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An Iterative Approach to Qualitative Data Analysis: Using Theme, Cultural Models, and Content Analyses to Discover and Confirm a Grounded Theory of How Gaming Inculcates Resilience

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Abstract

We present a qualitative data analysis framework that integrates perspectives from theme analysis, cultural models analysis, grounded theory, and content analysis. We demonstrate how these research traditions are united in their aim to, first, uncover meaningful themes and, subsequently, to

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understand those themes' relationships to each other. To illustrate our approach, we present research on video gamers' understandings of productive and detrimental responses to failure. Initial themes, cultural models, and grounded theory analysis of 10 semi-structured interviews led us to the theory that video games help players learn to cope more productively with failure, which we confirmed in a subsequent content analysis of text extracts from an online survey ($N = 64$). Overall, we propose that commonly employed approaches for analyzing qualitative data can be usefully conceptualized as research steps or stages, which move from the initial identification of themes to understanding their relationships, and from inductive exploration to deductive confirmation.

We propose an iterative or steps-based framework for the analysis of qualitative data, which draws from what have been called theme analysis (Ryan and Bernard 2003), schema or cultural models analysis (D'Andrade 1995; Quinn 2005; C. Strauss and Quinn 1997), grounded theory (A. Strauss and Corbin 1998), and content analysis (Krippendorff 2018; for illuminating discussions of each of these, see Bernard et al. 2016: chaps. 5, 10, 11, and 12). These four text analysis frameworks have their own traditions and adherents and, as such, are often treated in isolation from each other. Here, we propose that these analytical approaches can be usefully conceptualized as steps or stages of research, from the initial identification of themes to understanding their relationships with each other, and from inductive exploration to deductive confirmation. To illustrate our approach, we present research on video gamers' understandings of productive and detrimental responses to failure, which was conducted spring 2019 in a collaborative ethnographic laboratory setting at Colorado State University (CSU).

The foundation of the approach we present here rests on what has been called theme analysis—with *themes* roughly defined as discrete ideas or concepts expressed in speech, texts, films, paintings, and other media (Ryan and Bernard 2003). We refer to those themes that can be held or "chunked together" in working memory as *schemas* (D'Andrade 1995: chap. 6)—abstract mental representations of the world that interrelate a set of traits or elements to form discrete cognitive objects that help us reason about something, as in the case of a *bird* schema tying together traits like *beak*, *wings*, *feathers*, *flies*, *sings*, and so forth. However, we focus analysis on *cultural models*—"mental representations shared by members of a culture" (Bennardo and De Munck 2014:3)—which, following D'Andrade, are more

cognitively complex than schemas (D'Andrade 1995: chap. 7; see also Dressler 2017:61).

As we use the term, cultural models integrate various themes or schemas together to encode and represent a larger amount of socially transmitted knowledge, which helps members of groups reason about relationships between particular things, persons, and processes in the world. As still somewhat discrete cognitive objects, cultural models can be further related to antecedent causes and resulting effects, to build social scientific *theories* inductively from the ground up—grounded theory, as that process has been called (A. Strauss and Corbin 1998). Theories, whether held by social scientists or their respondents, interrelate declarative statements about the world (referred to as *propositions*) into general descriptive and explanatory frameworks (D'Andrade 1995:150, 172). Further, theories that are "grounded" in initial qualitative data can lead to new *hypotheses*—predictions on the basis of preliminary evidence about relationships between two or more variables (Bernard et al. 2016:246)—that can be further confirmed in subsequent text through deductive and quantifiable content analysis approaches (Krippendorff 2018).

In putting these analytical traditions in dialog with each other, we show how theme and cultural models modes of analysis can be used in early exploratory stages of research to help formulate a grounded theory, which subsequently can be further confirmed via explicit hypothesis testing in a content analysis stage. Overall, we demonstrate how analyses within these different research traditions are linked by their common aim to, first, uncover meaningful themes and, then, to reveal those themes' relationships to each other. A cultural models approach, for example, can clarify the structure of more complex conceptual categories that unite themes. Subsequently, a grounded theory approach can be used to further illuminate previously hidden relationships such as those of cause and effect between themes. Finally, the grounded theory can be further confirmed in a content analysis of new textual data.

