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Transferability – A Wonder on the Ground of Design Research

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Introduction

Design as research is, by now, a familiar but tiresome theme within the Art and Design research community[1]. We seem to be eager to move forward beyond discussions. As the on-going review project "Practice-led Research in Art, Design and Architecture"[2] testifies, the debate might be advanced by showing examples. When there are sufficient cases of design as research available, post-rationalisation[3]– though never easy – is always made more possible, interesting and convincing. In our opinion, to demonstrate is therefore not only a good move but also a 'designistic' move. When someone asks how, one might respond by analysis and explication or one might show by examples. Without endorsement, we believe that designers tend to be better at the second approach than the first. In this paper, we would like also to take a 'designistic' move. We will first contend that research occurs historically and is therefore subject to change, then we raise the question on adopting 'generalizability' as a quality and evaluation criterion for design research. We then suggest 'transferability' as an alternative, by giving an example of research practice to support the case. We do not pretend to aim at settling the debate on design as research, but to lend support to the attempt to piece together its construction.

Research as Historic

Generally, it is agreed that one type of design research might aim for productive[4] knowledge – knowledge to make 'things'. But many are also sceptical that if design research, like design practice, is to generate productive knowledge, such as a specific design configuration, what is then the difference between practice and research. For example, Fallman (2005) argues for a distinction between 'research-oriented design' and 'design-oriented research'. The former is to do with the 'real' and the latter with the 'true'. Subsequently, the qualities of

[1] See for example the sentiments expressed at the Designing Design Research 4 conference http://nelly.dmu.ac.uk/4dd//.

[2] See http://www.ahrcreview.aces.shu.ac.uk/ahrcreview/eventreports.html

[3] We are not promoting avoidance of reflective inquiry and serious debates, we simply think that inquiry and debates might be at times aided by actions.

[4] We owe the term 'productive' to Richard Buchanan who has used it many times in his writings on design research.

outcome and the evaluation criteria are/should be different between the two. Fallman's desire to mark a distinction is understandable and appreciated. However, his argument is only valid if one assumes, like he does, research outcome is about 'true'. We do not subscribe to this assumption, because not only the distinction between 'true' and 'real' is philosophically contestable, but also more importantly research practice (its process and products) is a social construction. Research outcome *can* be about the 'real' as much as about the 'true'. As a matter of fact, some funding agency, such as the Arts and Humanities Research Council in the UK, describes research as a process and avoids defining it by its outcome. Here, we are not suggesting that theirs is an unquestionable position, we are simply using it as an example to show that research is a social construction. What is design research about is a decision made, not an essence given.

Once we accept that research is designed socially, then we must also see research practice as historic and it can therefore be changed. On this basis, we no longer strive to seek the true/real characteristics or qualities of design research, but rather we aim to find out the contexts to which different types of design research might fit. We are therefore involved in the configuration for the future, not description of the present or the past. Having said that, we do not intend to discourage learning from present or previous research practice. We merely remind that they might not be taken as ideal. This reminder is not as trivial as it seems, for much criticism concerning design as research is based on a final view on how research is practised. Proposals on design research are often inappropriately evaluated by using established criteria that are themselves not *necessary*. And one such criterion is 'generalizability'.

The Issue with Generalizability

Generalization is a quality of research outcome much valued in the sciences. Not surprisingly, generalization is presented as one of *the* evaluation criteria for design research. Research output is expected to be generalizable to a class of products (or phenomena). Under such a conception, practice to produce a specific design is then ruled out of the research community and membership denied. This we find unfortunate and mistaken and will argue against using generalizability unconditionally as a quality measure and propose an alternative.

Concomitant with 'generalizability' are the notions of law and predictability. But the design and development of artefacts are highly unpredictable and do not follow any fixed rules. Our colleague Yagou (2005), among others, proposes 'evolution' as a more suitable perspective to see designs. Whether we agree with the evolution perspective or not, we can hardly deny the uncertain character of designing artefacts. For example, the design of the Walkman was really quite specific, but its design 'infected' the subsequent creation of many personal portable products to the extent that we can say (after the fact) that the design was 'generalizable' to a class of products. The boundary between generalizability and specificity of designed artefact is fluid and so is the boundary between research and design. It follows that generalizability might not be the most appropriate characteristic and measure for design research output or to mark the difference between research and practice. Other qualities need to be explored.

The Idea and an example of Transferability

According to the science theorist Ziman (1991), consensibility and consensuality are what make knowledge reliable. The key to building a body of knowledge is that research is replicable and communicated among people. If we would like to secure a place for designing in research, once a design (as a form of productive knowledge) is specified and tested, then it needs to be documented and disseminated. Collective exchange and implementation of a design in various contexts will help establish the robustness of this knowledge. Although this knowledge can not be 'generalized', it can be *transferred*. Transferable means that knowledge can be passed to others and used by them. Design knowledge understood in this way is not able to predict, but it allows implications to be drawn so others can *anticipate* what might reasonably be expected to arise in other contexts. Here we use an example to show how this might be carried out.

