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PLAYFULNESS AS AN ORGANIZATION OF EXPERIENCE
Prioritizing Engagement over Realness, Relevance, or Consequence

ABSTRACT

Leland Masek: Playfulness as an Organization of Experience
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This thesis designs and conducts a multidisciplinary, phenomenological, systematic literature review upon playfulness based upon extending previous theoretical work by Jaakko Stenros. One hundred and sixty-four written works from twenty-one academic disciplines were read and analyzed for their definition of playfulness, resulting in a final list of sixty-five identified definitions used in the last five years. The methodologies used to construct these definitions were analyzed using three contextual analytical tools: *theoretical direction, scope of definition,* and *ludicism*. Using the theoretical framework of phenomenology, these sixty-five definitions were reframed in order to identify connections in modern viewpoints on the internal experience of play.

In the analysis, nine major methodologies, and six themes of phenomenological experience of playfulness are identified. In conclusion they present a unique and valuable definition of playfulness: Playfulness is an organization of experience that prioritizes engagement over realness, relevance, and consequence. Engagement is further defined as coming from attentional fullness, emotional reinforcement, recognizing and manipulating patterns, and sharing perspective. In the discussion some of the far reaching theoretical, ethical, and practical considerations of this new definition are discussed. This thesis also offers two surprising contributions. It discovers an urgent need for scholarship to expand the commonly used binary of discussing playfulness as either a *personality trait* or *state of mind*. Scholars should also consider playfulness from the perspective of a *context likely to enable play* and as an *artifact organized playfully.* The thesis also identifies an ambiguity between two separate concepts both frequently called *spontaneity* and argues why modern scholars should adopt an updated vocabulary.

Keywords: Playfulness, Multidisciplinary, Literature Review, Meta-synthesis

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1 INTRODUCTION

Jaakko Stenros in his 2015 dissertation *Playfulness, Play, and Games: A Constructionist Ludology Approach* argues that game studies should theoretically separate and investigate the three concepts of playfulness, play and games. To argue the theoretical separation between playfulness and play he conducts an interdisciplinary literature review primarily focusing upon classic literature in the fields of game studies (see Caillois & Barash, 2001; Huizinga, 2002; Sutton-Smith, 1997), biology (Burghardt, 2005; Fagen, 1981), psychology (Csíkszentmihályi, 1975a; Kerr & Apter, 1991) and concluding with a depiction of the modern game studies scholars who have sought to define a separate term "playfulness" as isolated from "play" (Heljakka, 2013; Salen & Zimmerman, 2004; Sicart, 2014).

His work opens the territory for new work on the specific term playfulness for game studies in three ways. First, his separation between play and playfulness appears to be a conclusion of a literature review he conducted on both the terms play and playfulness at the same time. He describes the content of his contribution when he describes "The third chapter untangles playfulness from play" (Stenros, 2015, p. 16). This begs the question of what the findings would be if a literature review was conducted specifically on the term playfulness now that it has been untangled. Second, he describes his selection of reviewed work as "This review seems closest to the 'traditional' literature review that usually is not discussed as a method, and which current research method literature has criticised as unsystematic" (Stenros, 2015, p. 38). In this way we can see that there is still a gap in applying systematic selection and review methods on the topic of playfulness. Thirdly, he isolates the concept of playfulness when he describes a differentiation "between the phenomenological personal mental experience of playfulness and the socially shared (and culturally recognised) activity of playing" (p. 64). This use of phenomenology opens the door for defining the scope of a new literature review: How does modern scholarship define the internal experience often associated with play?

In this way I argue that a valuable contribution to modern game studies literature would be a multidisciplinary, systematic, phenomenologically driven literature review on the specific term "playfulness". This thesis extends the work of Stenros and continues from the perspective that "since game studies and ludology, as conceived of today, are both

interdisciplinary as well as young topics with a long prehistory, the production of an overview is a contribution in itself." (Stenros, 2015, p. 37)

In designing and running this literature review, this thesis has engaged in a diverse process of theoretical tool construction and application. In the background chapter, I discuss previous multidisciplinary literature reviews that have been conducted on playfulness and identify a critical gap in literature reviews that focus upon a broad disciplinary scope and systematic synthesis. In the methodology and methods chapter, I argue that a multidisciplinary literature review requires contextual interpretation of included work. I explain three analytical tools that would be valuable for exposing those assumptions about playfulness: *theoretical direction, scope of definition,* and *ludicism.* In doing so, I specify the first research question of this thesis:

Q1: How was the definition of playfulness constructed in the different disciplines that study it?

In order to define the scope of my synthesis, I then explain how I will use the interpretive framework of *phenomenology*. I conclude by identifying the second research question of this thesis:

Q2: How is the internal experience of playfulness defined across disciplines from a phenomenological perspective?