In what follows, we first describe our collaborative video game research, including our study focus and design. We follow this with sections on theme analysis, schema/cultural models analysis, grounded theory, and content analysis. Each of these sections begins with a description of the method, followed by examples of how we employed that method in our study. Throughout, we emphasize linking prior to subsequent forms of analysis, while also highlighting what is distinctive about each stage of analysis. In our concluding discussion, we further expand on these four approaches' potential for synergy, which, as we'll show, is premised on both their

differences to each other and their oftentimes hidden similarities. In that final discussion, we also touch on the disciplinary differences that led these approaches to diverge in the first place, as that gives insight into how—and why—they might be productively synthesized.

Video Games and the Art of Failure

Research Question and Design

In the spring of 2019, in the context of Snodgrass's semester-long CSU psychological anthropology lab course, we wanted to clarify causal pathways connecting cultural consonance—"the degree to which individuals, in their own beliefs and behaviors, approximate the prototypes for belief and behavior encoded in cultural models" (Dressler 2017:82)—and mental wellness. Biocultural theories of emotion led us to anticipate that relationships between individuals' experiences of "consonance" with socially shared ideals and their mental wellness might be mediated by positive and negative social emotions such as pride, shame, and guilt (Fessler 1999). For example, meeting others' expectations might instill a feeling of pride, which could bolster wellness. By contrast, failing to meet others' expectations might produce shame or guilt, potentially contributing to the development of mental disorders such as major depression or severe anxiety.

Building on prior work on experiences of success, failure, and wellness in online gaming (Snodgrass et al. 2014), we decided to explore these ideas again in the context of video game culture. We developed an interview protocol that allowed gamers to speak about their experiences of success and failure, along with the accompanying emotions. We were interested in clarifying psychosocial processes that led some gamers to deal more productively with failure compared to others—e.g., learning from their failure how to better succeed rather than becoming emotionally distraught. Such processes, we reasoned, might provide insight into sources of psychosocial resilience that further mediated relationships between meeting personal or social expectations (the latter a proxy for cultural consonance) and emotional experiences like pride and shame, which became our main focus. (Online Appendix A describes our interview procedures and script.)

In our initial stages of research, we spoke with local video game players who self-identified as "gamers" and played video games at least 20 hours per week. Each of the lab's six student participants—three graduate students and three undergraduates, a mix of gamers and nongamers—interviewed one to two gamers (70% male, mean age: 25 [range 20–33]),

typically people in their own personal networks, for a total of 10 interviews ranging between one and two hours in length. Students transcribed the audio-recorded interviews using software such as StartStop (https://www.startstop.com) and otranscribe (https://otranscribe.com/). These transcripts were the focus of our first theme analysis, cultural models analysis, and grounded theory rounds of *coding*, using the software MAXQDA (Kuckartz 2007). Here, codes are the names or labels given to individual themes, and coding is the analytical process of defining themes and their relationships in codebooks and applying those codes to chunks of text such as lines in a transcribed interview (Bernard et al. 2016:125).

Initial interviews were followed by developing an online survey, which we posted on gaming-related Internet forums like Reddit and Facebook and distributed in our personal networks, encouraging (in snowball sampling fashion) video gamers we knew to encourage others to take our survey. We received 64 responses. The survey included an open-ended question about how failure in gaming had changed (in a positive, negative, or neutral way) the intensity and duration of respondents' emotional responses to life failure, which we coded (again using MAXQDA) in a subsequent content analysis round of analysis (for the online survey, see https://forms.gle/8989y9bFSdYEcj6g9).

Identifying Themes

Method. Ryan and Bernard's (2003) "Techniques to Identify Themes" outlines methods to spot thematic elements in interviews or other text. In Ryan and Bernard's (2003) framework, a *concept* is an abstract idea represented in the mind, while a *theme*, as the basic unit of textual analysis, is used by analysts to describe repeated examples of a concept as it appears in speech or some other medium of communication. Their techniques to identify themes include repetitions, indigenous typologies or categories, metaphors and analogies, transitions, similarities and differences, linguistic connectors, and missing data. Ryan and Bernard (2003) show how just these basic principles can be used to illuminate themes in a range of analyses such as identifying through thematic repetition Connecticut blue-collar workers' concerns about money, family, and life (C. Strauss 1992); illuminating "tramp" worldviews by focusing on indigenous typologies such as "ways to make a flop" (find a place to sleep for the night; Spradley 1972); and identifying metaphors like "life is a journey" to illustrate the structure of American thought (Lakoff and Johnson 2008).