"Watching the Script" (WtS) is an online tool designed originally and specifically for people such as actors, directors or literary scholars who are interested in studying scripts (Sinclair et al 2006). WtS is an alternative that allows watching the script play itself out dynamically on a virtual stage (Figure 1). By combining this virtual playback with a number of tools for selecting relevant passages and controlling the motion, as well as drawing on any available encoding in the text, this online prototype will have the potential to provide an instructional experience that brings together some of the best features from the printed page and the live staged or filmed production. The WtS project is currently a working online prototype and runs through a web browser. The research/design team is planning some user testing with actors this summer. They will compare actors learning lines three different ways--using an HTML text, a video with subtitles, and the WtS. There are two drama professors who are interested in using the WtS in teaching drama as well.

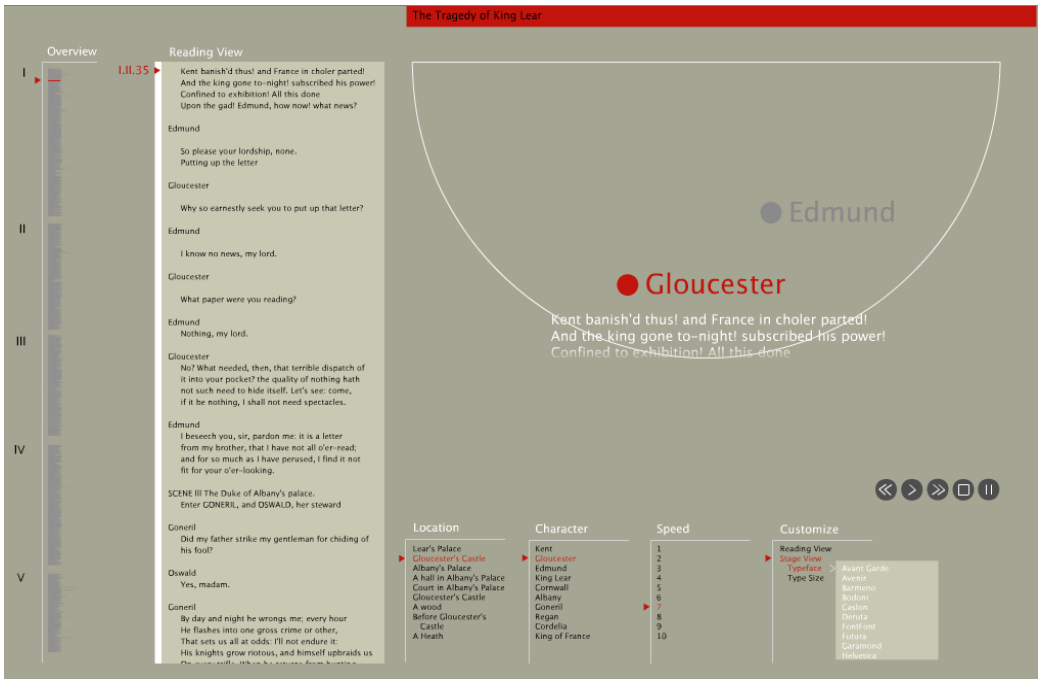

Figure 1. The prototype interface for Watching the Script contains three different views of the text, combined with tools for selecting portions of the script for dynamic playing on a virtual stage.

On the surface, the WtS is a typical, if you like, research-based design. It is context bound: it serves a particular purpose (for studying scripts) and it serves particular users (actors, directors, or literary scholars). The design, though it introduces some novelty[5], seems to be limited to a specific problem. One can easily categorize it as yet another design practice outcome, lacking generalizable power; or one might charge that it does not lead to basic principles and so is at best 'clinical research'. These takes are correct so far till the resourceful designers/researchers 'transfer' the original design to another that can be used in a different context - studying football (Ruecker, et al, in print). The prototype "Watch my Move" (WmM) is intended to support coaches in designing plays, football players in learning them, and fans in watching stylized re-enactments of games (Figure2).

