
Situated motivational affordances of game elements: A conceptual model

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Abstract

An increasing number of applications use game design elements to motivate user behavior in non-game contexts. Yet current models of video game motivation do not connect to the granular level of single design elements. Similarly, they do not address the social situation of game play. To address this lack, the concept of situated motivational affordances is introduced to conceptualize the motivational pull of single game design elements in varying contexts.

Keywords

Gamification, self-determination theory, motivation, motivational affordance, situation, play, autonomy

Introduction

In the past decades, research as well as industry practice have increasingly expanded their focus from pragmatic issues of human-computer interaction – like utility or usability – to include aspects like emotion, joy of use, user experience, or motivation. One recent strand in this broader shift has been called “gamification”: the use of game design elements in non-game contexts [3]. Overwhelmingly, this is done to drive ‘user engagement’, i.e. to motivate users to engage with an application or service, usually by making it more ‘fun’ to use.

Yet despite the parallel increase in research on fun, entertainment, and motivation in video game play, we are still in want of theoretical models of the motivational pull of game *elements*. For the existing models by and large focus on *general* motivations for video game play, or how a game (play episode) *as a whole* creates intrinsically motivating experiences of 'fun' or 'entertainment' (e.g. [7,13]). They are not linked to the more granular level of single interface or game design patterns.

Motivational affordances

A promising approach to systematically conceptualize and study this granular level is that of "motivational affordances" [14]. It transfers the well-established concept of affordances from perceived opportunities for action to questions of motivation, linking up with need satisfaction theories of motivation, specifically Self-Determination Theory (SDT) [11]. Need satisfaction theories argue that human beings seek out (and continue to engage in) activities if these promise (and succeed) to satisfy motivational needs, such as competence, autonomy, or relatedness.

Translated into motivational affordances, this means that motivation is afforded when the relation between the features of an object and the abilities of a subject allow the subject to experience the satisfaction of such needs when interacting with the object. E.g., relative to my skills and knowledge, this Sudoku puzzle in front of me affords an opportunity to experience myself as competent when interacting with it.

Not only has the concept of motivational affordances already been operationalized satisfyingly in experimental studies [6]. The underlying theory of

motivation – SDT – also finds increasing acceptance as a fruitful approach to the motivational psychology of video games. Playing games is the prototypical example for an autotelic, intrinsically motivating activity, and SDT is arguably the empirically most well-researched psychological theory of intrinsic motivation. Indeed, SDT has been demonstrated to integrate many different findings and concepts regarding the motivational pull of video games into a small set of constructs embedded in one macro theory of human motivation. And several empirical studies show strong correlations between video game features, need satisfaction, and other relevant constructs like enjoyment or intrinsic motivation [10,12].

Context as factor: The autonomy of play

Yet promising as they may be, both SDT research on video games and the concept of motivational affordances share a significant blind spot: Their focus is by-and-large limited to the properties of the game artifact, ignoring the impact of the social situation or context in which the artifact is engaged with.

This becomes particularly striking with regard to autonomy. SDT understands autonomy as a basic motivational need, and dozens of empirical studies and several meta-analyses robustly demonstrate that attaching extrinsic motivators to an activity (punishments, cash rewards) or giving controlling verbal feedback can reduce intrinsic motivation by thwarting a subject's experience of autonomy [2].

Now autonomy is arguably also one core component of (leisurely) game play. The overwhelming majority of theoretical discussions enlist voluntary engagement and lack of serious consequence as attributes defining play

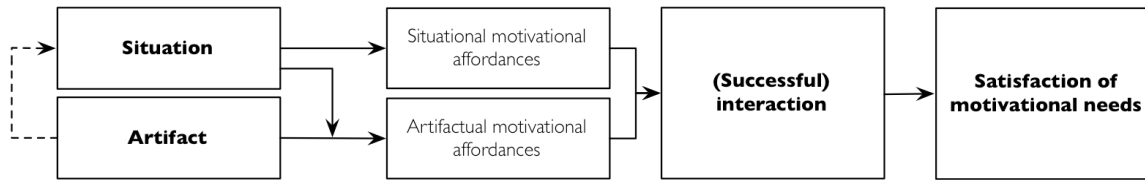


Fig. 1 Situated motivational affordances

against other kinds of activity, especially work [1,5]. At least two empirical studies demonstrate a close link between autonomy satisfaction, intrinsic motivation, and the experience of 'play' in video game usage [9,10]. Thus, it stands to reason that situational aspects of video game usage also play a direct role in its motivational pull: The voluntariness of play provides a strong experience of autonomy, which is intrinsically motivating; this is further supported by the lack of outer consequence – or extrinsic motivators – of video game play.

Furthermore, SDT argues that the autonomy-supporting or autonomy-thwarting quality of environmental inputs is not objectively given, but a subjectively construed social meaning [11]. Put differently, not only does the usage situation ('play') itself entail motivationally salient aspects (voluntariness, lack of consequence). Even the motivational affordances that pertain to the artifact (in our case, the video game) are situated in the sense that their motivational salience is at least partially determined by their situational usage and meaning.

To give an example: One typical design element of current 'gamified' applications are high score lists (or leaderboards). For instance, the application "Scoreboard" allows to add a leaderboard for sales activities to the customer relationship platform Salesforce.com (<http://www.hoopla.net/>). The underlying reasoning is that the social comparison enabled by such a leaderboard leads to a competitive

dynamic among involved users, fueled by the social need for achievement. This overlooks that playing a competitive video game is voluntarily chosen and free of consequence. Yet a public performance comparison at work, introduced by management and tied to cash incentives (as recommended by the software provider), is neither voluntary, nor free of consequence. Thus, it could easily be experienced as controlling, thwarting experienced autonomy and hence, intrinsic motivation.

Situated motivational affordances

If we return to our initial object of interest, the use of game elements in non-game contexts, we can thus conclude that the 'transfer' of a design element from a 'play' context into another usage context likely does not necessarily lead to the same motivational affordances. Thus, to understand when and how game elements engender motivational affordances in non-game applications and services, I argue that we have to conceptualize them as necessarily *situated* [4].

Situated motivational affordances describe the opportunities to satisfy motivational needs provided by the relation between the features of an artifact and the abilities of a subject in a given situation, comprising of the situation itself (situational affordances) and the artifact in its situation-specific meaning and use (artifactual affordances). Thus, the situation at hand both (a) provides motivationally salient features of its own and (b) shapes the usage, meaning, and consequential salient motivational affordances of the artifact in question. Motivational affordances must be perceived to motivate initiation of an activity. (Successfully) acted upon, they satisfy motivational needs and thus motivate continued activity until the need is sated.

As indicated by the dashed line in figure 1, the artifact is also assumed to play a role in establishing the usage situation at hand – such as ‘play’ or ‘work’: It enables/constrains possible uses, serves as an interactional focus, primes associated cognitive schemata, etc. Evidence suggests that merely labeling a task as “play” or “game” changes its perception and subsequent performance (e.g. [8]). However, this complex warrants deeper theoretical and empirical exploration that goes beyond the scope of this paper.

Conclusion

This paper argued that the concept of motivational affordances and the connected macro-theory of human motivation – self-determination theory – provide good theoretical starting points to the study of the motivational dynamics of ‘gamified’ applications and services, if we extend them towards *situated* motivational affordances.

As it stands, the concept is a theoretical sketch that leaves much to be asked for. Next steps will have to unpack the construct of ‘situation’ in a way that is on par with existing theories on situated HCI [4], to prove that the model and its constructs can be operationalized and are useful in empirical research, and to validate its broader assumptions.

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