The Lost Binder:
Communicating Ethnographic Research With Games

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Abstract

With annual U.S. research and development spending amongst Booz & Company's Global Innovation 1000 at over $500 billion (Jaruzelski & Dehoff, 2010), companies are generating an overwhelming amount of ethnographic research data about how people clean, game, shop, learn, eat, and more. Buried in this data—they hope—is the insight that could inspire the next great innovation. And often it is. But, it usually ends up stranded on an executive's desk instead of entering the collective intelligence of the organization. This paper shows a method, based on experience modeling, for extracting an educational, inspirational, and viral system of games from a large qualitative data set of observations and interviews with 21 American women.

Introduction

Real Moms is a system of prototype games created to address a fundamental problem with design research in large institutions (e.g. corporates and government bodies): that it often fails to spread through the organization, falling short of its true potential because it doesn't reach those who might use it. It is often relegated to binders on out of the way shelves, ignored, and finally lost.

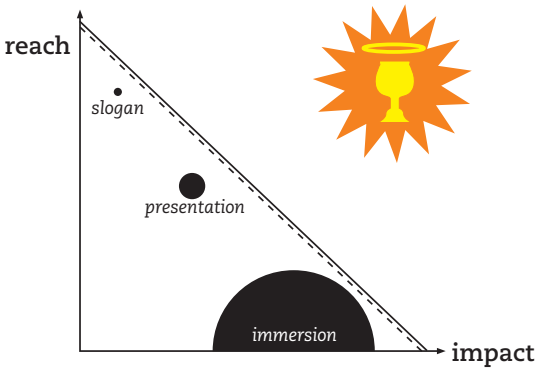

Figure 1. The Tradeoff

Design ethnographies can run to dozens or hundreds of hours of footage and tens of thousands of words of transcript, and current methods of communicating this research fall prey to a tradeoff between reach and impact. Immersive data experiences that foster true empathy are costly and time consuming, reducing their reach, while short presentations or pithy slogans have little impact because they lack the depth to generate that connection (see Figure 1). Games that

build on strong models of experience may be a way to break this relationship and achieve both reach *and* impact.

Games Rooted in Physical Models

Games focused on physical authenticity (e.g. *Gran Turismo*, *Forza Motorsport*, *Flight Simulator*, *Operation Flashpoint*, and *Rock Band*) have mechanics that are deeply rooted in and require you to master underlying physical models (cars, planes, war-fighting, musical instruments). These games highlight several aspects that make the medium work as a delivery method for models.

Games *(1) sequence* hours of content into a series of bite-size experiences of increasing difficulty, making that content less overwhelming. This makes them an excellent potential structure to progressively disclose an ethnography. They allow players to *(2) explore* models and tease out the relationships themselves–without crashing a real car or plane. This may foster a deeper understanding. They are *(3) stand-alone;* they don't need to be put in context by a human presenter because they teach you how best to use them, which helps them to spread virally.

However, games have struggled to remain grounded as they move from gameplay based on objective physics to subjective experiences that deal with human emotions and society. Extreme examples like *Grand Theft Auto* show what happens when you throw out moral nuances in favor of gameplay, while even games that aim for an ethical element (*Star Wars: Knights Of The Old Republic*, *Fable*, *inFamous*) boil ethics down to a simplified arithmetic of 'good' versus 'evil' actions. On a larger scale, games like *Sim City* and *Civilization* replace the web of values that define culture with a standardized set of attributes that the player seeks to optimize. Other games use themes that in real life are emotionally charged, such as food preparation (*Diner Dash*, *Cooking Mama*, countless Flash games) or homemaking (*The Sims*)–as decoration for much simpler gameplay. These are great games but also caricatures, inspired but not rooted in reality.

Figure 2. **Physical vs. Experience Models**

What might happen when gameplay is thoughtfully built around real experience?

Jason Rohrer's *Passage* invites the player to live a whole life in exactly five minutes, and its mechanics are abstractions of the author's own values, which he outlines in detail on his website (Rohrer, 2007). You are set in a narrow, pixelated landscape. You can walk to the right and see a variety of environments, or you can head down into an increasingly tight maze to find scattered chests. Some are empty. Some hold treasure, which increases your score. This is a crude model of the tradeoff between career and adventure. If you 'marry', you and your wife cannot physically fit as deep into the maze, but any treasure you do find yields double points; a model for relationship compromise. Inevitably you die, although your wife dies first, and when she is suddenly replaced by a little tombstone graphic, most players are reluctant to keep moving. That this tiny bereavement occurs is a sign of *Passage*'s success as a thinly decorated model of the experience of life and love.