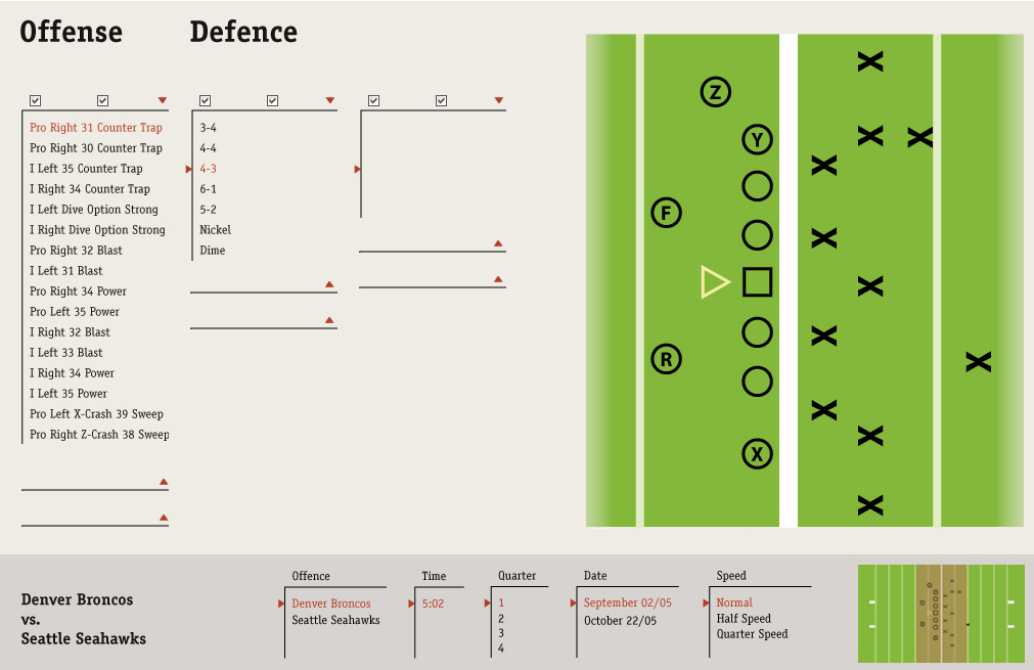

Figure 2. The prototype interface for Watch My Moves contains three different views of the plays, combined with tools for selecting portions of the game for dynamic playing on a virtual field.

Although a number of software packages provide these groups with the opportunity to play virtual games or view existing plays, WmM extends the functionality in some interesting directions, since it takes as its starting point the prototype system for working with digital scripts. The special features include, for example, the concept of being able to replay an entire actual game from start to finish, (much as a student of drama might replay an entire script). The researchers also identify the utility of being able to select for replay the plays involving a single player (as there are actors needing to learn their lines) and the other option of being able to select parts of the field or other identifiable situations for replay (as there are directors seeking to replay all the action in a given location).

[5] Novelty or originality might be another evaluation criterion that is worth emphasizing and understanding.

These novel features illustrate the transferable characteristic of a design specification. Guided by the original design, the researchers are able to explore a different context of application[6]. Although we cannot really claim that the original design is generalizable to a class of products; neither can we deny the potential transferable power it embeds and its relevance to other designs. Certainly, how transferable a specific design is, to a large extent, depends on the ingenuity of the researcher-designer. One might charge that this fact defeats transferability as a quality measure because it seems to be created and is not inherent. We counter, however, it only shows designing is a form of inquiry that reveals what is potential and hidden from view. Transferability is demonstrated by designing in a similar way as how generalizability is evidenced by (designed) experiment. For a speculative example, the researcher-designers might continue to use the designs of WtS and WmM to further explore other contexts of applications to the volume that the transferable power of the original design is made and shown to be very robust. When it so happens, we do design research a disservice to deny the suitability of transferability for being a quality measure, if we believe design research outcome should aid design action.

Concluding thoughts

We have given a brief argument against using generalizability unconditionally as a quality measure for design research and have proposed transferability as an alternative. By arguing so, we do not imply there is no use for 'generalizability' in design research, we simply make room for design in research practice. Much work is still to be done to understand how to employ 'transferability' and 'generalizability' for establishing and evaluating different types of design research and to examine other commonly used criteria for judging qualities of research.

This proposal, we admit, does not fit very well with traditional research that seeks generalized knowledge; but then we do not agree that (all) design research should be seeking this. To adopt our proposal requires a change in assumptions that is not easy. Fundamentally, one needs to release oneself from the belief that design action is necessarily better guided or improved by generalized knowledge and to acknowledge that design action is and can be alternatively supported by designs and through designing. In other words, one ought to see design as a 'historical discipline' with a knowledge base full of 'quasi-objects' (Jonas 2000). When the change of heart takes place collectively, then we can further explore the implications of 'transferability'. Design research will likely focus on *transferring* specific design to fit various contexts, and therefore be highly experimental. Research practice and design practice will become ever more interrelated.

In our view this direction is very exciting for it not only places designing in the center of research, it is also potentially complementary to the more established research/design strategies. For instance, User-Centered Design[7] is relatively established. It is basically drawn on the belief that knowledge (about people) informs design practice. Once knowledge is generated by descriptive research, then design action is better guided. This is not incorrect insofar as the context is relatively determined at the beginning of design, such as the case with

[6] We believe that designers have been doing this for so long as design exists, but we have been weak at articulating its characteristics and exploring its implications.

[7] For a discussion on User-Centered Design, see Chow (2005).

WtS. But when the context is highly uncertain, there is nothing to describe, but rather an opportunity to use designs to explore different contexts, such as the case with WmM. This we might call design-driven research and this will probably need to be demonstrated as much as it has been argued.

Acknowledgement

The authors wish to acknowledge the support of the Social Sciences and Humanities Research Council of Canada (SSHRC) and the Natural Sciences and Engineering Research Council of Canada (NSERC).

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