I then address the systematic quality of this literature review by describing a snow-balling multidisciplinary meta-synthesis that I verify through criteria developed by Popay, Rogers, and Williams in their 1998 article "Rationale and Standards for the Systematic Review of Qualitative Literature in Health Services Research". I further design a thematic analysis based on the five phased cycle of qualitative research proposed by Robert Yin in his 2015 book *Qualitative Research from Start to Finish.*

In my results chapter, I explore the multidisciplinary meta-synthesis conducted, covering 147 written works, published in twenty-one self-identified disciplines[1] of study within the last 110 years. After a description of the sample, I discuss a theoretical ambiguity in

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[1] Including a discussion of what is meant by "discipline".

regard to the term *spontaneity* within the sample. After this, I discuss the primary methods used to define the 65 conceptions of playfulness within the sample. I answer question one by identifying nine primary methodologies that were used to define playfulness:

1. Videos of playful play
2. Psycho-linguistic analyses
3. Lexical analyses
4. Focus groups
5. Interviews
6. Statistical analyses of self-assessments
7. Observations of play
8. Literature reviews
9. Theoretical arguments

I explain a surprising methodological finding that the *scope of definition* in playfulness is not just defined as *state of mind* or a *personality trait*, but also is defined as a *context that induces play* and as an *artifact organized playfully*. After this contextual work, I answer my second research question by identifying and phenomenologically explaining the six themes of playfulness present in the sample. The six themes are as follows:

1. Playfulness is an engagement with a single framework of meaning.
2. Playfulness is an openness to new/a change in engaging frameworks of meaning.
3. Playfulness is changing a framework of meaning in order to be engaged.
4. Playfulness prioritizes engagement over external consequences.
5. Playfulness prioritizes engagement over realness.
6. Playfulness prioritizes engagement over relevance.

I synthesize these six themes to construct a new definition of playfulness:

> Playfulness is an organization of experience that prioritizes engagement over realness, relevance, and consequence. Engagement is further defined as coming from attentional fullness, emotional reinforcement, recognizing and manipulating patterns, and sharing perspective.

I then use this definition to discuss several paradoxes of playfulness that become less ambiguous using this newly developed theoretical framework.

I conclude with a discussion of the approach taken, limitations of the study and next steps.

2 BACKGROUND

Over the course of this chapter I will explore the depth and breadth of interest in defining the internal experiences of play across numerous fields of study. Then, I will explore previous literature reviews that have been conducted on *playfulness* and closely related terms within individual disciplines. I then identify and explore past calls to action by several influential scholars in multiple fields on why extensive multidisciplinary literature reviews would be a benefit.

2.1. Literature on Playfulness

Academic interest in the effects of playfulness has grown exponentially in the last century. From 1900 to 2010, Google Scholar presents 763 entries with playfulness in their title. From 2010 to 2019, 847 entries are available on Google Scholar with the same search criteria. Despite growing interest in the concept of playfulness, it lacks a generally accepted definition. This ambiguity arises in part because different academic fields have independently studied and defined this concept for their own purposes.

Scholars have argued that the internal experience of playfulness is definitively inconsistent (e.g. Turner, 1986; Wittgenstein, 1968). Despite these claims, scholars from several fields have attempted to describe the unique characteristics of the internal process associated with the external events we identify as an act of play. These fields include: biology (Bateson, 2015; Siviy, 2016), cultural studies (Huizinga, 2002), ethology (Burghardt, 2005), education (Fine, 2014; Singer, 2013; Singer, 2015; Tan & McWilliam, 2008), game studies (Arrasvuori et al., 2011; Deterding, 2014; Landers et al., 2019; Lucero et al., 2014; McDonald, 2018; McGonigal, 2015; Nacke et al., 2009; Salen & Zimmerman, 2004; Schell, 2019; Sicart, 2014; Stenros, 2015), human computer interaction (Lazzaro, 2009), information technology (Moon & Kim, 2001; Venkatesh, 1999; Webster & Martocchio, 1992), linguistics (Danet, 2001), occupational therapy (Bundy, 1987; Ferland, 1997), performance studies (Schechner, 1988), philosophy (Caillois & Barash, 2001; Suits, 2018), psychology (Barnett, 1990; Barnett, 2007; Cabrera et al., 2017; Csíkszentmihályi, 1975b; Glynn & Webster, 1992; Gordon, 2014; Guitard, Ferland, & Dutil, 2005; Kerr & Apter, 1991; Lieberman, 2014; Piaget, 1962; Proyer, 2017b; Rogers et al., 1987; Rubin et al., 1983; Sanderson, 2010; Schaefer

& Greenberg, 1997; Shen, Chick, & Zinn, 2014; Sutton-Smith, 1997; Van Vleet & Feeney, 2015; Vygotsky, 1980; Yarnal & Qian, 2011), psychiatry (Bateson, 1955; Berger et al., 2018), responsible research and innovation (Van der Meij, Broerse, & Kupper, 2017), sociology (Goffman, 1974; Henricks, 2015), and sport studies (Schmid, 2009).

Many of these scholars investigate specific types of play such as playing games (Landers et al., 2019; Lucero et al., 2014), playing video games (Lazzaro, 2009), rock climbing (Csíkszentmihályi, 1975b), or "free play" in young children (Lieberman, 2014). While this style of investigation is valuable, other scholars have argued for scientific inquiries to develop a broader understanding of why such different forms of behavior are often called by the term playful (Kerr & Apter, 1991; Salen & Zimmerman, 2004; Stenros, 2015; Sutton-Smith, 1997).