Analysis. As might be expected from our relatively wide-ranging interview protocol and the idiosyncrasies of each interviewer–interviewee encounter, those interviews produced many distinctive themes, with the thematic content varying sometimes dramatically across our student interviewer-coders. For example, Kaylin Clements, a graduate student collaborator, identified 60 themes, which she tagged (via codes) to 382 text segments. Cynthia Ortega, another graduate student, linked her 33 themes to 195 text segments. And Samantha Lauth, an undergraduate member of the lab, also identified 33 themes, which she tagged to 89 text segments (for further detail on these students' MAXQDA code systems for this analysis, see Online Appendix B).

Despite the somewhat different focus of student collaborators, each of them nevertheless identified the similar idea that *failure can be a learning experience*. Clements coded this as *growing* (31 tagged text passages) under her mechanisms that helped her interviewee (and gamers in general) *cope with failure*, one of her most heavily coded categories. For Ortega, learning experiences such as these were captured in her more generic *constructive responses to failure*, which, with 21 tagged text passages, was her most utilized code. For example, her interviewee referred to failure as a "teaching experience" to be remembered for the future. Lauth coded this theme in her respondent's own terminology—what has been called "in vivo coding" (Ryan and Bernard 2003:89)—such as "moving forward—one thing to the next" (five coded passages), with echoes in other in vivo themes such as "not the end of the world" (three coded text segments) and "all hope isn't lost" (also three coded segments).

Here are verbatim quotes illustrating this *learning from failure* theme:

1. "I think definitely for me my overriding emotion would be determination to succeed, like let's say, 'Oh shoot, this sucked then let me try again' or 'Let me do something a bit differently to make sure it works.' Yeh, initially disappointment, then afterwards trying to get better to make sure either it doesn't happen again or you know, 'I can do it successfully the next time'." (KC)
2. "Those things are all little feedback loops that can give me those minimum inches of success, that little dopamine burst of, 'You did it!' or, that little, 'Ah! I failed, but I know why, so maybe I can fix it next time and be able to apply it right away to the next time and fix it'." (CO)
3. "I think that just comes from how people view failure, some people view it as like an opportunity, they look at it as a learning

experience, where I think other people when they fail at something they don't view it as a learning experience and they view it more like, 'It's all my fault and I'll never be able to fix it'." (CN)

4. "Someone that's just handed things their whole life and then unexpectedly fails at something might not take that the same way as someone that tries and tries and tries and fails and fails and fails. It's all perspective. Some people see it as a stepping stone, other people see it as a roadblock." (MA)

Repetition across respondents was critical in helping us identify this *learning from failure* theme. But as illustrated in quote #3, failure viewed as a learning experience reflects actual local gamer ("indigenous") ways of speaking. Too, in the last quote (#4) from Michelle Anderson's interview, metaphors signaled to us this underlying theme, for example, failure as a stepping-stone rather than a roadblock. Transitions between descriptions of failing, emotion-laden embedded quotes, and subsequent constructive emotional and behavioral responses to the failure—"Oh shoot, this sucked then let me try again" (#1), "You did it!" (#2)—further clarified our understandings of this *learning from failure* theme. Likewise, similarities and differences in how transitions occurred added nuance to our grasp of this theme—i.e., the way failure inspires different responses, such as initial disappointment and subsequent determination (#1), cool-headed analysis of how to do better (#2), and a gaining of perspective (#4). Further, linguistic connectors—"then afterwards" (#1), "so maybe I can fix it next time . . . " (#2), "where I think other people when they fail . . . " (#3), and "the same way as" (#4)—signaled our respondents' transitions and logic.

Another important emergent theme was the *it's just a game* idea, implying that "the consequences for failing in gaming are less than in real life." Clements coded this theme 15 times, and those coded passages included the more memorable moments in her interview and thus featured both in her written analyses and contributions to group discussions. This theme also emerged as important in Cody Nixon's interview, with his respondent telling Nixon: "If I fail at a video game, I typically laugh about it because it's not something serious, right? But if I think I lost my place where I live, I would be exponentially [laughter] more depressed." Further, this *it's just a game* theme resonated with Nixon's own experiences as an avid gamer, which we treated as additional confirmation of this theme's importance in gaming culture.

