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The aesthetic turn

Exploring the religious dimensions of digital technology

The arena for developing digital technology has undergone an aesthetic turn, broadening the focus from a functionalist approach producing centralized systems in the 1970s and 1980s to an increased awareness of the aesthetic aspects of the individual user's interaction with technology in the 1990s and 2000s. Within the academic research fields studying digital technology (e.g. Human-Computer Interaction and Interaction Design) the aesthetic turn has resulted in a shift from a strong emphasis on user behaviour to an increased interest in aesthetic perspectives on the role of the designer, the design process, and the design material. Within these fields, aesthetics has often been interpreted as belonging to the realm of the individual; personal experiences such as pleasure, engagement, and emotions have been emphasized in both technology development and technology research. Aesthetics is not, however, only an individual phenomenon but also has relational and structural components that need to be acknowledged. Structural aspects of aesthetics condition the possibilities for individuals interacting with digital technology. Thus, the tension between individual and relational aspects of aesthetics in digital technology also reflects a tension between freedom and limitation; between change and permanence; between destabilizing and stabilizing forces.

Such a broadened understanding of aesthetics offers a model of digital technology that roughly corresponds to Mark C. Taylor's definition of religion. Taylor argues that religion is constituted by, on the one hand, a figuring moment characterized by structural stability and universality, and, on the other hand, a disfiguring moment characterized by disruption, particularity, and change. The purpose of this paper is to discuss the aesthetic turn and Taylor's definition of religion to illustrate similarities between the two, suggesting possible religious dimensions of digital technology and how that can inform our understanding of people's interaction with digital technology.

The aesthetic turn in digital technology

Up until the 1980s, designing computer systems mostly meant programming large, centralized systems for use in professional contexts (Grudin 1990). These systems aimed at task solving and were characterized by functionalism rather than aesthetic value. With the arrival of the personal computer, the focus for computer developers changed and focus came to lie increasingly on the software interface with which the user was to complete his or her task. The main goal of the system was, however, still to offer functional tools by which a planning, rational user could solve defined, professional tasks. Thus, the dominant view of the user was that of a rational creature driven by logic and cognitive rules (S. Harrison *et al.* 2007, Rogers 2012). In the 1990s, the aesthetic resources of the graphical interface became increasingly recognized, which, combined with cheaper technology and increased computer mobility, resulted in a paradigmatic change in the industry strategies surrounding computer development (Tractinsky 1997). With the computer now moving out of the professional context, controlled by centrally identified requirements, and into the everyday life of individual users, computer development moved from a strict functionalism to a broadened realization that interaction with computers has more layers than mere task solving. This does not mean that questions regarding functionality have been removed from the agenda, but that they

have been complemented with aesthetic aspects such as pleasure, enjoyment and user experience (Kao *et al.* 2016, Simbelis *et al.* 2016, Tractinsky *et al.* 2000, Udsen and Jørgensen 2005). Thus, through the aesthetic turn, emphasis in the industry has shifted from centralized systems in professional contexts prior to the 1990s to decentralized use in multiple, diverse environments.

While the aesthetic turn in the industry has meant a shift towards a diversified use of technology, the aesthetic turn in the academic research focusing on computer technology has led to new questions being posed regarding the designer and the design material (Bardzell 2009, Nake 2008). In the 1980s, much of the research done on computer systems was characterized by a focus on the actual user. For example, in the famous Utopia project, users were invited to participate in the development of computerized systems (Bødker *et al.* 2000). This work was often combined with a strong societal pathos and emphasized the need for improving work conditions for those who used the systems, which meant that research focused on topics like usability, ergonomics, and increased control through consistency of the graphical interface. The designers were considered facilitators in this development process which included activities such as workshops with representatives for both employers and employees. As computers took on new shapes beyond simple calculators and factory robots, and became an increasingly common component in society at large, a discussion concerning how to understand this new computational material emerged (Fernaeus and Sundström 2012, Jung *et al.* 2010, Robles and Wiberg 2010; Wiberg *et al.* 2013). What is digital technology? Can it be considered a new material or perhaps a composite material consisting of physical components as well as computational components (Vallgårda and Redström 2007, Vallgårda and Sokoler 2009)? In the quest for new methods and a new terminology that could grasp the complexity of the digital material, some researchers have turned to traditional crafts for inspiration and interpretative frameworks. In this process, aesthetics has become a central topic. This has resulted in designers frequently being discussed in terms of artists and crafts practitioners, and computer design in terms of artwork and crafts (Buechley and Perner-Wilson 2012, Dunne and Gaver 1997, Lindell 2012, Nitsche *et al.* 2014, Rosner 2010). Focus now often lies on the designer and the designer's ability to use the aesthetic properties of the digital material rather than on organized conversations with potential users concerning their needs for functional systems.