2.2. Literature Reviews on the Experience of Play

Previous literature reviews have defined playfulness as a tool for learning (Van der Meij, Broerse, & Kupper, 2017), as an adult *personality trait* (Proyer, 2017b; Shen, Chick, & Zinn, 2014a), and as a characteristic of healthy development (Gordon, 2014). Other scholars have analyzed the internal experiences of play by studying the effects games have upon higher education (Vlachopoulos & Makri, 2017), learning (Clark, Tanner-Smith & Killingsworth, 2015; Connolly et al., 2012), play and disabilities (Meyers & Vipond, 2005) and childhood interactions with nature including playful interactions (Gill, 2014). Each of the above literature reviews are embedded within a discipline and address literature closely related to their field of study.

Stenros similarly conducted an interdisciplinary literature review including the term playfulness for game studies which he describes as having "drawn upon studies on games and play originating in numerous disciplines, when such work has proven illuminating or has provided an interesting counterpoint." (Stenros, 2015, p.24-25). As discussed earlier, his work opens the door for a systematic, phenomenological, multidisciplinary literature review on playfulness.

2.3. Calls for Multidisciplinary Research

Fields such as psychology have discussed a desire for a greater cross-disciplinary focus in regard to playfulness. Proyer in 2017 wrote that the aim of a special issue for the *International Journal of Play* was

> bringing together selected current multidisciplinary perspectives on play and playfulness in adults. The idea behind this special issue evolved from talking with colleagues across different disciplines. The shared experience is that *play* (the actual behavior) and *playfulness* (the personality trait) are understudied in their respective field and that comparatively even less research is undertaken with adults. (2017a, p. 241)

This special issue brought together eight original articles and two comments that were oriented towards expanding the field of playfulness by focusing on topics outside of traditional psychological conceptions of the study of playfulness.

Articles in this special issue analyze playfulness as a *personality trait* outside of western cultures (Barnett, 2017), study sexual BDSM practices as a form of adult play (Turley, 2017), and define criteria for "playful" urban interventions (Donoff & Bridgman, 2017). While this special issue represented the breadth of potential studies well, it did not include a broad literature review.[2]

Despite this contemporary and widespread interest, no previous systematic multidisciplinary literature review synthesized how playfulness is defined in recent scholarship across disciplines[3].

By exploring previous works that have attempted to define playfulness, literature reviews on playfulness, and calls for multidisciplinary research we can see that a multidisciplinary systematic literature review on the concept of playfulness is timely in several disciplines and would be a contribution to modern scholarship.

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[2] Though it did include a "selective review" of playfulness in psychiatry (Berger et al., 2018).

[3] While it appears to be more common for game studies to describe its work as "interdisciplinary" I have opted for the term multidisciplinary as the purpose of my work "juxtaposes different disciplinary approaches" (Stenros, 2015, p.24)

3 METHODOLOGY AND METHODS: MULTIDISCIPLINARY, PHENOMENOLOGICAL, AND SYSTEMATIC

In this chapter I identify that studies on *playfulness* often frame their conclusions in a way that limits the value of their work for other major fields of study. I argue that integrating *playfulness* literature systematically across disciplines requires systematically identifying the varying methodological qualities of past definitions in order to reframe their conclusions and address their commonalities. I offer three tools to systematically address contextual differences in written works: *theoretical direction*, *scope of definition*, and *ludicism*. I then depict how *phenomenology* provides a strong base for addressing the commonalities in the definitions of playfulness. After addressing the *multidisciplinary* and *phenomenological* nature of this work, I then describe the *systematic* quality of this literature review by answering five questions proposed by Popay, Rogers & Williams in their 1998 article "Rationale and Standards for the Systematic Review of Qualitative Literature in Health Services Research".

3.1. The Value of Tools in a Multidisciplinary Literature Review

Past literature on playfulness cannot be integrated directly. For example, Proyer's (2017b) work defines playfulness as a characteristic of an individual that exists across multiple contexts. From the perspective of game studies, this scope of a definition lacks much of the value of defining playfulness. Scholarship on Playful Experiences (PLEX) (Arrasvuori et al., 2011) asks the question of how playfulness can be created by a certain context or in a game. The capacity to create playfulness in a *context* is at odds to the claim that *personality traits* are stable across multiple environments.

This is not an insurmountable barrier though. Foundational theorists on *playfulness* as a *personality trait* do not reject the idea that *playfulness* can be viewed as contextually sensitive. For example, in the development of the *Children's Playfulness Scale* Barnett describes "rather than regarding play as what the child *does*, the better way is to focus on play as a characteristic of the individual." (Barnett, 1990, p. 320). Barnett's *personality trait* conception is a rejection of a purely behavioral analysis of *playfulness*. Rejecting the study of playfulness as behavior is not in conflict with the conceptions of PLEX which define playfulness as "experiences that are mostly non-goal-oriented and

mainly evoked by fun or pleasurable aspects of using a product" (Arrasvuori et al., 2011, p. 8). These conceptions are united in an interest in how playfulness exists as an experience. Numerous other scholars reject the conception of playfulness as a category observable through an individual behavior (Bateson, 2015; Burghardt 2005; Csíkszentmihályi,1975a; Kerr & Apter 1991; Proyer, 2017b; Shen, Chick, & Zinn, 2014a; Stenros, 2015). For example Proyer (2017b) defines Playfulness as an individual's capacity to alter situations "in a way such that they experience them as entertaining, and/or intellectually stimulating, and/or personally interesting." (p.8). All of the above definitions make claims about the likely experience of playfulness.

