REPORT #1

IMPACT WITH GAMES: A FRAGMENTED FIELD

Project website: GameImpact.net

PRESENTED BY GAMES FOR CHANGE AND THE MICHAEL COHEN GROUP
FUNDED BY THE DAVID & LUCILE PACKARD FOUNDATION
ADVISORY BOARD CHAIR: BENJAMIN STOKES, PHD

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Our Team

This project is taking a collaborative, research-based approach in order to incorporate diverse voices. The collective "we" of the project includes Games for Change under the leadership of Asi Burak and Susanna Pollack, an advisory board chaired by Benjamin Stokes, and researchers at the Michael Cohen Group led by Gerad O'Shea.

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COLLABORATING INSTITUTIONS

For a full list of discussion and distribution partners, see Appendix.

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EXECUTIVE SUMMARY

This is the first report in a series on game "impact types." We begin with the problem. Our field needs a better way to talk about impact -- a deeper conversation that is more fundamentally inclusive and multidisciplinary, yet still evidence-based. This report is a first step, revealing the basic fragmentation and documenting its harm.

Not just beginners, but our best journals and public awards can inadvertently overlook full categories of impact, and disagree on what evidence looks like. Creativity is too easily and unhealthily pitted against impact design. Even the language of "double-blind trials" can ironically blind our field to certain types of impact.

Success may require new umbrella language to enable meaningful comparison and improve coherence and efficacy -- especially across stakeholders. Power may need to be shared, rather than giving preference to either researchers or designers.

The primary contribution of this first report is to make five basic claims about how the field is currently fragmented, establishing a foundation for more systematic solutions. Along the way we reveal why we are talking past one another, in public and private. Our second report (forthcoming) will dive deeper into proactive solutions, as hinted in the pages below.

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FOREWORD: FROM THE DESK OF G4C

We're excited to share a new project to get at the big picture, recognizing the growing breadth of games, and seeking new coherence in describing their impact. Better guidelines are needed to evaluate which games deserve funding, how to measure and define success, and how to integrate game design with research.

The leaders in our field know that the stakes are high. After more than a decade, games that address social issues are at an inflection point: the funding base is broadening, and so is the language of impact. As a facilitating organization, Games for Change has seen a real shift -- from early anecdotal claims to the rise of game-specific research and evidence models. Of course, quality is more important than ever.

Ironically, our growth as a field - including the diversity of game types and impact goals - has made it hard to ***see the forest for the trees***. Let's not forget: the rise of social impact games was somewhat unexpected. Growth came organically ("let a thousand flowers bloom"), not through a single research program. Some of the big early examples came from surprising places, including student games launched by MTV and passion projects from the UN World Food Programme.

Why now? We are motivated -- and troubled -- by a confluence of factors. Inconsistent impact claims are ***marginalizing some games***, and some game developers. Too many great developers and researchers are mistaking their own tools with being 'the only tools', or mistaking the impact they measure with being 'the best kind of impact'. Among the dischord, some game developers have begun to reject impact claims entirely.

We fear the ***gulf between research and practice*** is growing as silos begin to deepen. We are missing a shared language of impact -- many terms are unwittingly divisive, their power elevates one kind of game while undermining another. Both sides must come together: if developers refuse to model impact, or if researchers undermine the beauty and art of games, we will not succeed.

The idea for this project began in a side-conversation at our 10th-anniversary Festival in New York. Asi Burak had been running around all morning, filled with the usual mix of adrenaline and stress as the festival hummed and the business cards flew. Then a familiar face took him aside: Benjamin Stokes, who had co-founded G4C a decade prior, proposed we step back and rethink "impact" -- identifying fragmentation, and creating a more inclusive typology of how games affect social issues. Three months later we received funding for this report from the David & Lucile Packard Foundation.

One year ago we selected the Michael Cohen Group (MCG), a leading research firm in the NYC area, to help investigate. MCG has a history of exploring complex problems in novel environments. Their initial research laid the groundwork for the project, and resulted in the following report.

Certainly this project is ambitious. Our first report will not "solve" the challenge of complexity -- in fact, we object to quick fixes that mask the reality of complex social issues. Yet with patience we believe a more inclusive and field-level conversation is possible for "impact" through games.

If the first decade of the movement was about encouraging a thousand flowers, then now it is time to push for coherence -- including an umbrella notion of impact that supports the growing diversity of our games. We invite your reflections and participation!

***Asi Burak**, Games for Change, and **Benjamin Stokes**, Advisory Board Chair, on behalf of the project team*

FRAGMENTATION AND IMPACT

"*Impact*." Our approach in this report centers on this one word, in lieu of other applied research terms (especially *evaluation* and *assessment*). Why? Impact is the shared goal of every social impact game: to have an effect, an influence -- to make a difference on an individual or community level, or even affect society. In other words, impact can occur at very different levels of granularity.[1] Types of impact abound.[2]

But there are deep differences in how the word is understood. Our research shows that even sector leaders and game scholars have diverging views. For this report, we conducted a series of interviews (*see Methodology Appendix*), asking notable experts and new participants to define 'impact' for their own work, and then give an example of what might demonstrate such impact. What did we find?

Perhaps most troublingly, some designers are almost entirely alienated by the practice of impact assessment. As one said, "[I] don't want to make games that can be assessed." Yet even traditional scholars had deep divergence. We spoke with health experts who insisted that the gold standard is the double-blind randomized control study on individual behavior. But then we spoke to community organizers, who insisted that the community must be evaluated as a whole, not as an aggregate of individuals, nor with narrow "treatments." But that's not all. We also spoke with political organizers seeking policy change, where impact was understood in terms of the "policy agenda" and whether there was a shift in the public discourse.

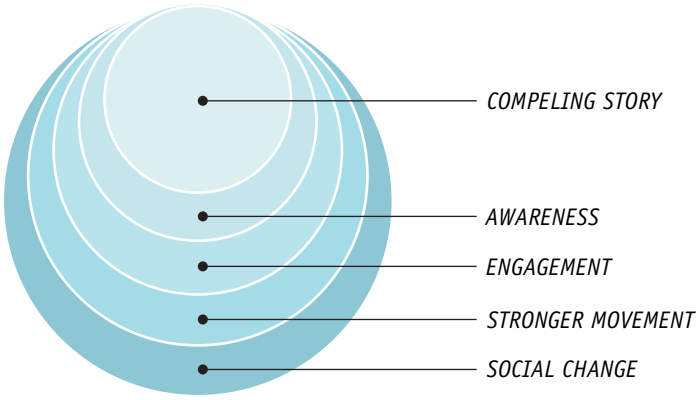
1) Sociologists may attempt to explain such differences in terms of granularity (macro, micro, and meso levels; Geddes, 2003).

