Good Feedback for bad Players? A preliminary Study of 'juicy' Interface feedback

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Abstract

The theories of *game feel* and *juiciness* claim that players will feel more competent, and that a game will be perceived as being of higher quality, when players are given large amounts of redundant audiovisual feedback in response to their actions. This poster describes a preliminary empirical study of this hypothesis. We created two mechanically identical versions of a game, one with only minimal feedback for player actions, and one with large amounts of redundant "juicy" feedback. On average, players rated the juicy game higher. At the same time, players performed *worse* in the juicy version. The results only partially support the hypotheses and show a need for further studies on the subject.

Juiciness and Game Feel

Steve Swink's book *Game Feel* (Swink 2009) presents a theory of game design not focused on rules or story as has often been the case, but on the control and feedback of a game. Game feel is commonly invoked in game design discussion, and the question of excessive positive visual feedback is sometimes called *juiciness* (Gabler et al. 2005) (Juul 2009). A particularly famous example of "juicy" feedback is the end-of-level sequence in *Peggle* (PopCap Games 2007). Here, the player is already made aware of having completed the level, yet the game continues to provide additional audiovisual effects for emphasis.

But what does juiciness do? While we can find game design advice to the effect that it makes a game more "alive" or that it contributes to a better experience, we fundamentally do not know to what extent this is true. Some usability literature (such as Norman 2005) supports the hypothesis that juiciness would make a game *feel* better to play, and *easier* to use. Counter to this argument, the excessive feedback of juiciness could be hypothesized to split the attention of a user, increasing cognitive load (Kalyuga, Chandler, and Sweller 1999) and making players perform *worse*.
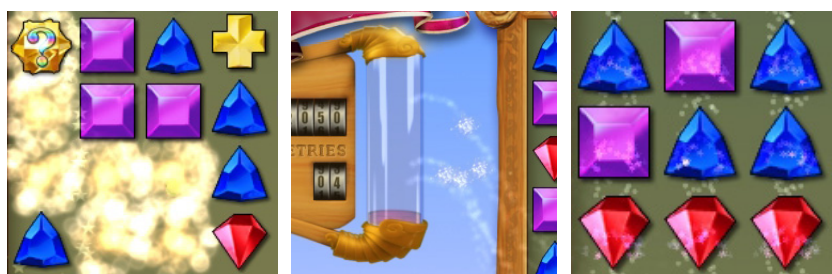

Figure 1: Matching tile game. "Juicy" effects for matches occurring, score vial, and falling tiles

To test these questions empirically, we developed two versions of a matching tile game. The goal was both to examine hypotheses about juiciness, and to study to which extent juiciness *can* be isolated as a variable in game design. In the game, the player has to trace a path through at least three tiles of the same color in order to make a match (Figure 1). The **basic** version only includes audiovisual feedback strictly necessary for communicating the game state to the player, including the movement of the tiles, score counting up, and tiles disappearing when a match is made. We implemented a "**juicy**" version of the game with additional redundant feedback that is not necessary for communicating the game state to players, but rather gives players common superfluous feedback in response to their actions. Figure 1 shows the graphical effects we describe as juicy. These effects include longer-lasting particle effects and additional sound effects.

We recruited 46 players among the student population at a university, offering them $5 coffee gift cards or food. We asked them to play the game with the instructions "We would like you to play a game and tell us your opinions of it. This is not a test of your skill." Players played the game for 6 minutes, after which we noted their final score. 50% of players played the *basic* version, and 50% played the *juicy* version.

After playing, players were asked to rate the game in general and the game's ease-of-use, and to report whether they felt "clever" playing the game.

Results and Discussion

No hypotheses were confirmed, but some tests showed the expected correlations.

- On a scale from 1-5, players rated the ease-of-use of the basic version to a mean 4.57, compared to 4.43 for the juicy version, giving no clear correlation (.11). The assumption that juiciness leads to improved ease of use was *not* proven.
- Players earned a mean score of 49,682 on the basic version, but a lower 40,340 on the juicy version (correlation -0.24), suggesting that juiciness *decreases* performance, though not statistically significant in this study ($p=.12$, calculated as linear regression of the standardized variables, using STATA).
- On a scale from 1-5, players rated the quality of the basic version to a mean of 3.26, compared to 3.74 for the juicy version (correlation 0.19). This supports the hypothesis that juiciness is perceived by players as improving game quality, though not statistically significant ($p=.20$).
- Finally, players reported feeling only marginally more "clever" in the juicy version (2.83 on the basic version on a scale from 1-5, 3.05 on the juicy version, correlation 0.12), not at all statistically significant ($p=.44$).

These preliminary results are predicted by neither Norman nor Kalyuga: Juiciness increased the subjective rating of the game, which supports Norman's claim that the visceral level of an interface is important to users (Norman 2005). Yet juiciness did not make players experience the game as easier to use, barely made them feel more competent, and made them reach lower scores. The latter supports the Kalyuga view that redundant feedback increases the cognitive load of playing, to the detriment of performance.

The lack of statistical significance of the results can be explained in four main ways: 1) The correlations seen in the study could be random, and the prevalence of juiciness in modern game development is misguided. 2) The juiciness effect could be weaker than supposed. 3) The results may be a limitation of the sample size. It is of course the case that *any* effect will only become statistically significant with a study of sufficient size. 4) Finally, it could be the case that the *juicy* effects in this game were not of sufficient quality to give the hypothesized results.

This study demonstrates the possibility of empirically evaluating game design assumptions, and suggests that a larger-scale study is needed concerning the question of *juiciness*.

References

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