I see no reason why the numerous experiential claims on playfulness could not be put into conversation with each other. However, in order to do so I argue there are three tools of assessment that are important for deconstructing the original context of study: *theoretical direction*, *scope of definition*, and *ludicism*. All three of these tools are built to answer the following research question:

Q1: How was the definition of playfulness constructed in the different disciplines that study it?

After building these tools I will argue that the interpretive framework of *phenomenology* provides a strong base to identify commonalities from contextually deconstructed literature. This framework will be applied to answer a second synthetic research question:

Q2: How is the internal experience of playfulness defined across disciplines from a phenomenological perspective?

3.2. Multidisciplinary Tool 1: Theoretical Direction

The first interpretive tool to address varying scientific methodological contexts is *theoretical direction*.

Science can be viewed as trying to connect three different types of information. *Data* involve context specific observable aspects of an event. Generally, *data* is considered universally observable, so two scientists should agree on what the *data* is in order for it

to be valid. *Data* is not repeated so it is expected that in two different studies the *data* will be different. (Haig, 2013) *Phenomena* are repeated events that occur consistently in the *data* within certain contexts. In order for a phenomenon to be considered relevant it must be shown to be consistent across multiple instances of the same context. Phenomena usually require some amount of interpretation to identify their existence. (Haig, 2013) *Theoretical explanations* are broad concepts that explain the existence of why a *phenomenon* occurs. It is generalizable across multiple contexts and it predicts what kinds of *phenomena* should occur in new contexts. (Haig, 2013)

When studying phenomena there are often two strategies for how a scientist connects *data*, *phenomena*, and *theoretical explanations: top-down* and *bottom-up*. (Haig, 2013) The *top-down*, hypothetico-deductive method is the commonly used approach in natural sciences. It involves the construction of an explanatory theory for a broad concept as the first step. A hypothesis of how a specific event will occur is derived from that explanatory theory. Finally, data is collected upon this event. The *data* is then analyzed to see if the *theoretical explanation's* hypothesis should be rejected as a viable prediction for the *phenomenon* that occurred during that event. By rejecting the hypothesis, the *explanatory theory* would then have evidence against it being an accurate broader explanation for that *phenomenon*. (Haig, 2013) In simpler terms,the *top-down* strategy focuses upon developing theory first and then analyzing data from the perspective of that theory.

Top-Down Scientific Inquiry
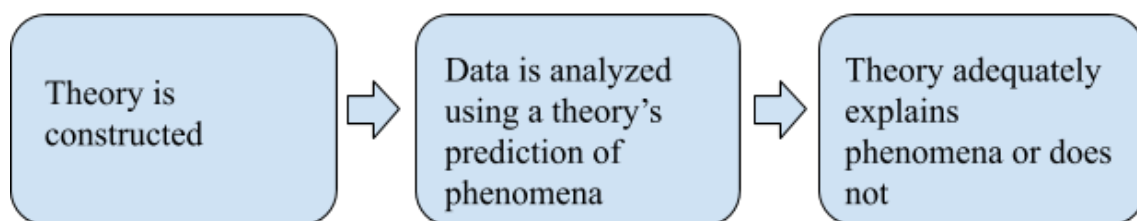
This approach is often used to test whether an explanation for a clear empirical phenomenon is consistently able to predict that empirical phenomenon in a new context. An alternate approach to scientific inquiry is called a "*bottom-up*" strategy and focuses upon induction. *Bottom-up* inquiry analytically interprets data into empirically justifiable *phenomena* first, and then constructs a theoretical explanation that connects the phenomena observed into broader concepts. Rather than developing a theory or deciding a theory from academic literature first, the *bottom-up* method "of scientific

inference extends abductively from claims about phenomena to theories that plausibly explain those empirical claims." (Haig, 2013, p. 146)

Bottom-Up Scientific Inquiry

Data is analyzed for consistent phenomena ⇨ Phenomena is defined as existing ⇨ Theory is developed to explain phenomena
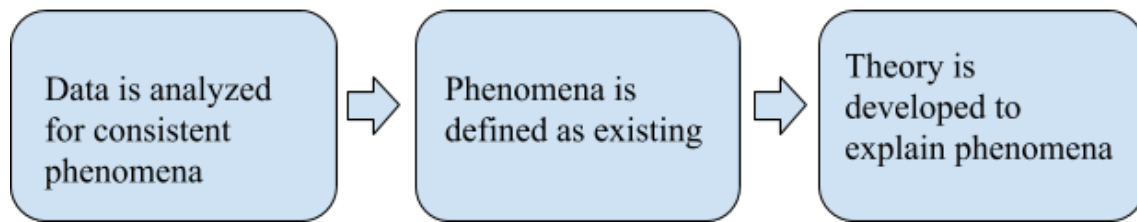
While *top-down* strategies excel at predicting empirically established *phenomena* in new contexts, *bottom-up* (sometimes called inductive) strategies are often considered valuable at adequately establishing the existence and full features of a phenomenon (Yin, 2015). This approach can be especially valuable in qualitative research that attempts to explain the consistent features of a complicated or interdisciplinary question. Yin (2015) connects the use of qualitative research methods with *bottom-up* induction explicitly when he writes "The valuable ideas produced by qualitative research tend to follow a 'bottom-up' approach, wherein specific processes or events drive the development of broader concepts, not the reverse." (Yin, 2015, p. 21).