2) The range of impacts being pursued varies from fostering deep "systems thinking," to building social ties (see *Macon Money* in Taylor and Whatley (2012)) to fostering learning and motivating behavior change, to facilitating self-expression and actualization, and the controversial use of "gamification" to structure labor - including raising real-world money.

On a visual level, impact is modeled in very different ways, perhaps even divergent ways. (The figure below shows three different approaches to underscore the diversity of impact models.)

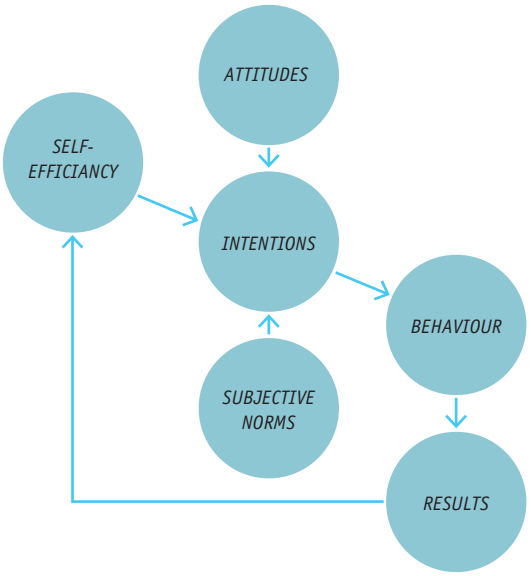
Figure 1: Models for impact and change vary incredibly

a. Social change from media
Source: Fledgling Fund



b. Network-driven behavior
Source: Framingham obesity study

c. Self-efficancy beliefs (Bandura)
Source: Cardiac Rehabilitation Programe at Bispebjerg Hospital



"Impact" is a seemingly simple word. But it presents a different way to see the field than the usual categories (e.g., by discipline, game genre, or sector). Impact cuts across the work of the community, eliciting disparate responses that reflect each person's experience, frustration, training, field of study, and even personal agenda. So which fault lines did we follow?

A COMPLEX COMMUNITY

One reason for the divergence is that 'impact' embodies the standards of surprisingly diverse stakeholders and subgroups. Pity the newcomer to the field, who must sort through 'impact' as defined separately by:

- **Sectors:** e.g., healthcare, education, economic revitalization;
- **Disciplines:** e.g., civic crowdsourcing, the learning sciences, health behavior change, and perhaps most importantly;
- **Stakeholders:** e.g., game designers, investors, players

These differences are deep. For example, conflating 'learning' with 'K12 schooling' undermines the ability to recognize deep learning in informal spaces, activist training, and even brain games for the elderly.

The knowledge and experience of each of these diverse groups is scattered across their respective conferences, academic programs, and distribution channels. (For a hint of the diversity in open reports, see Figure 2 below.) Language fun damental to articulating the assumptions behind social impact games often varies depending on where you look. We refer to this phenomenon as ***fragmentation***.

Figure 2: A few of the many fragmented reports classifying game and media impact

Even among leading game scholars, there are broad assumptions about what *kinds* of impact are worth pursuing. Whatever the explanation, the effect is the same: games are targeting such fundamentally different *types* of problems that it is very difficult to summarize "what games do." Scholars have made some valiant contributions (see our fifth claim on typologies), yet the fragmentation problem cannot be solved by scholars alone.

‘GOOD’ FRAGMENTATION VERSUS BAD

Of course, some fragmentation is natural and even beneficial. Specialization is necessary for deep expertise. Leaders and academics often have strong incentives to establish their own brand and type of games. And organizations competing for funding have incentive to paint their work narrowly in order to appear at the forefront. Quality requires depth and some silo walls.

However, too much fragmentation can seriously limit the community’s potential. We fear that such fragmentation is obscuring project potential and field growth. As we will show in the next section, fragmentation is already undermining funding, game development and program evaluation.

The goal of this collaborative project is to start building a broader roadmap to unite practitioners and researchers around game-based impact. Our field is not alone. Other domains like documentary film are also fiercely debating the value and dangers of common metrics (e.g., see the Participant Index).

Ultimately, the tools we most need may be about the right language and conceptual links for the big picture. But before we can propose a path forward, we must first agree on the problem: we are fragmented, and that fragmentation has consequences.

FIVE CLAIMS OF FRAGMENTATION

(AND HOW THEY INTERFERE WITH OUR ABILITY TO CLAIM IMPACT ABOUT THE FIELD)

Do you ever have a tickle in your gut that the conversation about 'impact' with games is a bit… unnecessarily convoluted? Simple and powerful stories of success exist -- but they hide behind a fair bit of finger-pointing, positioning and uncertainty. Countless times we have overheard someone muttering, "Why don't those people get it?" or even "Why are the good games mixed in with all these mediocre games?"

After a year of investigation, we confidently say: it's not just you -- the fragmentation is widespread, and cannot be dismissed as newcomer ignorance. Yet the deep roots are hard to pin down. As two field leaders warned:

> *"They are talking past each other and may not even know it."*
> **Kurt Squire** / Education and civic games scholar at UW-Madison

Or more simply:

> *"We are at a stage where clarity…is critical for the growth of this field."*
> **Ron Goldman** / CEO of Kognito (training games, health and behavior)

We sympathize -- there are simply a lot of moving parts. The field of social impact games has many actors, and many sub-areas of expertise.

The scope is worth noting. In our first dozen interviews, stakeholders mentioned **45+ areas of expertise** (see Table 1) and nearly **90 roles and types of stakeholders**. Such breadth and diversity within a field is not uncommon, nor necessarily a bad thing in the early days of a new field.

Insert 1: A Highly Multidisciplinary Field

Below are a few of the diverse specialties claimed by interviewees. One of the hallmarks of games is that they require multiple disciplines just to build -- from their code to storytelling and mechanics. Even more domains are required if the game is to go beyond engagement to tackle impact. Stepping back, one way to understand "the field" is as a collection of participating disciplines.

Assessment - Applied Research - Behavior Change - Civic Media - Community Organizing - Communication - Computer Science - Entertainment Education - Game Studies - Games for Health - Impact Design - Instructional Technology - Persuasive Play - Pervasive Gaming - Program Evaluation - Social Movement Studies - Usability Research - (etc.)