Aesthetics as an individual phenomenon

Within both industry and technology research, aesthetics is often understood from an individual perspective and defined as 'the feelings associated with the use and interaction with a system' (Ahmed *et al.* 2009: 565). A lot of the research exploring the aesthetic dimensions of technology in domains such as human-computer interaction and interaction design focuses on what individual users are said to experience (Andersen *et al.* 2011, Blythe *et al.* 2004; Harrison *et al.* 2015) and emphasizes qualities like emotions (Norman 2004), pleasure (Jordan 2000), and pliability (Löwgren 2007). This kind of research tends to focus on a very limited temporal view of the immediately observable interaction rather than the more long-term or indirect effects of interacting with technology. Questions focus on how the user experienced a particular interaction rather than exploring how this interaction is entangled with the historical layers of previous interactions or experiences as well as future expectations, hopes and fears. There are examples of research that focus on extending the temporal perspective and studying how a user's experience of an artifact changes over time (Sas and Whittaker 2013), but those initiatives are relatively rare and often focus on how to leverage these aspects for commercial purposes (e.g. Meschtscherjakov *et al.* 2014). The dominant strand of research following the aesthetic turn focuses on the individual's experience at the actual interaction moment.

The individual perspective is also prevailing in much of the research focusing on aesthetic aspects of the actual design process. In 1997, Dunne and Gaver suggested that one possible direction for future research in the domain of digital technology is through the concept artist-designer. They suggested that '[i]n this approach, the designer becomes a sort of applied artist, drawing on the issues and techniques raised in the arts to inform and inspire design' (Dunne and Gaver 1997: 362). In many ways, their vision has become realized through the increased engagement with questions regarding digital and physical materiality and the subsequent interest in crafts traditions that have emerged in Human-Computer Interaction and Interaction Design during

the last decade, as mentioned earlier. Much of this literature focuses on the creative process between the designer and the design material, often drawing upon parts of Donald Schön's concept of the material talking back to the designer (Fernaeus and Sundström 2012, Schön 1983, Sundström *et al.* 2011, Tholander *et al.* 2012); an idea that in this research sometimes tends to describe the creative process as almost disconnected from structural influences. Thus, in this research, the aesthetic aspects of technology are often reduced to individual experiences like enjoyment, entertainment, emotions, and creativity.

Aesthetics as a relational perspective

However, aesthetics is not just something individual. Aesthetics also has a structural side (Kairam *et al.* 2016; Kozmiańska *et al.* 2016). From viewing an artwork in a gallery to listening to a piece of music in a concert hall or even when streaming music online at home, there is a gateway to a public side of aesthetics. All of these aesthetic artifacts are composed of cultural resources and cues that are parts of a public domain. Furthermore, most often they are created for some sort of public consumption and presented in a public sphere.

Of course, the same goes for the aesthetic aspects of digital technology. Aesthetic resources like colours, shapes, sounds, and tactile feedback that an interaction designer uses to build an artifact are often commonly used signs that communicate certain affordances or interactive properties to the user, thus creating a recognizable pattern of potential interactive possibilities. Without this foundation of already established and recognizable patterns, interaction would become more difficult and much of the artifact's interactive properties and functions would probably not be discovered or utilized at all. Obviously, designers sometimes capitalize on this need for identifiable patterns and instead create artifacts that do not offer easily discoverable interaction opportunities in an effort to stimulate curiosity and engagement in an explorative relationship with the artifact. However, this confirms rather than contradicts how important the social and structural character of the aesthetic aspects of technology actually is.

