Although UX has proven to be a somewhat elusive concept, it is defined as, "a person's perceptions and responses that result from the use or anticipated use of a product, system or service" [9]. In the context of UX, perceptions include their emotional responses and beliefs, and responses include both physical and physiological responses.

Such a broad definition has resulted in the recruitment of a broad array of methodological approaches designed to collect emotional, perceptual, and physiological data of interest to UX researchers [25]. Research has shown that, even among UX researchers, the nature and scope of UX research is considered to be "dynamic, context-dependent, and subjective" [14].

User Experience research has been used in game development/studies and HCI research involving games [12, 15, 21, 31]. Notably, a recent paper by Nacke et al. [21] introduces a framework for utilizing UX methodologies in the study of serious games. The authors group popular UX methodologies by their relevance to three specific goals of assessment:

1. Assessing Game System Experience

2. Assessing Individual Player Experience:

- *Psychophysiological player testing*
- *Eye tracking*
- *Persona Modeling*
- *Game Metrics Behaviour Assessment*
- *Player Modeling*
- *Qualitative interviews and questionnaires (for gathering user-feedback)*
- *RITE Testing*

3. Assessing Player Context Experience:

- *Ethnography*
- *Cultural debugging*
- *Playability Heuristics*
- *Qualitative interviews and questionnaires*
- *Multiplayer game metrics*

In the following section, taking the limitations into account that were outlined in the related work section, we discuss a few scenarios in which UX methodologies may be applied to the study of self-representation in games. We believe that such methodological approaches may provide a more holistic theory of self-representation in games, and could support more robust design and development practices of CCIs in industry.

UX OF AVATAR CUSTOMIZATION

Our primary motivation in promoting UX methodologies for the study of avatar customization in games is to acknowledge that customization strategies are diverse, contextual, and social.

In our lab, we have used microethnography in order to study co-situated groups of players in games and MMOGs (e.g., see [18, 19]). Microethnography involves the simultaneous video capture of the game screen and the participants playing. Video data is then entered into behavioural analysis software (e.g., Morae, Noldus) and analyzed using interactionist modes of analysis [5, 6]. Through microethnographic study, we can gain valuable insights into the material and social circumstances that affect self-representational practices. Microethnographic methods can be combined with qualitative interviews and questionnaires to understand these observations in relation to participants' perceptions of their avatar customization preferences and strategies.

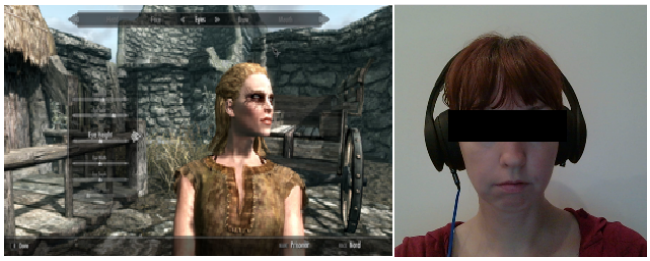

Figure 3. Participant creating her avatar in Skyrim - microethnography.

Although survey data has the ability to represent a large population and generate good statistical significance, surveys on avatar customization fail to provide researchers with information about how CCI affordances were negotiated by players, and how they came to create the avatar they are describing in their survey. Even if the survey includes questions that require the respondent to reflect upon this process, observational methods allow researchers to collect data on the avatar creation process.

In a lab-based setting, researchers could invite participants to customize (and subsequently play with) avatars. Researchers could collect psychophysiological data, eye tracking, or even microethnographic data (shown in Figure 3) to better understand the player's perceptions and responses while interacting with CCIs. Moreover, these approaches allow researchers to better understand the effects of CCI affordances on UX.