Our research inspected the fragmentation and its origins. Over the past year, we conducted interviews and focus groups with field leaders and stakeholders in the U.S., from New York to Wisconsin and California. We gathered evidence of the varied forms of fragmentation and how each affects our community -- seeking any roots that might point to new solutions (*see Methodology Appendix*).

Five manifestations of the fragmentation are identified below. Each is phrased to reveal a distinct source or type, based on our analysis. Above all, they are designed to be useful in understanding and addressing the fragmentation in our field. The manifestations are:

#1 / IMPACT IS DEFINED IN NARROW WAYS:
When impact is defined too narrowly, some games are dismissed for the wrong reasons and their impact is overlooked.

#2 / KEY TERMS ARE POLITICIZED:
When stakeholders use core terms (like 'game' and 'assessment') polemically, productive debate often breaks down as the community becomes polarized.

#3 / EVALUATION METHODS ARE INFLEXIBLE:
When researchers have just one gold standard for evaluating games, honest inquiry into complex games is undermined and design becomes more siloed and rigid.

#4 / APPLICANTS ARE CONFUSED BY CALLS FOR FUNDING AND AWARDS:
When organizations advertise a call for proposals, new applicants are often confused about the categories and debate is harmed by a premature (and unintended) sense of consensus.

#5 / TYPOLOGIES ARE DEEP BUT NOT CONNECTED:
When experts summarize the field they must draw boundaries, but consumers of research need ways to connect various frameworks, literature reviews and typologies.

Sound bleak? Stay with us. We are pushing for diagnosis in order to get at solutions (mostly in the next report, but there are a few good hints below too).

Although each category points to distinct strategies, several of the origins do overlap. There is thus a need for a few cross-cutting and integrative counter-measures. Time will tell how to best balance a combination of highly targeted and cross-cutting approaches.

How did we settle on these five categories? In broad strokes, we used a rough grounded theory approach, developing categories and seeking saturation after parsing and reparsing interviews, and checking for validity on the final categories by querying field leaders and advisory board members (for more, see *Methodology Appendix*). These categories make sense now, but may evolve over time. Pragmatically, which seem most useful to you?

CLAIM #1

IMPACT IS DEFINED IN NARROW WAYS

When impact is defined in narrow ways, some games are dismissed for the wrong reasons.

Defining impact in a narrow way -- even accidentally -- can exclude valuable games for the wrong reasons[3]. The celebrated game FoldIt has often been misconstrued in this way. Answering the question, "did FoldIt have an **impact**?" is a matter of perspective: quite often, the answer depends on the listener's definition.

Insert 2: Background on **FoldIt**

This online game allows non-scientists to arrange 3D proteins, folding them into increasingly complicated structures. Players receive points for folding them into biologically relevant formations, a task where humans often are better than computers. So far, thousands of people have played FoldIt, leading to the discovery of novel strategies for predicting protein structures[4] that may combat disease[5]. The August 2010 issue of Nature published an article on FoldIt that featured thousands of players as co-authors. (Image credit: FoldIt screenshot with logo[6])

We discovered that the term impact is often filtered through an ideological lens, leading to drastically opposing views. In the case of FoldIt (see box above for background), two sides emerged. Some members of the learning science community dismissed FoldIt as not demonstrating impact because it did not explicitly teach players about proteins. Implicitly they focused on student learning, and they failed to consider the game's contribution in helping solve an important global challenge.

By contrast, some practitioners with training in community organizing said FoldIt achieved impact, but on a different measure: by successfully **harnessing collective action**. Specifically, the game provided a platform to organize and structure thousands of hours of labor towards a civic goal. Moreover, these hours tapped into a distinct ability of humans: visual problem-solving (we have large visual cortexes!) and creative puzzle-solving. The result was a success for the creators of F*oldIt* who had leveraged the crowd to discover a new protein used to develop medications.

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3) Relying on shorthand language can aid efficient communication between like-minded people. If a health expert always had to qualify every term when talking to colleagues, communication would be impossible!

4) Cooper, S., Khatib, F., Treuille, A., Barbero, J., Lee, J., Beenen, M., ... & Popović, Z. (2010). Predicting protein structures with a multiplayer online game.Nature, 466(7307), 756-760.

5) Eiben, C. B., Siegel, J. B., Bale, J. B., Cooper, S., Khatib, F., Shen, B. W., ... & Baker, D. (2012). Increased Diels-Alderase activity through backbone remodeling guided by Foldit players. Nature biotechnology, 30(2), 190-192.

6) http://homes.cs.washington.edu/~zoran/, University of Washington, n.d.

We encountered a number of people who seemed stuck on the press-friendly narrative of impact-as-learning. Ironically, even the designers seemed to feel pressure to attribute some learning outcomes to the game, despite its explicit objective to gather data from players! The temptation to use impact and learning interchangeably is detrimental to the development of our broader field.

BOTTOM LINE: Do all games with impact have to teach players, or even emphasize learning? Of course not. In fact, narrow notions of impact can foster exclusion. Even leading games can easily be misunderstood when impact is defined too narrowly. Broader umbrella terminology for impact might help. One counter-measure we can advocate is to value and more publicly articulate the "secondary impact" of a game -- i.e., beyond a singular narrative of intended impact, push for also stating at least one secondary (and often unintended) impact.[7] Secondary impact can also mean acknowledging more than one *granularity of impact*. Beyond impact at the individual level, also talk about how the game might support impact at a community level, or at a societal level (or vice versa). For more, see the *Assumptions section below*.

CLAIM #2

KEY TERMS ARE POLITICIZED

When stakeholders use core terms (like 'game' and 'assessment') polemically, productive debate often breaks down as the community becomes polarized.

We discovered that the words fundamental to successful collaboration like 'game' and 'assessment' have become litmus tests -- forcing people to be "with us or against us." Specific groups are acting as arbitrators, using the language of the field to both identify themselves politically, and disparage the work of other groups. Projects that fail to meet the criteria of these arbitrators are being entirely dismissed, undermining the community's desire for interdisciplinary collaboration.

Exhibit A: Only counting games with "assessment."

