The Enlightened Jammer: Intrinsic Drives for Game Jam Participations

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ABSTRACT
We present a qualitative model which can be used to encode free-text data gathered from game jam participations. Previously, the literature has focused on aggregated quantitative results, which left a gap in qualitative research, in particular methods for understanding game jam participations. Our model that we call 'enlightened jammer' comprises three pillars of intrinsic drives: inspiration, reward salience, and the mode of deliberate practice. From the three pillars we form nine attributes, which can be used to encode game jam questionnaires, interviews and self-reported surveys. In this paper we outline the motivations for a qualitative model, disseminate the nine attributes, and discuss our observations after encoding questionnaires from participants in two game jams. Additionally, we propose a set of seven archetypes summarised by the enlightened jammer model for understanding game jam participatory patterns.

Keywords
game jams, intrinsic drive, motivation, reward, feedback, game development process

INTRODUCTION
Game jams have become a worldwide phenomenon. The time-limited format makes them suitable to experiment with novel game ideas at very little risk, and they have proved to be quality environments to meet like-minded game developers from all ranges of experience (Pirker et al. 2016). For similar reasons, game jams make popular scenarios for research opportunities, including learning about the software prototyping process (Musil et al. 2010), constructing a playful learning environment (Goddard et al. 2015), and facilitate locations for research through design (Deen et al. 2015).

Previous scholarly works related to game jams participation and motivation have a focus on demographic data and background. Reng et al. (2013) reported a high number of participants in Nordic Game Jam who would return the coming year, the reason being that they love to meet people with similar interests and skills, exchange ideas, and work with them to produce games that feel refreshing. Zook and Riedl (2013) examined Global Game Jam participants with a goal-driven lens, which they divided into personal, player-oriented, and system level goals. Their participants expressed a vested interest in making games for the sake of making games, trying new mechanics, and doing it for the player enjoyment. Steinke et al. (2016) linked motivation with the age of participants, and found the highest two factors were to have fun, and to network with others. In addition to networking, Fowler (2016) also found that game jams serve as an excellent environment for stimulated learning, which has a strong synergy with Pirker et al.'s (2016) results, as

game jams used for practicing the process of prototyping. However, the current literature on game jams largely report qualitative aggregations of skill ratings, background knowledge and experience. There is a significant research opportunity in using qualitative methods specifically designed for encoding individualistic motivations in game jams, in which this inquiry is an attempt.

We first proposed a pilot model at the First Joined International Conference of Digital Games Research Association and Foundation of Digital Games (DiGRA-FDG) panel. The model was well received by the panel audience. In this paper, we discuss an initial analysis using the model on two post-game-jam questionnaires, and present the complete description of the qualitative model that we call the *enlightened jammer*.

THE ENLIGHTENED JAMMER MODEL

In constructing the enlightened jammer, we focused on the jammer themselves as we are interested in their perceived intrinsic drives. There are other adequate theories worth examination as alternative models, we should note: the self-determination theory (Ryan and Deci 2000), intrinsic and extrinsic motivations (Benabou and Tirole 2003), or from a pedagogical perspective, the effects of collaborative learning (Dillenbourg 1999).

Ryan and Deci construct a spectrum of motivation levels, from not motivated, extrinsically motivated, to intrinsically motivated. It builds on the concept of social and personal well-being, asserting that an intrinsically motivated individual is ranked the highest. Benabou and Tirole discuss the contrasted concepts of intrinsic and extrinsic motivation with a hidden cost, using economical perspectives to measure their effectiveness. Both of these models are well-equipped to measure the levels of motivations, the rewards that drive them, and their potential impacts on individuals. However, we argue that they are ill-suited to discuss the horizontal spectrum of individual temporal, emotional, and practical reflections. We want to closely examine the intrinsic part of the motivation model, connecting actions, reactions, and the specific context for them. Especially when these actions in context describe themselves in the present and past tenses, the feelings evoked throughout are all crucial to register motivation. Dillenbourg observed on the positive impact of collaborative learning, which can be adapted as an extra pillar of the enlightened jammer model. Yet, our dataset in the study, as we will describe in the next section, comprises solely of many individuals' self-reported responses, and are not suited to examine the impacts of collaborative learning as a whole.

We pose the research question, 'what intrinsic drive do individuals possess for attending game jams?' in particular individual intrinsic drives. Our line of inquiry is formed on the basis of prior experience, reward-driven motivations and self-confidence affected by individual personalities, i.e. inspirational attributes (Thrash and Elliot 2003), reward salience (Thrash and Elliot 2004), and the mode of deliberate practice for expert attainment (Ericsson et al. 1993). We refer to these three intrinsic drives as the three *pillars* of the enlightened jammer.