A simpler example is Digital Dreams Light's *A Tale By Alex*, which eloquently inserts us into the mind of a child playing '*the floor is lava'*. The player simultaneously sees the world in three ways: the bottom as just a living room, the top as a fantasy world where tables become ledges, coat racks become trees, and the dog becomes a ferocious monster. In the middle is a mixed view, where the real and imaginary coexist. This could easily be a model of the way a child experiences play.

Finally, Jaime Fraina's *Is It Time*, a game where you inhabit the life of an elderly woman whose husband has passed. You are alone, frail, slow, and disoriented. Your daughter occasionally bursts in with some food, and leaves just as suddenly. Days are mundane, boring, with the simple task of keeping your fatigue, hunger and boredom at manageable levels. Managing those three variables is a model of the experience of being old.

These games show what happens when you embed a model of experience into the mechanics of the game. They are not necessarily fun, but they are impactful (the author and his roommate both called their grandmothers after playing *Is It Time*) precisely because they put you in touch with one another.

Real Moms: The Dinner Experience Model

Real Moms was an exploration of games' potential to communicate ethnographic data about women's experience of preparing dinner for their families, conducted in the context of a 14-week workshop class at Chicago's IIT Institute of Design and taught by adjunct professor Kim Erwin. The overall assignment was to explore more compelling ways to communicate large qualitative data sets for design, with each student developing their own angle. To simulate a real commercial environment, we each worked off fictional client briefs (in this case, Real Simple) and were given access to two different data sets drawn from commercial design ethnographies.

The data sets comprised:

- In-home interviews with 12 convenience focused moms, collected while they were preparing and eating dinner.
- Online self-documentation with 9 edge-of-mainstream women, focused on healthy living and eating. The platform was Revelation Software.
- Between those two sources, 12 in-home observations of dinner preparation, 4 video taped interviews, 10 days of meal documentation with pictures, 102 diary

pages capturing activities and thinking around healthy eating, 45 reflections on activities and attributes of living healthy.

The first step was to develop an experience model to clearly fix into inspectable form the behaviors and feelings of the participants as they prepare dinner for their families. Experience models are tools for thinking about people, much as Watson & Crick's model of DNA is a tool for understanding genetics (Robinson, 2001). A good experience model is a visual Rosetta stone that usefully organizes the behaviors of people involved in an experience so that an outsider can understand them from the insider's perspective. They are visual and concise, so they provide a more actionable interface with data than a long form text or other breakdown. Because they clearly capture key reasons why people behave and feel the way they do, experience models provide a solid base to build game mechanics from. (1)

The model is shown in Figure 3. On the left side are the *hope,* what she considers the perfect dinner, and *tactics,* contingencies that she has planned for (there will probably be a delay, and the kids will probably need something different to eat). On the right the *struggle* of reality, with the family scattered by (1) the husband's *delay* at work, (2) having to make a separate meal of peppers and hummus for the kids (because they won't eat salad) which then, (3) *expands* in scope because the kids won't eat just those vegetables (burgers are added to the menu) and then (4) *splits* again for the youngest when he throws a tantrum and refuses to eat anything that's been made. Finally (5), the meal *expands* once again when, just as she and her youngest finally sit down, he asks to be read to.