Considering how *bottom-up* and *top-down* research methods excel at answering different kinds of questions, the first point of analysis in a multidisciplinary literature review of playfulness should be the *theoretical direction* of the methods used to define playfulness*: bottom-up* or *top-down*.

It seems of utmost importance to identify the *theoretical direction* of a definition in part to frame how a quantitative test of playfulness can be qualitatively analyzed. If a quantitative test is derived through a *top-down* approach, then the quantitative test is trying to capture the written argumentation of the author and the argumentation should be prioritized. If one was to analyze Lieberman's playfulness scale for example, one could either approach Lieberman's theoretical work which argues playfulness "arises in familiar physical settings or when the individual has the pertinent facts; that imagination enters by twisting those facts into different combinations" (Lieberman, 2014, p. xi), or could directly go to the content of individual items on Lieberman's playfulness scale such as "VII. How attractive is the child?" (Lieberman, 2014, p. 156). At first look, this content item makes very little sense for the proposed theory of playfulness. It only

becomes clarified when a deeper methodological analysis of this scale reveals that this question was "A check on validity" (Lieberman, 2014, p. 25) for the quality of each individual reviewer's use of the test. It is of utmost importance that one does not treat Lieberman's work as *bottom-up* and think that the answers to such questions on attractiveness defined Lieberman's influential theory.

In this way I explicate the importance of addressing the methodological characteristic *theoretical direction: bottom-up* or *top-down*.

3.3. Multidisciplinary Tool 2: Scope of Definition

The second interpretive tool to address varying scientific methodological contexts is *scope of definition*. This interpretive tool is derived from modern psychological research on play and playfulness.

According to previous literature, playfulness often refers to one of two *phenomena*. The first concept refers to a *state of mind* of an individual and how that person is experiencing a specific moment in their life as playful. Authors such as Apter in psychology ask questions such as what is "the *way* of experiencing what one is doing in playing" (Apter, 1991, p. 14). From this perspective, playfulness "is present in the moment and can be sparked in an instant" (Stenros, 2015, p. 77). This method of investigating playfulness prioritizes how a specific mind interacts playfully with its current environment. The second scope refers to how a person more generally behaves and experiences their life. It seeks to understand the internal quality of playfulness "that transcends situations and activities" (Shen, Chick & Zinn, 2014a, p. 59). Rather than asking about an individual moment, it asks how a person brings a playful quality "to transform virtually any environment" (Barnett, 2007, p. 949). This method of investigating playfulness prioritizes how a playful mind consistently interprets its environment in a distinctive way.

This *state of mind* vs. *personality trait* distinction is commonly used in psychology research on playfulness (Sanderson, 2010; Shen, Chick & Zinn, 2014a), it is also used in defining *perceived playfulness* in digital application use (Moon & Kim, 2001) and *computer playfulness* (Webster & Martocchio, 1992). Certain psychological scholars are consistently labeled as representing *state of mind* definitions, (Czikszentmihalyi, 1975a;

Kerr & Apter, 1991). Other psychologists are frequently cited as the foundation for playfulness as a *personality trait,* such as Lieberman's work (see Lieberman, 2014 for a reprint).

This conception bears theoretical value across disciplines. The modern study of games also frequently emphasizes the contextual nature of the experience of playfulness (Arrasvuori et al. 2014; Deterding, 2014; Lazzaro, 2009). Playfulness as an interaction between a mind and its current context is also presented in creativity research (Bateson, 2015) and education (Singer, 2015).

In order to synthesize a *state of mind* definition with a *personality trait* definition, it seems of utmost importance to be aware of this difference in scope. As both concepts refer to an internal experience of playfulness, I consider both conceptualizations as valid for this form of study.

In this way I explicate the importance of addressing the methodological characteristic *scope of definition*: *state of mind* or *personality trait*.

3.4. Multidisciplinary Tool 3: Ludicism

The third interpretive tool to address varying scientific methodological contexts is *ludicism*. This is an originally created concept that refers to whether playfulness is treated as a behaviorally restricted phenomenon or not. While the application of this term to playfulness is original, the term itself is based on the work of Caillois (see Caillois & Barash, 2001 for a reprint), which is highly influential in the field of game studies.

In his foundational text *Man, Play and Games,* Roger Caillois argued that games should be analyzed based upon how limited players' actions are by rules. He wrote that the play of games exists upon a continuum from "paidia" to "ludus". When defining the nature of paidia and ludus he wrote

> They can also be placed on a continuum from two opposite poles. At one extreme an almost indivisible principle, common to diversion, turbulence, free improvisation, and carefree gaiety is dominant. It manifests a kind of

uncontrolled fantasy that can be designated by the term paidia. At the opposite extreme, this frolicsome and impulsive exuberance is almost entirely absorbed or disciplined by a complementary, and in some respects inverse, tendency to its anarchic and capricious nature: there is a growing tendency to bind it with arbitrary, imperative, and purposely tedious conventions, to oppose it still more by ceaselessly practicing the most embarrassing chicanery upon it, in order to make it more uncertain or attaining its desired effect. This latter principle is completely impractical, even though it requires an ever greater amount of effort, patience, skill, or ingenuity. I call this second component ludus. (Caillois & Barash 2001, 13)

Caillois' paidia and ludus in games echoes a similar debate in playfulness scholarship. Scholars have argued that a player must be limited by behavioral restrictions in order for their engagement to be playful.