Game jams support as well as require room for much creativity in their development, usually surrounding a consistent theme through the jam provided by the organisers. These

themes, combined with participants' existing ideas and exchanging their insights, are the key activities of inspiration as described by Thrash and Elliot. Inspiration can also be evoked by nostalgia, which increased self-reported motivation levels (Stephan et al. 2015). Thrash and Elliot went on to suggest that a second key player of motivation is the vision of attainable objectives and goals. As goals become much clearer, they feel easier to do, and pose less friction on motivating people to do them. Indeed, the inner thought of *'I can do this'* and its following actions are one kind of observations of jammers seeing attainable goals. Lastly, by proxy the virtue of attending game jams is a type of practice. We see recurring attendances as a type of deliberate practice, facilitating an environment for building participants' existing skills and knowledge to develop their games. Turner et al. (2013) reported that their game jams have since offered amateur, 'semi-professional', and professional leagues to tailor for the differences in skill levels. They also provide assistance in cross-learning within the leagues themselves, as well as across leagues. In short, with inspiration, reward salience, and a healthy dose of self-prescribed deliberate practice come the enlightened jammer.

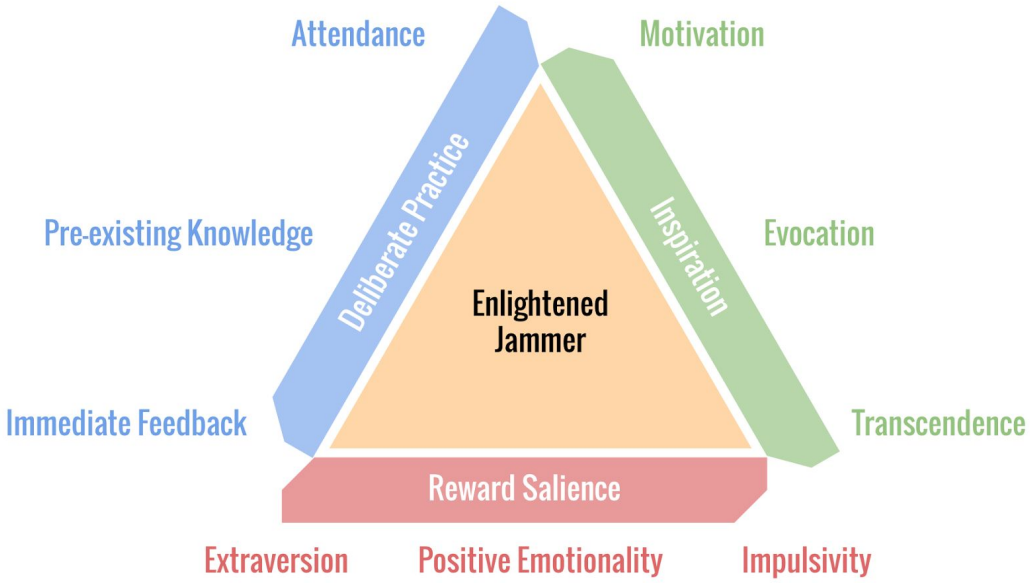

Figure 1: The enlightened jammer and the three pillars of its defining intrinsic drives.

The enlightened jammer inquiry model comprises a set of basic assumptions of why game jam participants attend game jams. It can be employed on a number of qualitative results, such as free-text response surveys, interviews, and self-reported questionnaires. To answer our research question, we construct from the three pillars a series of nine attribute-based lenses, which then can be used to encode responses and test our assumptions. They are:

- **Transcendence:** attendees have a vision they want to achieve, which may be acquired before or during the jam;

- **Evocation:** attendees are driven by an external influence to participate, such as social or personal factors;
- **Motivation:** attendees have pre-existing internal reasons for participating, which could be found before or during the jam;
- **Extraversion:** the extent of willingness attendees exhibit to approach a new idea, not to be confused by the extraversion versus introversion personality spectrum;
- **Positive emotionality:** the degree of positivity attendees exhibit when approached by new ideas, which can affect them to take different actions, especially in a team;
- **Impulsivity:** the varying amount of time attendees spend before trying out new ideas, and how often they approach them and how long (or short) ideas stay in the prototyping process;
- **Attendance:** the frequency of game jam attendances, referring to returning attendees and their perceived impact of attending game jams on their careers;
- **Pre-existing knowledge:** the breadth and depth of skills, insight and practiced methods attendees bring to the table when participating in a time-limited event;
- **Immediate feedback:** the feedback loop that occurs frequently during a game jam, especially when a team is open for playtesting, and the new insight they obtain for trying different things.