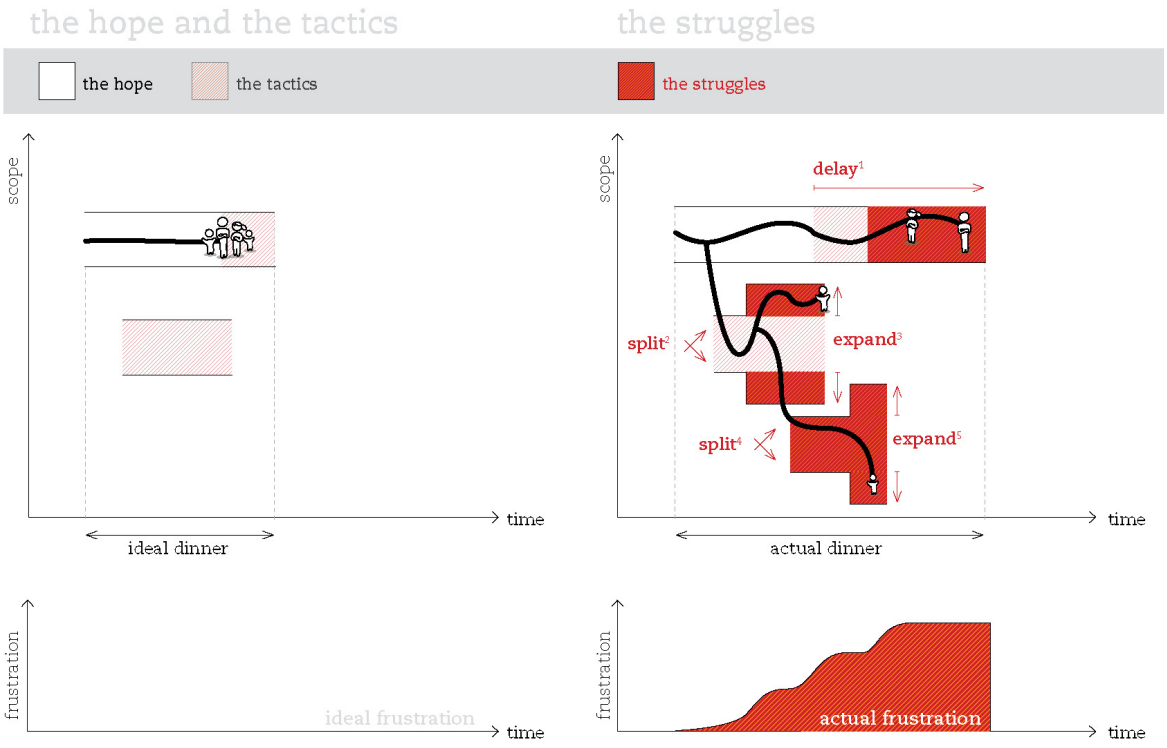

Figure 3. **The Real Moms Experience Model.**

The core insight from the model was that *the struggle of dinner isn't about food: it's about wrangling the family*, and what defines her satisfaction at the end of the night is not how chaotic the evening was in absolute terms (*the reality*) but how far it strayed from her ideal (*the hope*) and the buffer she put in place to take care of contingencies (*the tactics*). (2)

To clarify further: each area in the diagram is an individual meal within the family dinner. The black lines are the individual paths that the family takes through this dinner space. The perfect path would go straight down the middle and would stay within the hope. In reality, they curve and stray to represent the negotiation between the eater's tastes and the developing dinner.

Actually eating dinner is just a small part of it (the horizontal axis, time). Dinner starts with preparation, and ends after the cleanup is complete. The scope (vertical axis) of the meal can vary widely—a very narrow scope might be a sandwich, while a fine gourmet meal with seven courses would be much broader. Scope isn't just about the food; setting up a romantic atmosphere, helping kids with homework, or coordinating dinner guests would also increase it.

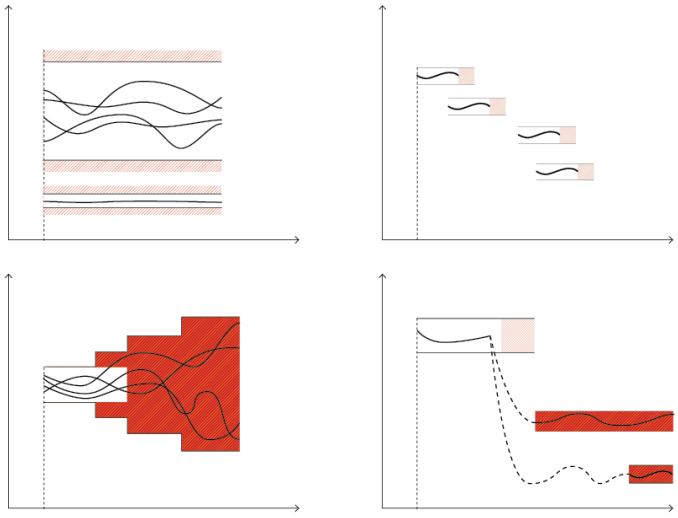

***Figure 4*. Flexibility of the Model.**

The model therefore works for a wide range of situations (see Figure 4). Clockwise from top left: (1) the big, multi-course family dinner with a separate vegetarian option, (2) four small separate sandwiches, (3) too many cooks; a poorly planned dinner party that flies out of control, (4) catastrophically burning the Valentines Day dinner, resulting in two sad, separate meals.