Even where this *it's just a game* theme was not mentioned explicitly in interviews, the idea implicitly shaped respondents' reactions to gaming

failure. For example, the theme animates Lauth's coding of ideas such as, "not the end of the world and online gaming success being more abundant than off-line success"—with the latter suggesting that one can always try again in games, the successes and failures coming in typically quick succession. In Ortega's interview, she coded seven themes as *structure/control* and six as *remembering*. The idea in those (13 total) passages was that because games are simpler than life, they allowed her interviewee to practice failure in a more predictable environment with fewer consequences, with that memory helping her respondent better cope with real-life failures. As seen in these examples, this theme's importance was also revealed in the absence of its explicit coding because of its taken-for-granted nature—an example of Ryan and Bernard's "missing data."

Schemas and Cultural Models

Method. In foundational cognitive anthropological work, Quinn conducted in-depth interviews—an average of 15–16 hours of taped conversation in each case—in the 1980s in North Carolina with husbands and wives in 11 marriages (Bernard et al. 2016: chap. 12; D'Andrade 1995: chap. 7; Quinn 1987, 2005: chap. 2; C. Strauss and Quinn 1997). From analysis of the transcribed interviews, she elicited what she called an American cultural model of marriage. The model consisted of eight major characteristics, as seen from her respondents' point of view, which, Quinn argued, exhaustively accounted for the hundreds of metaphors her respondents used when speaking about marriage. These eight characteristics were (1) sharedness, (2) lastingness, (3) mutual benefit, (4) compatibility, (5) difficulty, (6) effort, (7) success or failure, and (8) risk.

Quinn's analytical technique consisted of identifying key words and phrases used by her respondents to talk about marriage, categorizing those into (the above eight) overarching concepts, and generally heeding how such concepts shaped her interviewees' reasoning about marriage. As we interpret this work, each of Quinn's eight identified marriage characteristics are *themes* in Ryan and Bernard's (2003) sense—discrete concepts expressed in this case in speech (Bernard et al. 2016: chap. 5; Ryan and Bernard 2003). The eight thematic components are also conceptual *categories*, as Quinn herself points out, as they each categorize or classify together in a group-related key words and metaphors that illustrate repetitively the same theme. However, Quinn further grouped those eight themes into a more complex, yet still unified, schematic cognitive object that shaped her respondents' thinking regarding marriage—a *cultural model*,

which Dressler (2017) defines as "a stripped-down, skeletal representation of some cultural domain" (p. 61).[1] Cultural models, then, in Quinn's analysis, group together conceptually related themes at a still higher level of abstraction, in this case as individual thematic components of the overarching category of marriage.

Analysis. Our initial group discussions showed convergence in what respondents considered *productive* as opposed to *detrimental* responses to failure—for example, in our respondents' parlance, *learning and growing from failure* rather than *dwelling on failure*—with these two sets of themes becoming a focus of analysis. In addition to *learning and growing from failure*, which was the most salient positive theme from our interviewees' points of view, other common *productive responses to failure* included *taking responsibility for the failure*, *viewing the failure as an opportunity*, *practicing to get better*, *seeking support from others*, *asking for help*, *talking out the failure with others*, and *laughing off the failure*. Along with *dwelling on failure*, which was the most salient negative theme, other prominent *detrimental responses to failure* included *stop trying*, *obsessively trying to fix the failure*, *blaming others, blaming oneself*, *keeping to oneself*, *using substances*, *self-medicating*, and *lowering expectations*. *Seeking distraction from the failure in other activities* and *avoiding thinking about the failure* were viewed ambiguously, with some respondents thinking of them as a positive response to failure, others negative, and still others neither.

Each of these lists are cultural models of a kind—i.e., socially learned frameworks of meaning that reflect (and shape) gamers' thinking and experience related to how to productively as opposed to detrimentally handle failure. Further, each of the two models—or three, if we count the ambiguous items—join numerous themes into relatively unified, if complex, cognitive objects. The *productive responses to failure* model emphasizes personal responsibility and growth along with the importance of social interdependence (a responsible individual who seeks support from others), while the *detrimental responses* model highlights the diminishment of the self and isolation from others (a blameworthy individual who keeps to oneself), and the *ambiguous responses* model focuses on psychological (and potentially psychosocial) escape. As Quinn showed in her own analysis, these cultural models' individual components—which we equate with themes—illuminate more complex thinking at higher levels of abstraction. That is, *productive and detrimental responses to failure* are conceptual categories that themselves are composed of thematic subcategories. (Online Appendix C provides illustrative quotes from our interviews for each of the

three models' items related to productive, detrimental, and ambiguous responses to failure.)