Looking at everyday use of digital technology, many of our interactions with the aesthetic dimensions of technology are not particularly unique, but are, in fact, parts of larger societal structures. As I pick up my iPhone to take an aesthetically pleasing picture of the food on my plate and post it on Instagram or Facebook, it is not an act of pure individualism as if no one else has ever done a similar thing. On the contrary, it is part of a societal practice – the 'eat and tweet' trend – in which many other people also engage every day. The now so infamous selfie is another example of such a practice. Furthermore, not only the interactive behaviour as such, but also the experiences that emerge from interaction are influenced and coloured by other people's experiences. As I watch a YouTube clip or browse someone's Facebook photos, my experience is surrounded by comments, likes and IRL discussions with other people who have experienced the same artifact or aesthetic object, which means that other people's experiences are flooding into my own, just as my experiences are flooding into theirs. The aesthetic experiences never come in silos but are always situated in processes of sharing. One could probably go so far as to suggest that, not only are our aesthetic experiences influenced by structural contexts, but they are, in fact, entirely conditioned by these contexts. Repeated interactions such as taking a selfie and posting it online in social media eventually evolve into social practices without which most of us would not engage in this particular interaction at all. Thus, the social practice is the condition of possibility for interaction with aesthetic aspects of technology as well as for interaction in general.

So, these examples suggest that the individualism that has often characterized the aesthetic turn in digital technology needs to be complemented with social and structural perspectives on aesthetics. Engaging with the aesthetic resources of digital technology means acting in an environment characterized by both individual possibilities and structural conditions.

One interesting research example where we can see this tension between individual freedom and structural conditions played out in the use of the aesthetic resources of digital technology is the article 'Teenagers and their virtual possessions: design opportunities and issues' by William Odom, John Zimmerman and Jodi Forlizzi (2011). The authors have studied identity creation among teenagers, and describe how identity is constructed through the use of aesthetic resources such as photographs, customizations of mobile phones, avatars and so on. Through interacting with these objects, teenagers confirm who they are, but more importantly, they explore who they

want to become. The authors also illustrate how the process of identity construction is not taking place in a vacuum but is situated in spatial, temporal and social contexts. Some of the teenagers in the study attest that they have been unable to experiment with their identities to the degree that they wanted to in offline contexts, since their parents have not allowed certain kinds of expressions. However, they argue that the online environment offers specific opportunities through which such resistance can be reduced or altogether avoided. When the identity construction moves from offline to online arenas, teenagers are able to customize the publicness of their self-presentation through altering the privacy settings, thus targeting different audiences, for example on Facebook. Odom, Zimmerman and Forlizzi emphasize that the plasticity of the digital environment provides great opportunities for these kinds of existential explorations. However, the authors also identify a stabilizing tendency inherent in the online context which resists this very plasticity. They discuss the fact that, while there may be many creative opportunities in possessing different digital items, it is more uncertain how to dispossess these things when they have served their purpose in the identity construction process. In a material context, dispossessing an aesthetic entity like a picture or a trophy is an easy thing to do. In a digital context however, some of these digital entities are shared and co-curated, which complicates the task of leaving old identities behind. This creates 'an exacting history of who we are, leaving little space for romanticizing about the past and forgetting experiences we no longer wish to relive' (Odom *et al.* 2011: 1499). So, on the one hand, the online environment offers teenagers unprecedented opportunities to freely experiment with their identities without having to be questioned or challenged by their parents. On the other hand however, the online environment's records of historical sediments regarding who the teenager used to be, counteracts the flexibility previously mentioned.

Thus, Odom and others' description also illustrates another facet of the aesthetic turn: the tension between individual and relational aspects of aesthetics can be read as a tension between freedom and limitation; between change and permanence; between destabilizing and stabilizing forces, which, as we will see below, suggests that there are certain structural similarities between digital technology and religion.