In his game studies text *The grasshopper: Games, life and utopia*, Bernard Suits represents one such perspective when he argued that in order for a player to play a game, they need to have a "lusory attitude" which he defines as "the acceptance of constitutive rules just so the activity made possible by such acceptance can occur." (Suits, 2018, p. 40). Suits' usage of attitude focuses upon a player's internal perception of what they can do. As he is describing an internal mental process, his definition is within the scope of playfulness for this thesis. Suits argues that the internal state of playing is defined by an absolute acceptance of behavioral rules. Other influential scholars also believe playfulness is a rule-bound experience (Fullerton, 2008; Vygotsky, 1980; Csíkszentmihályi, 1975a). Several other scholars believe play within a specific game is bound by the rules of that game (Ermi & Mäyrä, 2005; Schell, 2019; Sutton-Smith & Avedon, 1971). These scholars would view engaging in behavior outside of these limitations as fundamentally non-playful. Thus, when studying playfulness, they often investigate playfulness within those behavioral limitations. Because of the similarity between how these scholars describe a playful mind as needing to accept behavioral limitations and how Caillois defines "ludus" as players constructing and

binding themselves with conventions, I propose a new term for the scholarship of playfulness: *ludic playfulness.*[4]

Ludic playfulness represents a category of scholarship who seek to understand the internal process of play when a player perceives themselves as behaviorally limited. From this perspective, if an individual engages in behavior outside of these limitations, that is not playful. For example, if a player puts down a game and walks away to do something else, that would be labeled a non-playful attitude towards that game. Scientific inquiries that address the experience within a singular behavior of play are *ludic playfulness* theories.

Other scholars seek to study playfulness as an internal state that defies norms and rules. These scholars investigate the internal processes of play when a player experiences a lack of feeling bound. Victor Turner presents this kind of viewpoint when he describes his view as "play is, for me a liminal or liminoid mode, essentially interstitial, betwixt-and-between all standard taxonomic nodes, essentially 'elusive'... as such play cannot be pinned down by formulations of left-hemisphere thinking" (Turner, 1986, p. 31). Whereas *ludic playfulness* describes a playful mind as bound by rules that exist, Turner presents the playful mind as eluding rules. A liminal or liminoid mode presents the playful mind as moving between rules or limitations without the perception of them limiting behavior. Several important scholars of game studies have similarly defined a playful *state of mind* as being open to changing rules or feeling unbound by rules (Kerr & Apter, 1991). Whereas *ludic playfulness* views previous knowledge of rules and limitations as essential, *paidic playfulness* is frequently described as discovering or changing rules during the act of play. This description presents a certain level of

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[4] While the concept of *gamefulness* matches some similar criteria to how I define *ludic playfulness*, I decided not to use the term *gamefulness* because it can variably refer to design goals, systemic features, or experiential characteristics (Landers et al., 2019). In addition, at the heart of the term *gamefulness* or *gameful experiences* is a narrower theoretical construct than I am presenting. Various definitions of gamefulness will discuss goals, challenges, competence including claims such as "a game's challenge is at the heart of its gameplay experience" (Deterding & Deterding, 2015, p. 299). While these claims are frequent in defining gameful experiences, they do not align with many scholars' definitions of the experiences during gameplay. For example, in a personal communication with the author Jesper Juul, he wrote "Some games are enjoyable for not challenging us at all, yet providing other kinds of enjoyment". Other scholars such as Nicole Lazzaro agree with this concept defining one of the foundational appeals of game experience as "easy fun" (Lazzaro, 2009). As this thesis is exclusively addressing the characteristic of bounded behavior it is my claim that *gamefulness* would generally be a subset of *ludic playfulness* theories. It is also my contention that labeling this kind of playfulness as fundamental to game experiences implies that games must always define behaviors, a claim that is not supported by several scholars (Arrasvuori et al., 2011; Flanagan, 2009).

behavioral control by a playful mind to change the actions of a game while playing. Scholars in this category would view engaging in behavior outside of limitations as fundamentally playful. Thus, when studying playfulness, they often investigate playfulness that defies behavioral limitations, or they avoid focus upon any individual behaviors.

Considering the similarity between the "frolicsome and impulsive exuberance" of Caillois' Paidia and the scholars who analyze players as unbound by rules, I define a second term for the scholarship of playfulness: *paidic playfulness. Paidic playfulness* investigates playful minds that see themselves as having a certain freedom from rules or control to change rules. Scientific inquiries that assess the experience of playfulness as actively changing behavioral limitations are *paidic playfulness* theories.

Certain conclusions about playfulness can only be synthesized after understanding the effect of *ludicism* on the study. For example, *flow* theory was developed when Csíkszentmihályi interviewed "a variety of people who have invested a great deal of time and energy in play activities… mountain climbers, explorers, marathon swimmers, chess masters, composers of music, modern dancers, and inveterate gamblers" (Csíkszentmihályi, 1975b, p. 42). He asked them questions about the playful experience during that play activity and in this way his study was *ludic*. Csíkszentmihályi's work does not reveal information about how these individuals may have engaged in any playful behavioral change. This is not because all theorists think playfulness resists change, but rather the methodological construction of his approach would not be sensitive to those moments of behavioral change. In essence he asked about playfulness within a single behavior and his conclusions should be viewed as addressing that question. In this way I explicate the importance of addressing the newly proposed methodological characteristic *ludicism*: *ludic* or *paidic*.