So what is the difference between a meal that is perceived to have gone well and one that hasn't? The good dinner may not be what she had *hoped* for, but at least she had *tactics* planned to deal with the delays, expansions and splits of *reality*.

Games From Experience Models

This model was used to explore the communicative ability of games. Two games and a workshop were created. Also prototyped was a website to connect the games to the underlying data.

There were three major considerations (reinforced by the real constraints of the project):

1) Scope: With the compressed time horizons of design, the game would have to be built in just a few weeks (or sometimes days).

2) Style: To fit institutional environments the game would have to balance a personable style with the need for credibility as an information source.

3) Depth: As explored above, the beauty of games is their ability to sequence and progressively disclose information. The game designs would have to be portals into the data.

Exquisite Dinner

Exquisite Dinner takes the tactics and struggles that lie at the heart of the model and turns them into a card game. It is inspired by *Dominos*, the *Metagame*, *Exquisite Corpse*, and semi-structured storytelling games in general and is best played with three or more people.

Players shuffle the deck and are dealt seven cards each. The first player places a struggle card from their deck, and the next player has to find a tactic to match it (the examples in Figure 4 would work). The next player should then try to follow that tactic with a struggle that would negate it, to be followed by another tactic—and so on. The aim is to lose all your cards.

Here's the twist: these connections are judged by the players. If other players disagree, the person who put down the contentious last card must justify themselves to the group. If they lose the argument, they must take it back and pick another card off the deck.

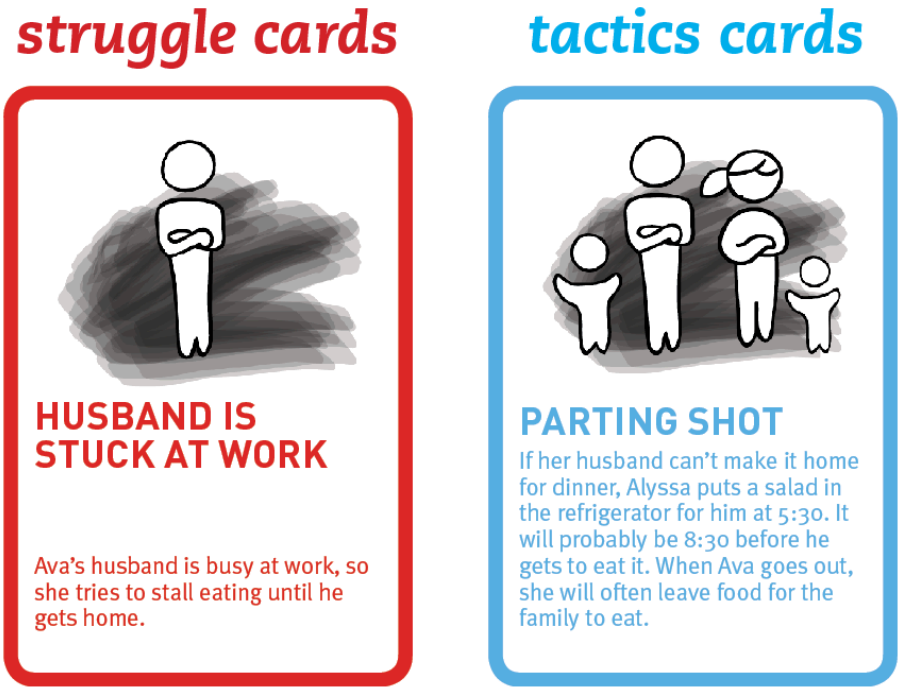

Figure 4. A Potential Match of Exquisite Dinner Cards

Every time the players have a disagreement (almost every hand if the group is mischievous enough) they end up unwittingly exploring the tactics and struggles and relating it

to their own experience. By the end of a game, they will have interacted with a significant slice of the data.