The religious dimensions of digital technology

According to philosopher of religion Mark C. Taylor, religion is a system that is conditioned by two rivalling forces: one stabilizing and one destabilizing. Taylor argues that the western theological tradition has been characterized by, first of all, a foundational tradition focusing on aspects such as figuring, stability, clarity, and structure. This tradition grows out of Platonic realism, via Thomas Aquinas, through to twentieth century schools of thinking such as structuralism, and it emphasizes that meaning is something collective, universal, and temporally stable. The second tradition is a non-foundational strand that focuses on aspects such as disfiguring, instability, disruption, and events. This tradition draws upon a nominalist stance and has been developed by, among others, William of Ockham, Martin Luther, and more recently some of the philosophers formulating post-structuralist critiques of structuralism. This strand interprets meaning as a phenomenon of particularity that needs to be established by the individual in the moment. As a consequence of this analysis, Taylor formulates the following definition of religion: 'Religion is an emergent, complex, adaptive network of symbols, myths, and rituals that, on the one hand, figure schemata of feeling, thinking, and acting in ways that lend life meaning and purpose and, on the other, disrupt, dislocate, and disfigure every stabilizing structure' (Taylor 2007: 12).

Placing this definition next to the aesthetic turn in digital technology reveals some interesting similarities. As we have seen above, digital technology constitutes an arena that is characterized by both individual radicalism and collective, preservative forces. On the one hand, we have the individual who uses the aesthetic resources of digital technology to express him- or herself, experiment with new roles and positions, and create new identities in a quest for new meanings beyond the given ones. On the other hand we have the preservative character of technology that counteracts the radical and positions the individual within a structural, relational realm of social and historical sediments. It is at the intersection of these forces that digital technology provides an arena for existential exploration and creation, which resembles the definition of religion offered by Taylor.

However, does this mean that technology and religion are entirely interchangeable and that modern technology can offer all that religion has traditionally offered? Has technology replaced religion in

the twenty-first century? In order to answer these questions, we need to look closer at those dimensions that are the *sine qua non* of religion. According to Taylor, '[t]o function religiously, symbolic networks must address theological, anthropological, and cosmological issues. These three dimensions of experience are articulated in the interrelated figures of God, self, and world or their functional equivalents' (Taylor 2007: 22). So, in an effort to further explore the religious dimensions of technology, I will now focus on what digital technology has to say about these three dimensions.

It is evident that the many diverse artifacts and services that are included in the very broad term digital technology address anthropological and cosmological issues. This does not mean that we can study examples of very different kinds of artifacts such as an online game, a digital watch, and Facebook and expect to find a homogeneous, clearly defined account of the nature of self and world. On the contrary, the answers that digital technology offers to the anthropological and cosmological questions are complex and diverse. However, despite this complexity (a complexity that also characterizes religion, one might add), it is still possible to identify some main themes that characterize the arena of digital technology.

Looking at the anthropological dimension first, one of the most dominant perspectives on human beings that we find when we study digital technology is that the self is an autonomous individual with the cognitive, financial, cultural and social freedom to choose her own path forward in the complex artifact ecology. For example, the structure and functionality of technology encourages us to not listen to a whole album of music, but to instead create our own individual playlists; to become authors of our own lives through the creation of profiles in social media; to use different kinds of streaming services in order to customize movie watching and free ourselves from the limitations of broadcast TV schedules; to use banking software in order to control our own financial situation. So, much of the mythology describing the role of the human in relation to digital technology revolves around the opportunities to control, customize and appropriate not only technology, but as a consequence also one's own life-world, free from limitations brought about by structures that have been seen as oppressive towards previous generations; for example social, cultural and financial contexts.

On the other hand, digital technology also suggests that we as individuals are in need of social connections, which brings us to the question of how digital technology addresses the cosmological issues. Much of the power of these technologies lies in their ability to connect to a broad range of servers and services that can be utilized and channelled into one single artifact such as a cell phone. This means that the world we encounter as we engage with digital technology is, at the most fundamental level, a dynamic, connective tissue which, in fact, counteracts some of the utopian claims about digital technology as an arena for individual freedom. The structural aspects of digital technology also means that engaging in this connected world does not come free of charge. Apart from the obvious financial conditions regulating the use of the services, the logic of digital technology also entails a transaction cost of a more personal nature. To gain access to the digital world, we have to sacrifice parts of our personal integrity and make payments in the form of personal information regarding some of our most well kept secrets that are now being disclosed and recorded through our online behavioural patterns, for example, questions regarding our health, sexual preferences, political convictions, religious beliefs, family relations and so forth. So in a way we can suggest that in order to tap into the promises of the digital world, we have to surrender control of the very things that we hold most dear, a logic that has a lot in common with ideas of salvation through commitment which are at the core of many religious belief systems.