Theoretical direction and *ludicism* exist on a continuum. Certain theoretical methods mix *top-down* and *bottom-up* approaches. Hermeneutic phenomenology is a good example that attempts to directly investigate individuals' lived experience while also having a "rejection of the idea of suspending personal opinions" (Kafle, 2011, p.186) by the scientist. From that perspective, scientists have a theoretical understanding of a *phenomenon* which they then change based upon their investigations and the *data* they

gather. This iterative process of investigation and reconceptualization has both *top-down* and *bottom-up* elements.

Similarly, *ludicism* of playfulness is best understood on a continuum. Apter's view of a playful mind is *paidic* in that he argues playful minds do not feel bound to any individual set of rules. However, within a voluntarily accepted game Apter would identify a player doing repetitive behaviors of that game as more playful. Turner's conception appears to be a much deeper claim that the playful mind resists all categories or limitations. When analyzing that same player, Turner would analyze the repetitive nature of those behaviors as less playful, thus Turner's conception of playfulness would be more *paidic*.

I will use the three contextual tools of *theoretical direction, scope of definition*, and *ludicism*, to define my approach to my first research question:

Q1: How was the definition of playfulness constructed in the different disciplines that study it?

I will now justify *phenomenology* as an interpretive framework to address the common characteristics of theories on playfulness

3.5. Phenomenological Framework: Intention and Perspective

Phenomenology is the study of experience. Phenomenological "theorists have worried about the gap between what it's like to smell a rose, taste burnt sugar, or feel sharp pain and the neural states underlying such experiences" (Bayne and Montague, 2011, p. 34). This "gap" refers to how a mechanistic analysis of a process, such as a picture of electrical activity in the brain, does not provide all of the information of how a person experiences parts of reality, such as smelling a rose.

Phenomenology makes two claims about experience that are important for this thesis. It first claims that everyday experiences are intentional. Intentionality in this case refers to how any experience, whether anger or curiosity, is in regard to something that is not just the experience itself. There is an external entity that the conscious mind frames as

existing and that the experience is about. According to phenomenology, a person is not just angry or curious, but is angry or curious "about" something.

For example, visual experience can be analyzed as intentional. When experiencing a book, "talk of the book, page, words and letters being a part of the visual experience indicates that these are the objects of the experience: that the experience is of or about them" (Cerbone, 2006, online). These pages of a book are external to visual experience, yet visual experience is about them.

The second claim that phenomenology makes about experience is that external objects are mentally defined by a specific context. When looking at a book "you see only one side of the object and from a particular angle" (Cerbone, 2006, online). This angle represents not only a physical angle, it can refer to a mental perspective or a historical perspective. A book only has meaning because of past experiences with books. If one had never seen a book before there would be a different meaning from the same visual information from that book. Through the understanding of language, commonly accepted culture, and other contextual perspectives, the mind creates the intention and then the experience of "the book".

Combining these two claims, phenomenology separates two independent factors to the creation of experience:

1.	Experience is about something (Intention)
2.	Context defines what is perceived (Perspective)

Using phenomenology, playfulness can be viewed as more than the experience of being playful. Instead, the playful mind has an experience that is "about" something (such as "the book"). The playful mind then uses contextual perspective to define what the experience is "about" that is in some way experienced as playful.

When we apply the question of focus and context to playfulness, we create the following two questions.

1.	Are there limits to what playfulness is "about"? (playful intention)
2.	Are there limits to what context defines a playful intention? (playful

perspective)

These two questions describe how I will use *phenomenology* in synthesizing different theories of playfulness answering my second research question:

Q2: How is the internal experience of playfulness defined across disciplines from a phenomenological perspective?

Now equipped with the three contextual analytical tools of *theoretical direction, scope of definition*, and *ludicisim*, and the interpretive framework of *phenomenology*, I will further explore how to apply these in a systematic way.

3.6. Systematic approach to literature

Having addressed the multidisciplinary nature and the phenomenological nature of this literature review, I will now explain its systematic quality.

Systematic literature reviews are a widely used approach to integrate scholarship on a single topic. They are often used to integrate the results of multiple randomized controlled trials in medical research. Meta-analysis integrates quantitative results across multiple scientific trials in order to create a single larger pool of data to help answer a specific question and create more generalizable and robust analyses (Rosenthal & DiMatteo, 2002). Meta-analysis can be understood as "a form of survey research in which research reports, rather than people, are surveyed" (Lipsey & Wilson, 2001, Abstract). The methodological quality of the research conducted is often assessed based upon its reliability, validity, objectivity, and generalizability. However, these standards have been criticized in their application to qualitative research based upon the priority of analyzing phenomena in standard contexts (Popay, Rogers & Williams, 1998).