Exquisite Dinner Workshop

A workshop was imagined to introduce the game (though not tested due to time constraints). For this activity the struggle cards would be split into four suits (tastes, time constraints, personal tensions, and surprise twists) and mounted on a large display. Groups of participants would select a few struggle cards from each suit to form the worst evening possible. The groups would then share their stories and together look for tactics that might help—from the cards, from their own experience, or by beginning to design new ones.

Wrangle

The final game was closer to a direct rendition of the model itself. Players play through a sequence of successively harder family dinners abstracted as a set of tracks, one for each potential meal within the dinner. Your job is to make enough food, keep it warm, serve it before your family gets there, and clean it up afterwards, all implemented through a mechanic similar to *Guitar Hero*. At each stage of cooking you keep the dinner going by clicking on colored circles that come flying across the screen at random intervals. Dinner gets off track when you miss too many.

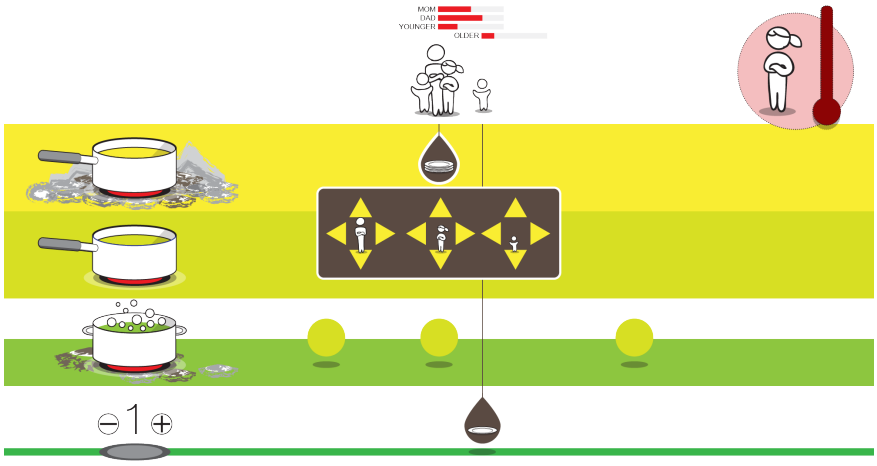

Figure 5. **Mockup of *Wrangle* (a basic prototype was also built using Javascript/HTML/CSS)**

The struggles make their appearance, too, delaying a family member's path to the table (e.g. husband stuck at work) or forcing you to start another meal on a new track (e.g. kid's tantrum). After a few splits you are forced to make several meals at the same time and it becomes impossible to click on all the circles as they go by, mimicking the stress and split-second compromises of multitasking. Because these scenarios are drawn from the data, you can pause the game or click on the struggles when they appear and zoom all the way into the original footage.

The whole game should take just a few minutes to complete, but by the end of it players have a new access point to the data and a visceral sense of the underlying experience model.

The Pantry

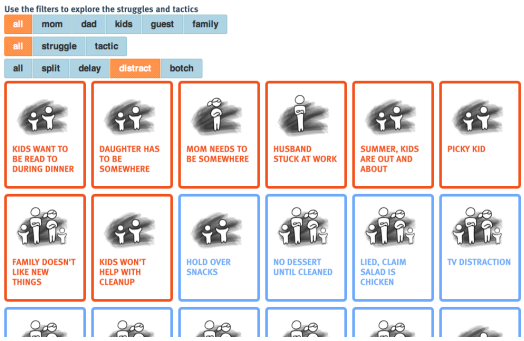

Figure 6. The Pantry

The final piece is the website to connect the games to the underlying data, called *The Pantry* (see Figure 6). This site hosts (1) *Wrangle* and instructions for *Exquisite Dinner*, (2) an animated intro to the experience model, (3) the full catalogue of struggles and tactics along with several views to browse the relationships between them, and (4) a detail view showing video, a transcript of the relevant data, and a list of related tactics and struggles.

This is the element that knits the rest together. The limited scope of the individual games makes it even more important to connect them to each other to channel the interest they spark.