Grounded Theory

Method. In a grounded theory approach, researchers develop theories from the "ground-up" through inductive analysis of interview or other textual data (Bernard et al. 2016: chap. 10; A. Strauss and Corbin 1998). The process consists of line-by-line coding of text—i.e., tagging text passages with thematic labels—and theorizing the relationship between themes. Analysts generate *memo* notes as they advance to track their theorizing. The theory is refined as analysis proceeds, first, through analysis of an individual text such as an interview and, then, through subsequent data such as additional interviews. In some forms of grounded theory, *theoretical sampling* is employed, whereby analysts select new informants to clarify emergent themes rather than to approximate a population (A. Strauss and Corbin 1998: chap. 6). The theory is judged complete when researchers reach *data saturation*—i.e., additional coding fails to identify new significant themes or relationships between themes but instead largely confirms prior analysis.

This description approximates our approach as presented thus far. Via line-by-line coding of interviews, we first identified themes, such as *learning from failure* and *it's just a game*, which in certain grounded theory traditions is called *open coding*—"the analytic process through which concepts are identified and their properties and dimensions are discovered in data" (A. Strauss and Corbin 1998:101).[2] As Ryan and Bernard (2003) point out, theme analysis groups repeated key words, metaphors, and the like into shared conceptual categories, which in grounded theory terminology "defragments" texts. Nevertheless, open coding is more typically understood to be a fragmenting process, in the sense that analysts identify even hundreds of individual themes in the course of analysis, with themes distinguished from each other by unique code names. In A. Strauss and Corbin's (1998) own analysis, for example, they distinguish in an open-coding phase of a drug use study themes like *limited experimenting* from *hard-core use* (p. 117).

Our cultural models stage of analysis represented a more radical defragmentation of texts and thus data condensation. In that stage, we lumped similar themes together into just three higher-order conceptual categories, *productive*, *detrimental*, *and neutral responses to failure*, with each composed of component subcategories (e.g., *learning from failure, dwelling on failure*). Our cultural models stage of analysis resembled what A. Strauss

and Corbin (1998) refer to as *axial coding*: "the process of relating categories to their subcategories, termed 'axial' because coding occurs around the axis of a category, linking categories at the level of properties and dimensions" (p. 123). In A. Strauss and Corbin's (1998) own drug use study, the conceptual category of *why teens use drugs* included subcategorical thematic elements such as *liberated self*, *easy access*, *novel experience*, and *challenging the adult stance* (pp. 125–26).

Further reminiscent of grounded theory analysis, student collaborators moved iteratively through (typically) two interviews, generating memo notes, which refined our understanding of cultural models' thematic elements. Likewise, lab discussions produced additional "analysis," in the sense of clarifying models' individual items and their relationships. In hindsight, completing the first round of interview analysis before moving ahead with the second set of interviews would have allowed us to theoretically sample in ways that might have further clarified our understanding of our study's cultural models, as compared to our convenience and snowball sampling method.

Further analysis led us to theorize *causal* relationships between themes—i.e., relationships between the cultural models of *productive and detrimental responses to failure* and those models' prior causes and subsequent effects. In grounded theory, this represented another defragmenting process—a form of *selective* coding in Strauss and Corbin's terminology (Chun Tie et al. 2019:4)—in the way that we produced a discursive set of theoretical propositions that linked key individual themes and cultural models theme sets discovered in earlier stages of the study, as we now describe.

Analysis. Group discussion of coded interviews in particular led us to the idea that our gamer respondents saw "video game play as potentially providing psychosocial resilience to failure and its negative emotional fallout," which also finds support in the scholarly literature (Juul 2013). That is, video games, if played in the right "productive" way, could provide gamers with a source of resilience in the face of life failure and psychosocial stress. According to respondents, gaming allowed them to rehearse life challenges in a safe and fun practice environment. In that safe space, gamers learned how to better cope with real life's invariable defeats—i.e., by *learning from* rather than *dwelling on* those failures. In learning via games how to more healthfully respond to failure, interviewees told us they also learned how to better control negative emotional responses to failure, in essence protecting their mental health. According to both our analysis and the scholarly literature, there is thus an "art of failure" (Juul 2013)—a healthier way to handle it—and video games helped players cultivate that skill.[3]

As stated earlier, *theories*, including those "grounded" in qualitative data, are typically expressed in explicit propositions that together form general explanatory frameworks (D'Andrade 1995:172). We thus state our theory in propositions, which our analysis was revealed to be sequentially and causally related[4]:

1. Exposure to failure is a key factor that helps gamers develop the ability to cope productively with failure.
2. For gamers, an important productive method of coping with failure is learning and growing from it to move forward (rather than dwelling on the failure).
3. Other salient productive (as opposed to detrimental ways) of dealing with failure are encoded in the various cultural models component themes previously described—e.g., *taking responsibility for the failure* as an example of a *productive response to failure* and *stop trying* as an example of a *detrimental response to failure*.
4. Gaming provides safe and easily obtainable opportunities to be exposed to failure.
5. Gaming teaches gamers the coping skill of learning and growing from failure to persevere.
6. Having productive coping skills helps gamers avoid anxiety and depression in everyday life.

Drawing from prior sections' analyses, this grounded theory links the *learning from failure* theme (stated in proposition #2) and *it's just a game* theme (proposition #4) to our cultural models analysis (#3). Further, we add propositions (#1, 5, and 6) to clarify (according to our respondents' perceptions and experiences) the *causal* relationships between these statements—"as safe 'practice' for real-life failure, video gaming helps players acquire psychosocial resilience"—a theory fully grounded in our interview data. (Online Appendix C also shows how these six propositions are exemplified in our interviews.)

Content Analysis

Method. Unlike grounded theory, content analysis starts with known theory, from which researchers deductively generate hypotheses that can be quantitatively confirmed in textual data (see Bernard et al. 2016: chap. 11; also Krippendorff 2018). For example, drawing from social exchange theory, Elizabeth Hirschman hypothesized that men and women would differentially seek in partners resources like status, money, physical beauty, and

emotional support (Hirschman 1987; as summarized in Bernard et al. 2016:251–56). Analyzing a random selection of 100 female-placed and 100 male-placed personal ads in *New York Magazine* and *The Washingtonian* from May 1983 to April 1984, via predefined resource variables/themes, Hirschman quantitatively confirmed four of her hypotheses, including how men sought physical attractiveness more than women, and women offered physical attractiveness more than men (Bernard et al. 2016:255).

For our purposes, we employed content analysis to test our previously described *grounded theory*. Specifically, we hypothesized that video game players would report that their gaming experiences helped them acquire more productive ways of emotionally handling failure. To test this idea, we developed the online survey described earlier in our methods section, which included the open-ended question:

> (Optional) Please explain how your experiences with failure in gaming have changed the intensity and duration of your emotional response to failure in your life. Here, you could discuss how gaming has improved your emotional response to failure, lessened your ability to respond in a healthy and productive way to failure, or neither/both. Please try to give as much detail as possible and explain exactly how gaming has impacted the way you emotionally process and cope with failure in your life.

As in our first round of interview analysis, though this time in a confirmatory content analysis mode, we coded text responses in MAXQDA. But here we developed ahead of time a more carefully defined codebook (Bernard et al. 2016: chap. 6), complete with text passage examples, as we sought to confirm our hypothesis with quantitative evidence in the form of code counts. We received 64 survey responses, of which 39 either responded to our above optional question and/or provided information in other comment boxes that allowed us to code how they understood the role gaming played in their ability to cope with failure (see Online Appendix D for our content analysis codebook).

Analysis. Qualitatively, numerous survey respondents directly confirmed our hypothesis that gaming helped them more productively handle failure, with one telling example presented here:

> I guess one way I've approached this issue is by framing more things as a learning opportunity. Games are great in that they offer (relatively) low-cost consequences to failures: if you mess up, you aren't going to lose your job or your house. That offers you more opportunities to take risks, learn from

> mistakes, and make the corrections you need to succeed in whatever it is you're doing. I think that kind of growth mindset is especially helpful for real life issues. If you can start to frame everything as a learning opportunity and a way to grow, you take the pressure of off yourself and instead think introspectively about how to get better, rather than negatively about yourself. If you fail in a game, you can take the time to think whether or not you could've done something differently, adjust to whatever it is that caused you to fail, and then probably get some reward for accomplishing whatever it is. In real life, you can approach things in the same way: yeah, you might've failed at something the first time, but if you re-evaluate the approach, retry it, and succeed, you're rewarded with the spoils of success (whatever they might be). (see Online Appendix C for additional survey text passages that also confirmed our hypothesis)

Further, according to quantitative results from Nixon's and Ortega's content analyses, respondents overwhelmingly viewed games as helping them positively cope with failure, confirming our hypothesis: 25/22 text segments (Nixon's/Ortega's respective code counts) were coded as showing games as playing a positive role in this regard, compared to 1/0 negative, 7/8 neutral, and 4/3 unclear (the split numbers here again refer to Nixon's/Ortega's code counts; additional content analysis results are presented in Online Appendix E).