For example, when creating an avatar for play in an MMOG, players who wish to play together may collaboratively decide on which race and/or faction to choose when creating an avatar. As just one example, *Rift,* an MMOG developed by Trion Worlds in 2011, divides its six playable races equally between two warring factions: the *Guardians* and the *Defiant.* The skin colour choices available to the player are dependent on faction choice:

lighter skin tones are available to the *Guardian* races and darker skin tones are available to the *Defiant* races (see Figure 4). Players who wish to play together must choose the same faction, which has an impact on self-representation in that game. As Nacke et al note, "...the individual experience is also affected by the context in which playing happens" [21]. In the context of multiplayer microethnographies, multiplayer game metrics may be used to support analyses.

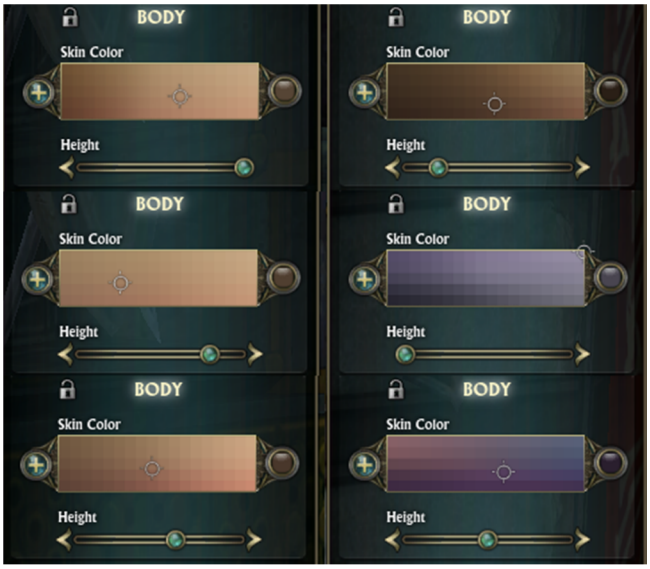

Figure 4. Skin colour palettes for the Guardian races (left) and Defiant races (right) in Rift.

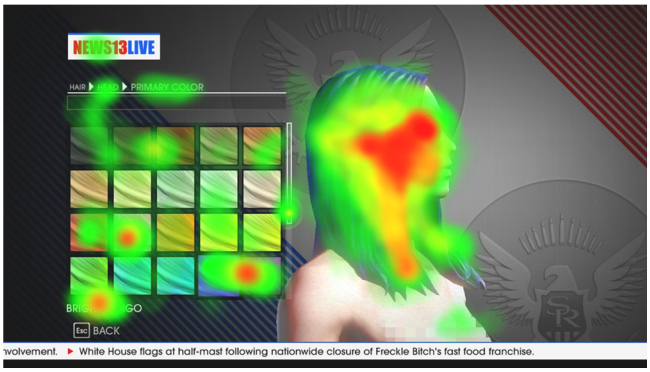

Figure 5. Sample heat map (eye tracking data) for avatar customization in Siants Row 4.

Eye-tracking has long been established as a useful data collection method to help researchers analyzing interface use [9]. Its use in UX methods can help to infer cognitive and attentional processes [1, 21], which can help researchers understand the effect of perceived affordances (of the CCI) on avatar customization. For example, some more complex CCIs may offer additional customization options in sub-menus. These choices are only available to the player if they understand that these sub-menus are available and how to access them [23]. In our own research, we have found that experienced players are usually aware of these sub-menus and will often access them, but novice players are not usually aware of these sub-menus and do not access them to see what other customization options are available [19]. Figure 5 illustrates how a heat map, generated from eye tracking data, can help researchers understand the cognitive and attentional processes involved in avatar customization.

DISCUSSION AND CONCLUSIONS

Avatar customization is just one facet of self-representation in online games. Interfaces used to customize avatars differ from game to game, both in terms of presentation and the range of customization options available. As gaming technologies continue to advance, CCIs may become increasingly complex. In order to understand how CCIs are leveraged by players, we propose that UX methodologies may provide more nuanced data, capable of supporting more robust theories on self-representation in games.

The resultant data could also help us improve upon CCI design. By understanding how interface affordances are perceived and leveraged by players, designers and developers may be able to design CCIs that are more accessible to novice players.

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