Key Findings

These prototypes are little more than experiments at this point, and have yet to be tested on a significant scale. Nevertheless, they stimulate a number of useful questions and considerations:

Fun: When accurately modeling a painful experience, should the game be painful too? This will build empathy, as *Is It Time* did, but may dampen people's enthusiasm to play and pass it on. Simply making a good game is itself a fundamental challenge.

Size of games: The key insight from this project is that a system of smaller games connected to a robust platform is likely to be more attainable than a monolithic, all-encompassing experience. In particular, the experience models are natural candidates to bring to life as abstract games that don't require extensive art and programming resources.

Unit of play: Struggles and tactic were appropriate units of play because they mapped well to the parts of the experience and were in opposition to each other—fertile ground for a number of useful game mechanics. But were they the right way to introduce players to the data? Further work should be done to explore different categorizations of the data (e.g. different stages of the meal), and perhaps creating an array of games with multiple perspectives on the same data.

Subjectivity & Rigidity: The hardest thing about setting up game mechanics to mirror an inherently subjective model of experience is that some actions may be desirable for one party but not for others. For example, one family may view eating in front of the TV as a sign of failure. Another might perceive TV dinners as a wonderful way to be together. This may be addressed by manipulating the rigidity of the game.

Exquisite Dinner and *Wrangle* sit at opposite ends of a spectrum, the former representing a loose structure drawn from the model and the latter being rigidly bound to it. A loose structure is good for discussion. It's an effective way to respect life's essential messiness and the issue of

subjectivity, but is less actionable because it's less connected to the insights of the model. However, it gives players more space to introduce their own thoughts. The more rigid structure is good for data delivery. It teaches the model much more effectively and the gameplay is less dependent on the creativity and argumentativeness of the players, or having other players at all. This makes it more self-contained. However, it may cut out too much of life's messiness.

Time constraints: Is it possible to design a compelling game within the very limited time constraints of the design process? Further investigation should be done of platforms and reusable elements, but perhaps the best solution is to frame these systems of games as persistent artifacts to be updated year-on-year as the data evolves.

Authoring tools: These games need to be paired with flexible authoring tools that don't lock researchers into an overly restrictive model of the world. They need to be able to insert data and mold it into gameplay scenarios, but also modify the game as their understanding of reality improves.

Security: Large institutions should be the perfect breeding ground for these models and games: a large group of people who need to be aligned around a specific goal, controlled computer systems, and plenty of colocation. But espionage and fears about intellectual property lead to restrictive policies on what can be seen by whom. A truly insightful model may be perceived as too important to be allowed to spread, even though that dissemination might increase the ability of the institution as a whole to serve its users. This tradeoff is ripe for further investigation. Perhaps games may actually allow for a more granular disclosure of this information than existing methods.

Conclusion

Games like *Passage*, *Alex's Story*, and *Is It Time* show how emotional content can be communicated by games rooted in simplified experience models, and the broader universe of games is ripe with examples of popular games encapsulating large domains of information, though mostly inspired by—not firmly rooted in—reality. It's hard to design good game mechanics for subjective experience without distorting or overly simplifying the messiness of real life.

The exploratory prototypes in this project suggest that an approach based on experience modeling may be a way to create a robust structure to keep game mechanics faithful, and raise a number of questions about the tradeoffs to navigate to create a successful system. It's also important to remember that games are one of many approaches to making data more engaging. The best solution may be a mix of approaches.

This research may also be relevant from the reverse perspective: creating games that are more rooted in reality. There is a clear business goal to increasing the reach and impact of ethnography within institutions, but there is perhaps an even broader target: embedding real human insight into the cores of games that we all play.

Endnotes

(1) Experience modeling was heavily used at E-Lab in the mid-90s and then Sapient, and parts of the methodology have been employed by a number of design firms since (Jones, 2006). Most likely due to the commercial nature of most modeling work, little of note is published and it is out of scope of this paper to provide a substantial introduction. The Real Moms case study should nevertheless provide a useful illustration, with a fuller overview to come.

(2) For those reacting to the exclusive use of *'she'* throughout this paper to describe preparing the family dinner, it is worth reiterating that the data we used unfortunately only covered women. In a world where gender roles are becoming increasingly fluid, it would be ideal to understand both genders.

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