GAME JAM QUESTIONNAIRE ENCODING

To test these nine attributes about the enlightened jammer, we conducted two studies with the participants of two Hectic Games Jams, nowadays known as North Shore Institute (NSI) game jam, which are both 48-hour game jams that took place over weekends. The two game jams were three months apart, and saw roughly half returning participants. All participants received a link to fill out an online survey at the end of the jam, and were encouraged to respond before they leave the site. For those who left early, we opened the survey for two weeks after each jam. From both events we received 20 self-reported questionnaire responses, discarding incomplete responses, and conducted two interviews with participants who indicated interest in a follow up session. The questionnaire is designed to focus on the game jam games, and not about the participants themselves. We wanted to take a reflective approach by asking the participants to recall what it was like to work on the games, the ideas they exchanged, and the paths they entered to complete the jam. We also asked if the game itself had any similarities with existing commercial games. Finally, there was an open question for anything the participant would like to share in the questionnaire.

After we received questionnaire results, they were encoded with the enlightened jammer model. The process is as follows. For inspiration, we looked for external influences (transcendance, motivation, and evocation), explicit game ideas or ideologies, and specific game mechanics or genre influenced the participants borrowed in (transmissions of ideas, see Thrash and Elliot 2004). For reward salience, we looked for expressed desires (impulsivity and extraversion), strong feelings—both positive and negative—piqued by accomplishments (positive emotionality), and self reflections that indicated visions of attainable goals (manifests of reward salience). For deliberate practice, we sought after explicit actions taken during the jam (practice-in-attendance), any mentions of tools or assets used (existing knowledge), and the insight, knowledge

gained and also feelings they felt *during* development (immediate feedback). In instances where multiple encodings may apply, actions have more weight than ideas, as they are physical manifestations that have taken place. We then choose the most appropriate encoding. The actual process of encoding itself was done by highlighting phrases in three different colours, one for each main category. We chose green for inspiration, red for reward salience, and blue for deliberate practice. Our encoded document from the study is shown in Figure 2.

Figure 2: Screenshot of our questionnaire summary at the end of the encoding process

OBSERVATIONS FROM GAME JAMS

In this section, we highlight two common observations and one noteable response that were recorded in our questionnaire, showing similar themes and variations of activities game jam participants got into. In the next section, we will take a look at the occurrence (or the lack of) each pillars of the enlightened jammer, and propose a set of seven archetypes that may grant some insight into understanding different participation patterns. The highlights in our observations are:

Observation: clash of abstract ideas. We asked the question, 'what kind of idea did your team come up with?' Participant 9 from Hectic Games Jam #2 told us their secret combo:

> *"... I like the idea of the flying whale because it seemed so illogical, and I liked the idea of the mimic because the enemy was pretty scary. I really enjoyed creating the level as well, I think it ended up being more interesting than just a tile based level or one generated procedurally."*

They are not the only participant to combine two ideas (flying whale and mimic) into one game design concept. In fact, nearly every participant answered that they took the one idea and something completely different and wild, and put them together in the same game. Some participants took more logical steps to ensure their idea combinations would make more sense. Perhaps due to the limited time in game jams, and the general little

consequence of releasing a game jam game, participants are more likely to try out unique combinations of themes and objects.

Observation: prototyping with new ideas. We asked 'are there games out there that are similar to [your game]?' Most people did, including Participant 6 from Hectic Games Jam #1 described their idea:

> *"The game can be seen to be quite similar to a classic kind of hill defense game. But due to the game mechanics of being able to throw balls at a wall / touch the wall to kill enemies it made it unique. The style / story and characters I was going for something unique so tried out a new style and utilized pixel art and digital painting in photoshop."*

As expected, everyone was able to name at least a couple of games that are similar to the game they made. What was interesting was that not only participants named the games or mechanics that were similar and how similar, but also they were indirectly prompted to justify and say how their game was unique. In this case, the physical interaction of throwing a ball made a hill defense game unique. We were able to learn both the similarity and dissimilarity of their games from the response.