Assessment enthusiasts often discredit games that lack an explicit research design. Of course, the whole point of models is that they do not need to be proven every time. The enthusiasts go further, refusing to consider game phenomena in the absence of research design. In the words of one interviewee:

"Who cares whether it's a good game, what is the underlying theory of impact?"
(Interviewee)

This type of polarization stems in part from the rising movement of evidence-based programming and accountability[8]. Assessment is often integral to securing government

7) As Debra Lieberman from our advisory described it so well, "Game designers may have designed a game with the intention to achieve specific impacts -- such as learning specific content, skills, attitudes, self-concepts, feeling emotions, social relationships… [but] beyond these intended, designed-for, observable, measurable impacts, there is a potentially rich world of unintended impacts to be discovered."

8) For an overview of this movement, see Haskins, R., & Margolis, G. (2014). *Show Me the Evidence: Obama's Fight for Rigor and Results in Social Policy*. Brookings Institution Press.

and philanthropic funding for social initiatives, and there is a thriving community developing around assessment practices, including assessment for social impact games.

"Where is all the evidence!?" (Interviewee)

Exhibit B: Keeping assessment out of "the game."

We discovered a similar purism from certain game designers. Many insisted that if the game is not good, it doesn't matter what the theory or assessment behind the game is. Game purists were thus doing the same thing: declaring their criteria to be primary and nearly exclusive. Returning to FoldIt, the downside became apparent when we asked a prominent designer about the game's impact and the conversation stalled -- all he could say was:

"It's just not a good game." (Interviewee)

In other words, they were refusing to consider the evidence until the game was established as a "good game."[9]

Comments like these are common at multi-disciplinary conferences, and even the applied writings of the field. Of course, simply making a good game is incredibly hard.[10] But the rhetoric becomes damaging when field members position themselves in opposition to research. Take the following example from a recent presentation at the Games for Change conference:

*"If you can assess it, **I don't** want to make a game about it."* (Paolo Pedercini, presentation on game design at 2014 G4C Festival)

In essence, this individual wanted the field to filter out "assessment." Good filters promote better debate; poor filters stifle it. We saw the resulting suppression of debate:

*"In every conference, there is always a section on what is a game, and **I never go because I'm just going to get mad…**"* (Anonymous Interviewee)

BOTTOM LINE: When debate turns antagonistic (and when funding is scarce), productive conversations and collaborations often break down. To make matters worse, high emotions in all these arguments can make newcomers anxious. How can our field sustain healthy debate, especially about what makes a quality game/quality assessment, while minimizing polarization? An obvious beginning is to resist black-and-white requirements for what "the game" or "the evaluation" is -- and promote multiple notions of quality. Field leaders can also play a key role in setting the tone for debate.

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9) Some interviewees use the term 'good' to refer to the game's productions values (graphics, sound, etc.), while whereas other interviewees used fun and/or entertainment.

10) The deep complexities of game design are evident in the foundational texts that emerged at the same time as the Games for Change movement circa 2004 (e.g., Fullerton, Swain, & Hoffman, 2004; Salen & Zimmerman, 2004).

CLAIM #3

EVALUATION METHODS ARE INFLEXIBLE

When researchers have just one gold standard for evaluating games, honest inquiry into complex games is undermined and design becomes more siloed and rigid.

Over-reliance on a few great research methods undermines broader inquiry into complex and alternative games. Some (celebrated) methods are applied quite broadly -- perhaps too broadly. In particular, we heard concerns about the inscrutability of certain approaches like randomized control trials. There are "gold standards" for every discipline (e.g., anthropology prizes ethnography to get at the heart of culture). Yet some researchers reported that good research was obscured by the disrespect for their methods; for example:

> *"[When I] hear 'where is all the good research?,' [it is really] because they don't respect ethnographies… or case studies."* (Interviewee)

> *"The people that say 'show me the gold standard study,' typically don't have as much interest in core skills or capabilities or aren't even aware of think aloud protocols."* (Interviewee)

Embracing a variety of methods may be vital to address the breadth of games under consideration for social impact. Concretely, this includes showing respect by default to methods that are foreign. For example, we encountered more than one quantitative researcher who did not realize that qualitative methods can be rigorous, repeatable, seek to falsify hypotheses, etc.

Exalting specific research methods often had the side effect of narrowing the types of game that can be evaluated in the first place. It also contributed to the unfair perception that some games with solid evidence supposedly lacked that evidence.

The value and rigor of any method, including the randomized control trial, depends on how well it serves the research context and how aptly it is applied.

BOTTOM LINE: When evaluators and researchers stick too rigidly to their preferred methods they lose the flexibility required to tailor assessment to unusual and complex games. Such rigidity can be dangerous, sometimes leading to games based on evaluation methods (rather than methods based on the game). The rigid use of research methods constricts the richness and rigor of the field overall.

CLAIM #4

APPLICANTS ARE CONFUSED BY CALLS FOR FUNDING AND AWARDS

When organizations advertise a call for proposals, new applicants are often confused about the categories, and debate is harmed by a premature and unintended sense of consensus.

Calls for funding and awards are increasingly publicized for social impact games. We find that potential applicants are frequently confused about whether or not their games qualify. Let's use Games for Change as an example close to home.

Two different gaming showcases -- Indie Megabooth and The Game Awards -- both have a 'games for change' category for their annual awards, independent of Games for Change as an organization. Our interviews revealed substantial confusion about the basic frame/category. In the words of one focus group member:

> *"D'you know what my biggest obstacle is? Just knowing what a 'game for change' is and knowing if the thing I'm making fits the criteria."* (Game Designer)

In focus groups, some participants recognized their confusion while others claimed confidence about the criteria. Ironically, the confident answers were deeply at odds. One interviewee claimed that a 'game for change' must "have a radical activist point of view." But another insisted that a 'game for change' need only have "beautiful moments" about something. Even with time for discussion, the interviewees did not reach any kind of resolution or find common ground.

IMPLICATION: There may be an opportunity to better optimize how RFPs are discussed and understood.

CLAIM #5

TYPOLOGIES ARE DEEP BUT NOT CONNECTED

When experts summarize the field they must draw boundaries, but consumers of research need ways to connect various frameworks, literature reviews and typologies.

What about overviews of the field by experts? Overviews gain their power by drawing boundaries, often using typologies. To achieve clarity and depth, typologies have to leave things out (usually for good reasons[11]). Field leaders and academics create typologies to fill specific gaps in conceptualizing the field, declaring what counts, and elevating the most important categories. The value is often greatest for a specific target audience -- such as a particular sector or discipline.

Yet there is a downside to growth. As overviews proliferate by sub-sector, the ordinary consumers of these resources find it hard to see the big picture. Assumptions are often hidden in the sector or discipline of origin. How do various typologies relate? First we show how each must exclude just to accomplish its overview.