So, digital technology addresses anthropological and cosmological issues, but what about the theological issues? Does digital technology offer us a view of God, and if so, how?

In a traditional religious context, God is the one who creates the boundaries and the conditions for existence in the world. If we look at digital technology, it is not difficult to identify functional equivalents to this. In the mythology of the late twentieth and early twenty-first centuries, Steve Jobs and Bill Gates have emerged as the stable referents back to which much of the promises of digital technology points. Spanning from the extreme and utopian ideas suggesting that eternal life will be possible through uploading the human mind to cyberspace, to the more down-to-earth visions of technology improving life and health through altering the physical and cognitive conditions for human existence, the expectations

on digital technology in the twenty-first century can hardly be overestimated. These expectations are often narratively anchored in the success stories of people like Jobs and Gates. So, the curiosity and creativity of these young tech freaks have morphed into a foundational tale of the creative powers of the mythological figures Jobs and Gates. They have since been joined by people like Mark Zuckerberg (Facebook), Daniel Ek (Spotify), and Niklas Zennström (Skype) in a pantheon-like group of profiles who create the conditions for life in the digital world. If God can be described as a stable referent securing the meaning of the linguistics system (as Taylor argues), these entrepreneurs can be suggested to fill the roles previously occupied by more traditional religious figures. Adding a more anonymous and intangible player like Google to this pantheon, the theological connotations grow even stronger. The divine as a source of knowledge has always been at the core of religious life. In the digital world, Google constitutes the omniscient source of all knowledge. Whether we need guidance on the weather, how to treat an illness, or where to invest our money, Google is the authority to which we turn. Also, considering the amount of information that Google collects about us as users through our online searches and then combines with the company's highly secret algorithms, we face something like a dynamic, all-knowing entity that communicates with us through individually customized combinations of information. This has striking connotations with what religious traditions call God.

Concluding remarks

So, to conclude, I have argued that industry and research focusing on digital technology has mainly treated aesthetics as belonging to the realm of individual experiences, and that extending the interpretation of aesthetics beyond the individual and combining it with Mark C. Taylor's definition of religion constitutes a framework with which we can discover religious dimensions of digital technology.

There may be several benefits from exploring these terrains and allowing for knowledge gathered in the field of religious studies to feed into technology research. First, by drawing upon knowledge about religious practices when analysing technological practices, we can get a deeper understanding of the motivations and mechanisms underlying people's interactions with technology beyond the purely functional aspects. Second, by using knowledge about how individuals relate to religious communities, we can suggest alternative perspectives on how the actions of the individual and the structures of digital communities intertwine and condition each other. Third, drawing upon knowledge of how people explore and create meaning in religious contexts can illuminate questions related to individual and social expressions, sense-making processes and identity creation in digital contexts.

However, even though the approach taken in this paper provides new avenues for researching these complex, interrelated areas, it also raises some questions that need further clarification. First, what theoretical and methodological challenges will researchers studying the religious dimensions of digital technology face if, following Taylor, they use a definition of religion that includes not only the qualifier God, but also functional equivalents to God, and how should researchers tackle such challenges? Is there a risk that such an inclusive definition will collapse all religious, cultural and social systems into one and the same, and what would that mean to the researchers trying to study these areas? Second, broadening the study of the aesthetic aspects of digital technology beyond the individualist approach towards an interpretation of aesthetics as a social and structural phenomenon requires an exploration of other theoretical and methodological frameworks than those that so far have been dominant in the aesthetic turn in technology research. What possible resources are there in aesthetic domains that could be tapped into in such a development process?

Addressing these questions would constitute a possible next step in further developing this approach into a more stable research framework that could be used to discover and analyse connections between digital technology and religion. ■

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