Observation: iterative game development. This excerpt came from the 'what else would you like to tell us more about your game' question. Participant 11 at Hectic Games Jam #1 said:

> *"... due to time constraints [my game] became a single (very hard) boss battle. ... Developing it was really satisfying ... . So then when I got people to playtest it... they gave me feedback. I would fix that and show it to them again until that feature was as close as perfect as it could."*

This was noted because out of the twenty participants they were the only one to report that they had time to playtest their designs, and for iterating from feedback. Most other participants expressed that the lack of time was a major factor, and 'running out of time' was frequently seen throughout the questionnaires. This particular participant was more experienced and had published games in the past, and they were able to make time for playtesting and polishing their game.

PATTERNS AND JAMMER ARCHETYPES

In the second section of our discussion, we propose a set of seven archetypes for the jammers. Archetypes are useful for initially understanding what an individual potentially might be like, and is good at painting broad strokes. We synthesised our observations into the following archetypes, which can be utilised for comparison analyses for studies in other game jams or similar events. These archetypes may also be deployed to encourage participation and develop new skills in game jams, such as teaming up with different archetypes, or use them to fill in gaps. We present the three pillars of the enlightened jammer with our colour-coded shorthands: green (G) for inspiration, red (R) for reward

salience, and blue (B) for deliberate practice. Each one of the seven archetypes is described by one or more recorded instances of encoding.

- **Idea generator:** G only. Idea generators go through many ideas, but either do not yet possess the determination to see them through, or lack the skills to complete them in time. They seem to enjoy trying out different things. They also tend to be jammers new to the whole thing, or students coming to the jam.
- **Optimistic visionary:** R only. Optimistic visionaries feel more strongly about the game jam, and their recollections tend to surround different visions of the games they had, and the achievements they reached. They are often driven by external rewards like completing a milestone they came up with during the development process. They tend to be students and learners.
- **Practical developer:** B only. Practical developers like to talk about what they tried, what didn't work, and what worked well in the end. They follow a set of routine that have already been established by past attempts, and they tend to be programmers.
- **Idea producer:** G and R. Idea producers appear to be much experienced idea generators, and they have the vision and feel to go with it. They often discuss their ideas in unexpected ways, and they like to talk about personal bugbears and what to avoid in their game idea. They tend to be experienced jammers.
- **Experienced developer:** G and B. Experienced developers have many ideas accumulated in their brain and on paper, and they are more likely to have made games in the past. They are usually specialists in a team, such as artists and musicians, and some programmers too. They can talk about not only what didn't work and what worked, but also speculate what might not have worked if they had tried it, and what may have worked if they did try something else.
- **Prototype explorer:** R and B. Prototype explorers are not afraid of trying new things. They act fast and fail fast, discarding away ideas that did not work. They often report iterative development and express the reasons they think why something did not work out, and what they tried instead. They tend to be generalists.
- **Enlightened jammer:** R, G and B. Enlightened jammer have built up practical experience from the past, came with ideas fully loaded and may brainstorm more of them. They like to talk about what they really want to do in the future. Enlightened jammers tend to exhibit mentor-like personalities, likely to be the most experienced person on the team, and they can tackle a speciality that they are good at while helping others out.

These seven archetypes should be used with a caveat in that they may be overly general, as they are derived from a limited set of 20 participants' responses. We propose them here for three reflected implications and for discussion. First, the model may be useful to group students who are from different archetypes, so that their personality may complement each other in different strengths. Second, we noticed each participant has their own routine, of how to do things. When they are stuck, it could be useful to propose in the direction of a pillar that they haven't exhibited strongly yet. Lastly, we would like to note that an enlightened jammer is not necessary an expert in game development, but someone who has implemented ideas, can speculate accurately which paths will likely

lead to a finished and playable game jam build, and someone who can and likes to mentor others in the jam. All in all, These archetypes exhibit different intrinsic drives for participating in game jams, and they can resonate or complement each other well.

CONCLUSION

In closing, we have presented a qualitative model that we call enlightened jammer. The model comprises three pillars of intrinsic drives: inspiration, such as novel ideas and borrowed concepts; reward salience, the state of mindset that tells them *'I can do it'*; and someone who frequently attend game jams and other game development activities, someone who practices deliberately to improve their own skills and learn new things. Out of these three pillars we listed nine attributes that describe the enlightened jammer, and seven archetypes derived from encoding self-reported questionnaires completed after game jams. We found that enlightened jammers are not only more likely to be experienced in game development, but also are more likely to mentor and help others. We hope the model will serve as a useful tool for future scholars to study intrinsic drives for participating in game jams, and their effects on the overall results.

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