Consider a few different ways games have traditionally been organized:

a. By **business sector / community of practice**. Many typologies inherit economic or sectoral categories. For example, the excellent European Commission Report (2013) provides an extensive foundation for understanding different categories of games. They separate their investigation into domain specialties that are based on economic categories: education, health and civic sector. Similarly, Sawyer and Smith's (2008) valuable serious games taxonomy represented the interconnection of over 49 different community sub-groups. Ironically this taxonomy was intended to broaden the boundaries across which people would view serious games.

   Pragmatically, such typologies involve substantial redundancy, presenting the same taxonomic branches for each subcategory (e.g., health games). Cross-sector games become hard to track, especially their interaction effects (e.g., games that shift behavior by combining health with social activism). Industry categories work well for those with deep backgrounds in theory, but for ordinary consumers of research, the categories can easily conflate sectors with their goals (e.g., K-12 education with learning, or the healthcare system with health). Finally, in a dynamic field it is easy for the sectoral approach to overlook new and economically small sectors (e.g., see the rise of "Different Games" for personal expression[12]), and exclude them accidentally.

11) To achieve clarity and depth, focus and even exclusion is necessary. Moreover typologies are typically created to productively fill specific gaps in conceptualizing the field

12) For an excellent introduction, see the New York Times article on "Twine, the Video-Game Technology for All" by Laura Hudson (November 19, 2014).

b. By **features** of the technology or gameplay.[13] Examples of this typology approach include Lindley's (2003) typology and Breuer and Bente's (2010) typology. While impressive for their ability to compare a near endless set of gameplay features (e.g., multiplayer abilities), such reviews often fail to consider a player's experience beyond the formal design. The same game can have diverging effects depending on how it is introduced or the context in which it is applied. While experimentalists might be tempted to constrain play, and control for undesirable variance, the game may be harmed. Often the effects depend on understanding the game's broader "ecology" -- also called the "big G" game (see Salen and Zimmerman (2004), and Gee and Hayes (2010).

c. By **crowd-sourced** categorization. Are more inclusive typologies possible using technologies of crowd aggregation? Yes, but we warn of confusing the goal with the method. For example, open-access wikis at first glance seem to be a place where anyone (in principle!) could add their game. Yet in practice no wiki to date has reached a definitive mass of participants, at least according to our interviews. Such wikis remain valuable, yet we argue they are not sufficient alone and must be complemented by leadership at conferences and from central nodes on organizational networks.

WHERE NEXT? When seeking frameworks for the field, consider:

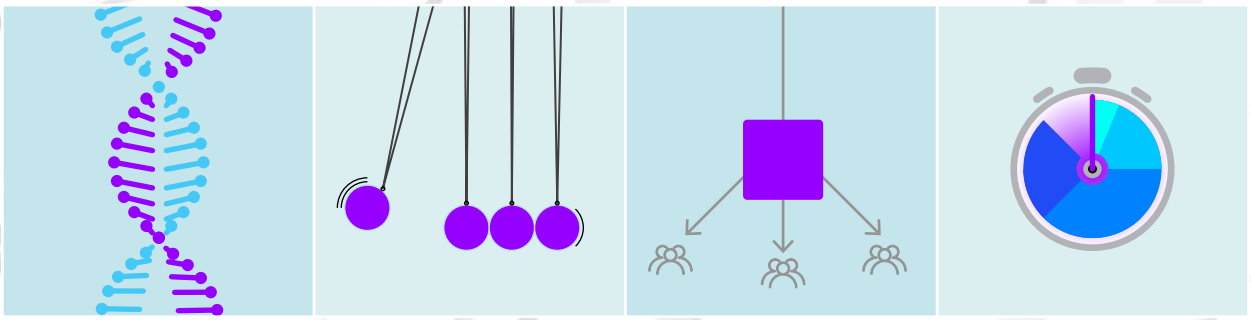
Stay skeptical about any typology that claims to encapsulate the entire field. There aren't any. Continue building on the excellent prior typologies and lit reviews above, but recognize that most academic publishers will implicitly push to exclude some game categories (e.g., a discussion of health games will rarely address how games might shift the national political discourse -- even the national debate on healthcare).

Second, the field might benefit from a bottom-up attempt to be more radically inclusive. Beyond trying to list the broadest range of game features, could we also list the impact theories in use -- even if they fall between the cracks of disciplines? What if we tried to allow non-experts to express theories of change in practitioner terms -- might that reveal artist-led game models that are being overlooked in journals? For a new field, it might be healthy to regularly try to step back, and push to consider a broader range of impact categories.

BOTTOM LINE: All typologies must focus and draw boundaries, but there may be opportunities to look for 'impact' across typologies, between disciplines, and from non-experts.

13) See also the "affordances" of a game, a fancy word in technology studies to describe what users perceive they can do with the design (for an overview, see Gaver, 1991).

COUNTERING FOUR RISKY ASSUMPTIONS



What if much of the fragmentation comes from a few hidden assumptions? We are especially interested in risky assumptions that might be cross-cutting, aggravating more than one of the five manifestations of fragmentation above. Evidence for deep assumptions is often indirect and their description is a bit more subjective; therefore, this section offers careful provocations rather than definitive conclusions.

Here are several cross-cutting assumptions by project leaders and funders that we see as most relevant. Each points to new possible tactics, and most come directly from leaders in the field who had ideas after reading the first draft of this report.

RISKY ASSUMPTION #1

WHEN FUNDING IS SCARCE, DELAY 'RESEARCH DESIGN' AND RESEARCH

In times of funding scarcity (i.e., always), difficult decisions about priorities have to be made. Scarcity raises questions about what can be separated, and what can be sequenced. While it may be appropriate to delay the execution of third-party research, we warn that it is dangerous to defer the "research design."