Discussion

In this article, we've demonstrated how theme and cultural models analysis approaches to qualitative data can be used in preliminary exploratory stages of a study to build an explanation that fits with the grounded theory tradition, which subsequently can be further confirmed via explicit hypothesis testing in a content analysis stage. We used four perspectives on qualitative data analysis to discover and confirm the theory that "video games can help players learn to cope more productively with the experience of failure in their lives." Overall, the analysis presented here allowed us to advance in our understanding of relationships between meeting social expectations (cultural consonance) and mental well-being. We learned that video games can help gamers practice failure in safe and relatively structured environments, which can play positive roles in helping gamers learn to better regulate their emotional lives.

In our analyses, we have pointed to important differences across these traditions of qualitative data analysis. For example, coding in our first three more exploratory stages of research (theme analysis, cultural models analysis, and grounded theory) was inductive, relatively free, and somewhat chaotic. But we transitioned in the fourth and final confirmatory

content analysis to a narrowed deductive and quantitative testing of relationships between a few clearly defined codes. Such differences highlight the unique histories and disciplinary contexts of analytical traditions such as grounded theory and content analysis. For example, Glaser and Strauss, recognizing in the 1960s a growing division of labor between theoreticians and empirical researchers, explicitly formulated their new grounded theory as an empirically based and inductive alternative to the logico-deductive frameworks of theorists such as Talcott Parsons (Chun Tie et al. 2019; Timmermans and Tavory 2012). The grounded theory approach spread quickly if unevenly across disciplines such as anthropology, education, medical research, and sociology, with advocates of various inductive and deductive approaches often treating researchers in other camps as foils to their own academic identities and practices (Timmermans and Tavory 2012).

Despite such differences, we've mainly aimed throughout this article to show that analysis across these four research traditions are united in their aim to, first, uncover meaningful *themes* and, subsequently, to understand those themes' relationships to each other. *Cultural models* analysis, for example, can help researchers clarify the structure of complex cognitive objects and conceptual categories that unite themes together: In our case, our respondents' understandings of *productive and detrimental responses to failure*. Subsequent stages of a *grounded theory* approach can further uncover previously hidden relationships of cause and effect between themes: In the case at hand, it showed how video games, if played in a productive way, can help gamers acquire resilience in the face of life failure. And that *grounded theory* can be further confirmed in a final *content analysis* of new textual data, as we demonstrated here.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. A cognitive or cultural domain is an "area of conceptualization" (D'Andrade 1995:34) and thus also something people talk about (Dressler 2017:54).
2. Founded in symbolic interactionism, Strauss and Corbin's approach to coding and analysis is sometimes referred to as *evolved* grounded theory, which, historically intermediate between *traditional* and *constructivist* versions, focuses on the meanings people ascribe to their behaviors (Chun Tie et al. 2019).
3. From within a perspective recognizing the central importance of *abduction* to scientific discovery and explanation—or, inference to the best explanation for novel data, also called *retroduction*—Juul's theoretical propositions could have joined our own grounded observations in helping formulate our new understanding of how gamers learn to better cope with failure. In Charles Peirce's pragmatic philosophy, "abduction refers to a creative inferential process aimed at producing new hypotheses and theories based on surprising research evidence" (Timmermans and Tavory 2012:167). In contrast to dominant forms of grounded theory, any preexisting knowledge, just like any current observations, might offer raw material from which the investigator could create new explanations to make sense of data. It has been argued that abduction provides a realistic account of much actual research (empirically driven and open to discovery, without ignoring current scientific understandings) and a productive way to build cumulative theory (a limitation of pure induction; Timmermans and Tavory 2012).
4. Philosophers sometimes distinguish between *propositions*, whose truth status can be logically and objectively established, from *assertions*, which are simply claimed to be true. Extending this idea, D'Andrade uses the term proposition to refer to statements about the world made by native informants, while assertions are analytical inferences about how native respondents reason based on what they say and do (D'Andrade 1995:172–73). Our grounded theory summary statements resemble more D'Andrade's assertions—i.e., inferences about how our informants think, which were typically not stated in these exact terms by our interviewees.

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