Gameplay: Map or Frame?

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Abstract
From the social sciences to biology and physics, gamified systems and games are increasingly being used as "petri dishes" for observing human behavior in presumably perfectly controlled (digital) environments. This practice rests on the assumption that in-game behavior maps onto out-of-game behavior. This paper argues that methodological research is needed to establish *when* and *why* game behavior maps (and when not), and that such research in addition provides insight into a crucial aspect of interacting with computers: the impact of usage frames and modes.

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Games; frames; mapping principle; HCI

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H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous

Introduction: Does Gameplay Map Reality?
Based on data indicating that some in-game behavior "maps" onto out-of-game behavior far more closely than commonly thought, several researchers have suggested to use games as giant "petri dishes" for macro-social and macro-economic dynamics or collecting ecologically valid granular datasets [1-5].

Against this *mapping principle* stands another set of data suggesting that merely labeling an activity as a "game" or "play" changes people's behavior and experience in the situation significantly [6-9]. Analogously, one could speak of a *framing principle*:

gameplay is a type of situation – a frame – with particular social norms and expectations that guide and shape behavior and experience in particular ways [11].

Complication: *When* Does Gameplay Map Reality?

Which of both principles holds is obviously a crucial question for any work interested in using games and game design elements as a means of research, both in and beyond human-computer interaction. Common sense suggests that the answer may lie "somewhere in the middle": certain behaviors and experiences in certain game genres and situations map closely onto certain equivalent types of situations, while certain others don't. Buying and selling stock in a brokerage mobile game with the goal to maximize your return is presumably not all that different from buying and selling stock through a mobile app in real life, give or take a certain reduced risk sensitivity, while a virtual sword duel will presumably be quite different from its metal-and-flesh counterpart. Arguably, one reason researchers found mapping in-game and real-life behavior is that they looked at particular *types of behavior* – economic exchanges – where the prevailing social norms are highly isomorphic in-game and out-of-game. As noted by sociologist Erving Goffman [12], strategic interaction where both parties try to rationally maximize their pay-offs is a particular sub-type of social situations with particular norms, one found prototypically in games – and business.

A Need: Tracing Mapping Conditions

Empirically charting and theoretically modeling *when, where*, and *why* the mapping principle holds, and what methodological strategies researchers may employ to maximize mapping (if mapping is desired), is a crucial research program for using games as research tools. Analogous to the biases and heuristics of behavioral economics [14], it may be that the framing effects of games and play are themselves systematic enough to be predictable and thus, systematically discountable: If we know that people are reliably less risk-averse in gameplay to a quantifiable extent, we can take this constant into account when making inferences about risk taking from games to real life – just as researchers know how to minimize and account for social desirability in interview and survey research [13]. Hence, tracing what these biases are is valuable methodology development.

An Opportunity: Tracing Framing Effects

However, I would like to suggest that the framing principle prototypically encountered with gameplay can be doubled onto itself as a research tool, namely to study how different usage modes [10] or frames [11] affect user behavior and experience with interactive systems. By systematically *inducing* a playful versus instrumental framing through labeling, for instance, we can discern how particular affordances are perceived and realized depending on context. We can test out in which way interactive systems may prime particular modes or frames. And we can identify the particular characteristic subjective states and social norms and practices that constitute usage modes or frames.

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