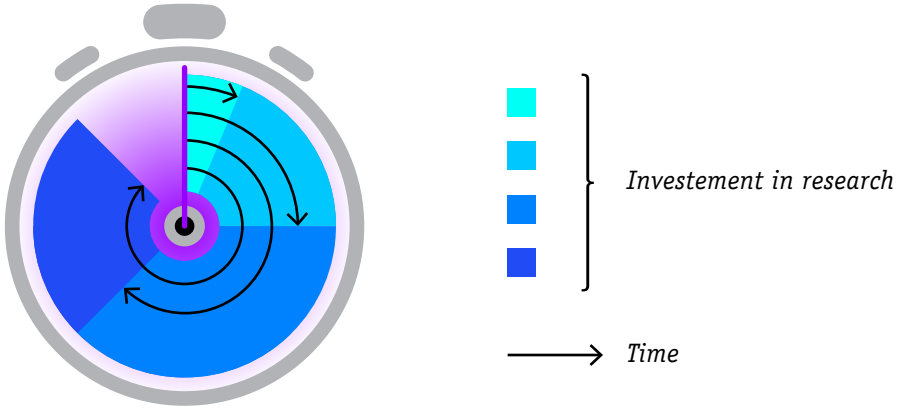
Research design (aka the "blue print" of the study) can be just as important and difficult as game design. But **don't confuse the research with the research design**. The research design is a planning phase, and is part of the design process — without data. We can think of the research design as a kind of "creative problem solving" that is required to convince ourselves — and others — that there was impact, what kind of impact, and based on what evidence and logic.

Difficult decisions about the sequence of design and research still need to be made, even assuming the research design is determined early. One way to empower designers and producers is to **make the strategy more visible**, so that all stakeholders can understand how research is sequenced strategically. For example, consider these diverging viewpoints (we are not endorsing any of these as right, but do think all should be on the table):

A. Delay all research. Only fund research when the product shows promise.
B. Always allocate 5% to research. Such rigid formulas are not unusual for "program evaluation."
C. Either 0% or 500%. The cost of some research designs go far beyond the development resources, leading some to take the attitude that anything less than full funding is a waste of resources.

D. Scaling is the only question worth investing in for research.
E. Quality is the only question worth investing in for research, since the market should handle everything else.

Figure 4: Research can begin at different times, and take different amounts of time



The greatest danger may come from **repeatedly picking the same option** without thought. To counterbalance, our field might push each game project to declare how they sequence and frame design and research, thus necessitating some (public) reflection about which combination is best for their situation. Similarly, **funders with a wide portfolio** of games should be pushed to reflect on how they approach research across a set of games; for example, some projects might be primarily about answering a research question, while others extend established research and so might need less resources to establish they are indeed aligning with a proven impact model.

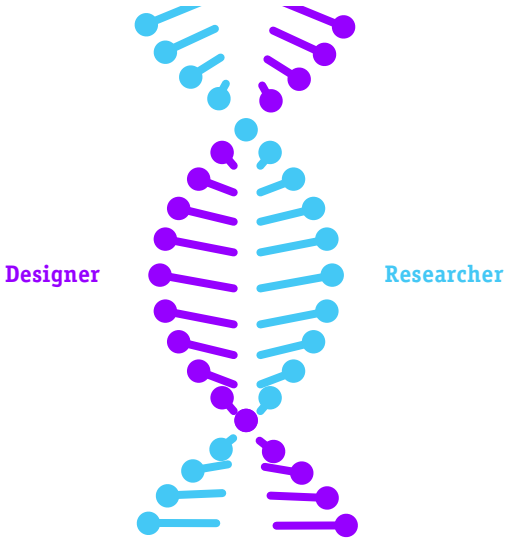
...positive solution: "Always have a research design, but decide case-by-case on the investment to collect specific data."

RISKY ASSUMPTION #2

RESEARCH IS SEPARATE FROM DESIGN (AND IS CONDUCTED EXTERNALLY)

We caution against separately framing design and research. In our view, a frame of "mutual iteration" will yield better impact for many projects, and simultaneously reduce fragmentation. In part, this requires a broader notion of "research" as overlapping with standard design practice.

Figure 5: Good research is often interwoven with design



With that in mind, we urge more respect for user testing as a kind of essential research, and thus more respect for designers as applied researchers, since all good games require play testing. This is a surprisingly overlooked reality, both by designers and researchers. Ultimately, although there are some understandable reasons for emphasizing and scrutinizing robust research design, we argue that placing research on a pedestal, also comes with risks. Most importantly, impact could be lessened if research is delegated to external sources at the expense of deeper integration with design iteration.

Game designers may not realize their options -- let alone their own role in "research." In particular, when designers see game testing and usability as separate from "research," they may fail to capture valuable data on impact. For example, if they only ask whether their players are "engaged" in a narrow sense, they may miss deeper engagement with the issues that brought the player to the game in the first place (e.g., to connect with others, to engage with a social issue, to have an excuse to make a difference). Of course, some research is impractical for making short-term decisions. But we argue that there is great value in empowering designers to optimize the game with the "research" model -- i.e., the model for observing impact that might be used in a formal evaluation after the game has launched.

Additionally, we suspect that there is particular tactical value in mutual advice between designers and researchers. Specifically, designers can be asked to recommend how they might evaluate the game (summative); simultaneously, evaluators can be asked to recommend how they might improve the game (formative). Improving the linkage between formative and summative research (and formative and summative researchers) seems likely to reduce fragmentation and improve our field-level conversation. Along the way, we are helping to take the word "research" a notch down from its pedestal to be more accessible to all.

> ...*positive solution:* Iterative design should include "mutual iteration" -- including the research approach and "paper prototype" evidence" (they should co-evolve; good designers must think like researchers and vice-versa)

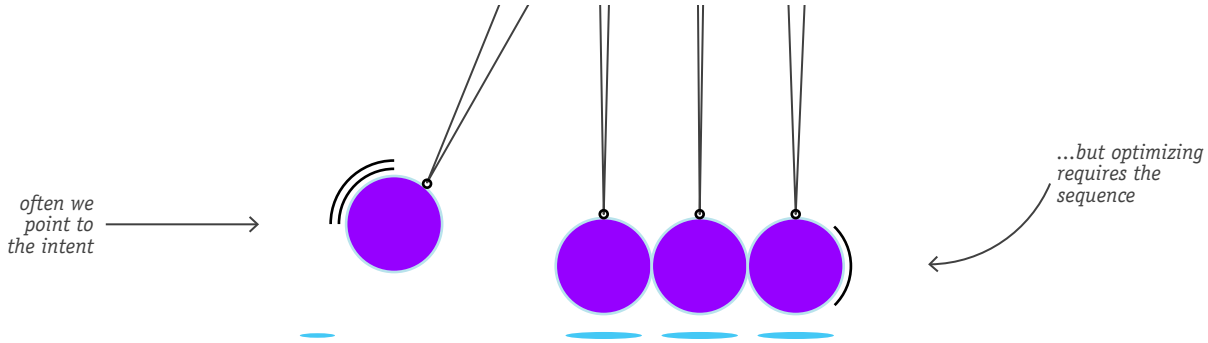
RISKY ASSUMPTION #3

THE LOGIC MODEL IS OBVIOUS

It is not uncommon for game projects to launch without publicly declaring how they expect impact to come about. That's understandable -- it is pretty easy to describe a vision for the outcome, but much harder to explain the causal logic that leads to success. We can describe the gap as a missing or underdeveloped logic model.

(For those new to the nonprofit sector, logic models are used by organizations to plan and account for their impact, and are often spelled out when organizations dive into strategic planning.)

Figure 6: The logic model is what-caused-what



Particular danger comes if design teams consider their model "obvious." What that often means in practice is that the "logic" is only descriptive -- without causal claims. For example, "the players will learn math through Dominoes" is a start, because it implies a causal factor (Dominoes). However, it does not specify how playing dominoes actually leads to math skills. To do that, you might say that "math is deeply learned through practice, and Dominoes forces players to practice basic math (especially dividing by five)." More radically, you might also say that "playing Dominoes in teams can create a 'need to know' that catalyzes much faster acquisition of math skills like division -- including by showing players the social benefits of being skilled at dividing by five."

What are the benefits?

- Unexpectedly, articulating your logic can be wildly **generative**. Even simple models lead to new ideas -- including new ideas about how to optimize design, wrap around services, and track impact.
- For the field, there will be **fewer misunderstandings** between stakeholders. That's because all games have multiple pathways to impact; in other words, they're complex! (In terms of the report's main claims, we can reduce fragmentation in claims #1 and #3 with better logic models.)

- Finally, by specifying the logic of a game, the whole field will understand the game better. Looking across games, the logic model is what allows us to **"generalize" success** and try to improve a whole set of games… categorically!

Fortunately, anyone can articulate the logic model with a bit of effort. Simply state "what caused what" (or take your best guess!). Be brave. Making your logic public can feel a bit exposed and out on a limb -- but it also shows a kind of deeper confidence. When the game is just being released it is tempting to keep you cards close, but there are deep benefits to the field (and the game!) of proactive transparency.

> …*positive solution:* "Articulate HOW your impact is happening (be transparent, be brave, reveal your logic model)."

RISKY ASSUMPTION #4

TO SCALE IMPACT, OUR GAMES MUST BE MASS MEDIA

Who doesn't want scale? Surprisingly strong emotions often swirl around the topic of scaling. The problem is that assumptions on scaling can obscure alternatives to how change happens in the world.

The most common assumptions are true… *sometimes*. Consider:

- "We want impact… **as mass media**" (e.g., we need a massive audience -- so without a million downloads, why bother?)
- "We want scale… just **like commercial videogames**" (e.g., unless we can compete with commercial titles, how can a game have impact?)
- "We want scale… **by changing policy**" (e.g., unless the game changes a law, who cares if it affected public opinion — because we need structural change, right?)

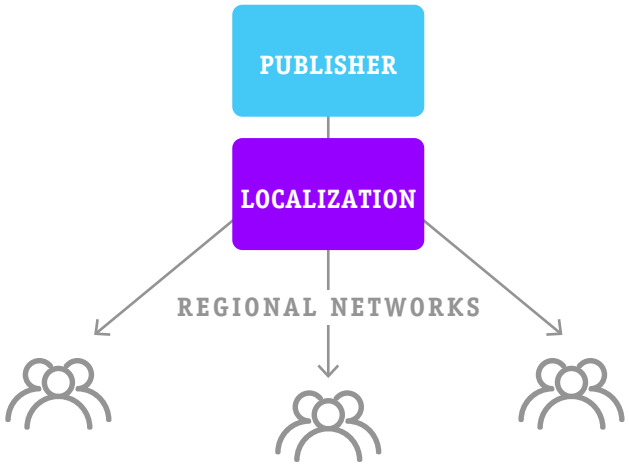
…none of these is "wrong" per se, and the policy emphasis is strange enough to many artists, but they can obscure other possibilities.

Consider these ***alternative scaling approaches:***

- Games can be used in a campaign that seeks to "**shift the culture**" of a community by triangulating several local interventions (e.g., to establish a "college going culture" in a particular high school, see this FutureBound study). Such triangulation is hard to achieve nationally, and so is more often pursued in cities, states, or even within a particular school.
- Some game projects embrace **local customization** as an approach to achieving scale, despite the costs. Theses projects resist the idea that a single international implementation would be effective for local communities. Much like local parks and economic

planning, these games approach scale as the “mass localization” of an approach, in opposition to replication.

Figure 7: An alternative scaling model



Both emphasize a level of granularity beyond players and mass media. Instead of starting at the individual level (player) and scaling directly to “mass audience” level, they insist on the importance of establishing a coherent context like local culture.

Even traditional games can benefit from multiple models for scaling. Most simply, one game may actually have impact on multiple levels. For example, a game might set out to shift individual behavior, but discover it has shifted cultural norms as well. Simply to be good observers of our own games, we may need to actively stay open-minded to secondary and unintended impact models.

More proactively, a team with enough capacity and care might begin to combine several kinds of scale deliberately. For example, after launching a mass media game in the Android store, the team might also launch a series of community-based discussion groups. In fact, this may be the best strategy for ambitious goals like policy and social reform, which are never unidirectional but transform when society reaches a tipping point. Ultimately, our best games may be appropriated to target additional goals and secondary campaigns, gathering coherence for reform like a snowball.

Overall, we try to stay agnostic and resist picking one “best” model for scale. Our recommendation is to beware the assumptions that come with singular notions of scale — especially seeking scale via a mass media approach. Better games will come from making decisions about scale, rather than defaulting into an assumption. As a field, we can help each other identify secondary scaling opportunities and listen more deeply when we make room for multiple pathways to societal change.

...positive solution: "There are multiple ways to reach scale (not just as mass media) for many games, and definitely for the field as a whole."

LONG TERM PROJECT BENEFITS

Here are some possible gains from reducing fragmentation, some of which we hope to investigate in future publications. Have ideas? ***Please contact us!*** *Shaping the field requires alignment on many levels -- from individual games to distribution, and research models.*

(a) For Game Designers and Makers

The process of research can seem daunting, but in fact all game designers engage in research when they test their game for playability. More work is needed to help bridge such formative approaches with summative evaluation. If the lack of evaluated games is any indication, a common scenario is to focus on creating the game and worry about evaluation once it is done (if at all). However, this approach typically leads to games that are only loosely optimized to meet their impact goals. The creative process can embrace impact theories as generative constraints, not an external annoyance. In the longer term, this project aims to help foster communication between game developers and researchers. We want to make it easier for game designers and researchers to apply their skills in aggregate.

(b) For Funders, Impact Investors, and Publishers

Funders have a tough job: to determine which projects merit investment, given the risks and impact alternatives. Evidence-based approaches are becoming common, but they are not sufficient and in fact can easily be misunderstood. Understanding fragmentation can help funders to justify their investments in more accessible language. More fundamentally, games are so inter-disciplinary that success may depend on collaboration across funding agencies to build valid models for what works. Reducing fragmentation can help multiple funders to coordinate and build a solid research base across the sector.

(c) For Researchers

A desired benefit of this project is to improve access to common, agreed-upon metrics that will be customizable for new game projects. Community standards will help researchers appraise the impact of social impact games more quickly. This will speed the process of acquiring funding for new or existing projects by not having to constantly convince funders of the basics. New researchers will have a starting point from which to learn about methods of impact and how to apply them to game projects. At the same time, researchers will better be able to suggest how they can support the design process throughout, improving the quality of the game and not simply measuring its effects.

(d) For NGOs and Cause-driven Managers

It has frequently been the role of cause-driven organizations (also called NGOs, social innovators, etc.) to act as "go-betweens." In game projects, they have the relationships with funders, game developers and researchers. Without ways to connect various frameworks of impact in games, producers struggle to coordinate and communicate the impact goals across funders, developers, and researchers. More straightforward language across disciplines and sectors will help these groups to do less translating and have greater confidence that their projects are living up to their impact potential.

LOOKING AHEAD

We admit that the problem of fragmentation is not all bad. In fact it's often a good dilemma to have, one that reveals the growing pains of a community ready to come into its own[14]. How the field sorts good from bad fragmentation will shape design, the legitimacy of our funding, and ultimately our impact.

To unify the field and be more inclusive, careful language and principles are needed for what works -- including to better connect existing frameworks. How should best practices be aggregated across discipline?

In future months this project aims to gather a set of perspectives and resources at the intersection of research and design, including:

1. A list of commonly misappropriated terms that frequently contribute to breakdown of communication;
2. Reflection pieces on the intersection of research and design, and how they should relate to funding;
3. Links to leading case studies that blend research with creative game and impact design;
4. Case studies with documented research methods for various stages and types of impact assessment.

One specific approach that we propose is to develop a typology of impact types, focused explicitly on social issue games. Such a typology would complement the excellent prior typologies (including those that organizing the field by sector, by genre, and by game feature). Perhaps more radically, we propose to consider how such a typology could be validated beyond experts[15], becoming a more public effort that adapts to community guidance.

Do you have an idea to share?[16] Now is a perfect time to ensure we are inclusive, and extend prior work. This report is just the beginning of a longer and increasingly public process and conversation. We look forward to deepening the conversation -- and our community -- in the months to come.

14) It is noteworthy how much the social impact games community has grown in so short a time. In 2004, when Games for Change was founded, the community was comprised of a handful of practitioners interested in pursuing games for purposes beyond entertainment. Today, it is an international community with members spanning many professions, government agencies, artists and change makers. Many funders of traditional public media have invested in games, and beyond media many funders of social issues are exploring how games might work as part of existing services.

15) Fragmentation cannot be solved by dictating a solution (Simkins, 2014), including by imposing a set of categories or norms.

16) Send your feedback to ideas@gameimpact.net.

APPENDICES

COLLABORATORS, FIELD LEADERS & DISCUSSION NODES

The following organizations have committed to helping spread this conversation in some form, including by hosting conversations around the report, by distributing the report, and/or by providing critical guidance to help refine the report. Of course, they are not responsible for any errors or content in the report itself.

- American University Game Lab
- ASU Center for Games and Impact
- Center for Digital Games Research at UC Santa Barbara
- Center for Media and Social Impact (CMSi)
- The David & Lucile Packard Foundation
- DML Research Hub
- E-Line Media
- Engagement Game Lab at Emerson College
- ETC Press
- Game Innovation Lab (GIL) at the University of Southern California
- Game Innovation Lab at NYU Polytechnic School of Engineering
- Games for Change
- Games for Change Europe
- GamesAndLearning.org
- Games+Learning+Society
- GlassLab
- Higher Education Video Game Alliance
- HopeLab
- The Joan Ganz Cooney Center
- Media Impact Project at USC
- Michael Cohen Group
- Network Impact
- PETLab at Parsons, The New School for Design
- Schell Games
- Serious Games Initiative at the Wilson Center
- Smithsonian Center for Learning and Digital Access

METHODOLOGY

1. Interviews & Advisory Board

Research targeted key leaders (funders, researchers, experts, game designers) across related fields to a) describe the current fragmentation of the field, b) inform the development of the impact typology categories; and c) identify the best modes of dissemination—beyond "toolkits"—to advance the field. A goal is to identify evidence acceptable across fields that can contribute to a unifying framework. To meet these objectives, MCG utilized qualitative focus groups interviews with practitioners, participants, and beneficiaries, as well as in-depth interviews with experts, game designers, and funders.

The Advisory Board is comprised of experts—many with extensive background in games research and design—to provide strategic direction as well as specific input. See elsewhere in this document for a list of participating individuals.

2. Grounded Theory

We used a rough grounded theory approach to guide our research. This process entailed gradually developing and refining our understanding of fragmentation through the analysis of data (Glaser & Strauss, 2009), which allowed for a continuous interplay between analysis and data collection (Strauss & Corbin, 1994). We favored this approach as it was highly suited to including our collaborators in the research process.

To avoid biasing the interviews, we typically delayed any mention of fragmentation in the first half of the conversation. We started by asking broad questions to interviewees and advisory board members to elucidate the challenges they encountered working with others in the community. After listening to their accounts, we searched for a pattern amongst their experiences. We then developed categories that captured common themes, continuing to seek evidence after parsing and re-parsing interviews, checking for validity on the final categories by querying field leaders and advisory board members on pragmatic grounds.

3. Literature Review

We identified game-based typologies that appeared in qualitative reviews, research studies published as books or chapters in books, peer-reviewed journal articles, conference presentations, websites, technical reports, and dissertations utilizing the academic search engines Discover Fordham University Libraries' Resources and Google Scholar. We used search terms including 'game typologies,' 'game classification,' and 'game taxonomies' to locate existing typologies. The authors also integrated typology research provided by project members, including the advisory board, and interviewees.

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