Systematic literature reviews can also seek to synthesize previous qualitative research and produce valuable results (Petticrew, 2001). This method of integrating qualitative research findings is called a meta-synthesis (Walsh & Downe, 2005). Whereas quantitative studies seek to standardize the context of study and isolate the phenomenon, qualitative research does not seek to standardize context but instead make clear the context of a phenomenon that occurs. Meta-synthesis was first used by Stern

and Harris in 1985 (Paterson et al., 2001) for surveying research reports from the systematic perspective of grounded theory (Stern & Harris, 1985, p. 152). In this way, this systematic method is "hermeneutic, seeking to understand and explain phenomena" (Walsh & Downe, 2005, p. 203), which critically does not "seek to establish objective truth claims" (Walsh & Downe, 2005, p. 204). In essence, due to the quantity of specificity that cannot be covered by an overview of previous works, this systematic literature review should not be viewed as declaring a truth that universally exists in every reviewed piece. Instead, this is a systematic work revealing phenomena within the category of modern scholarship on playfulness. In this way, this work continues the philosophy of meta-synthesis and "respects the multi-layered contexts which can be peeled back to reveal generative processes of phenomena not glimpsed in standalone studies" (Walsh & Downe, 2005, p. 205.)

This approach comes with considerable criticism. There are critiques that "synthesis is reductionist" (Walsh & Downe, 2005, p. 205). There are numerous details about every reviewed work that will not be explored during this literature review, reducing the "desired thickness of particulars" (Sandelowski, Docherty, & Emden, 1997, p. 366). There is also criticism that this will neither be a complete nor random sample. These sampling methods will not create a statistically full representation of previous academic work on playfulness.

In order to verify the scientific quality of my qualitative meta-synthesis I will address five questions proposed by Popay, Rogers & Williams in their 1998 article "Rationale and Standards for the Systematic Review of Qualitative Literature in Health Services Research"[5]. At the core of my approach is treating previous scientific works on playfulness as if they were qualitative sources of information.

3.6.1. Systematic Literature review: Five questions

Popay, Rogers & Williams in 1998 proposed five questions to instruct medical researchers on how to apply qualitative methods in order to create valuable findings; these questions were aimed to address five criteria of importance for qualitative research:

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[5]Qualitative meta-synthesis was created within health services research (Paterson et al., 2001). This is a widely cited article on the method. This is not the only text I cite throughout this section, however I think it is the clearest framework for the presentation of my methods.

1. Evidence of responsiveness to social context

2. Evidence of purposeful sampling

3. Evidence of adequate description

4. Evidence of data quality

5. Evidence of theoretical and conceptual adequacy

In order to further the contribution of my literature review, I will directly answer these questions for my own project with the goal of finding a method that will contribute to modern scholarship.

1.   Evidence of responsiveness to social context

"Is there evidence of the adaption and responsiveness of the research design to the circumstances and issues of real-life social settings met during the course of the study?" (Popay, Rogers & Williams, 1998, p. 346)

The circumstances and real-life social settings of this study included myself and the realistic barriers of synthesizing large quantities of written works. Throughout this thesis there will be footnotes detailing personal struggles I faced in attempting to read certain influential documents. It was common that documents I found relevant for the sample were not available publicly or through my university's library. I would search any database I could; if I did not find a document using these methods, I would directly contact a researcher to request documents. There are still several manuscripts, unpublished yet cited works, or books that I have not read. I address how I reached my conclusions facing these limitations. In addition, throughout this thesis there will be footnotes detailing personal struggles I faced in attempting to replicate cited definitions made by authors. As discussed later, there were eight instances where it appeared the author had made a serious error in misciting or misrepresenting cited work. It is also possible that the authors have effective arguments that I was unable to find or understand. These two topics speak to real-life barriers in conducting meta-synthesis research[6].

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[6] There is high likelihood that there are similar errors throughout this text. I think it is to the benefit of science to address when such errors occur and also understand that they are a natural part of this kind of research.

2.   *Evidence of purposeful sampling*

"Does the sample produce the type of knowledge necessary to understand the structures and processes within which the individuals or situations are located?" (Popay, Rogers & Williams, 1998, p. 346)

In order to address the structures and processes that individual written works are located, I will begin my results section with a description of the sample. In order to systematically collect this contextual data I will employ the following six codes:

Code 1: Academic citation

In my analysis, written work is published by a source, within an academic discipline, and often within an intellectual discourse. The source of publication is important for understanding the context of the theoretical work. In order to further expose the context of creation for analyzed works, I will record whether they were published as a book, an article, or a dissertation/thesis[7]. All of this relevant information is covered by a standard academic APA citation[8].

Code 2: Academic discipline

In order to further the contextual exposure of the reviewed literature I will also record a probable discipline that it was published for[9]. Academic authors work within departments and publish in journals that have distinctive foci of study. While the subject matter they study and the organization of their department are often connected, they are not the same (Biglan, 1973). In order to further the contextual analysis of my work, I will code my interpretation of the discipline within which the article was published, or, if that is not clear, the disciplinary affiliation of the author.

Code 3: Definition citations

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[7]Unlike a meta-analysis which will often use publication type as an element of exclusion, I will not limit my search to peer-reviewed articles with a specific method of analyzing playfulness. I will instead record the type of source and deconstruct whether the source of material appears to affect the analysis.

[8] Code one and two are also commonly recommended pieces of information for a meta-synthesis to collect. (Sandelowski & Barroso, 2002)

[9]There is no universally accepted set of disciplines.

Authors will also define important terms by referencing previous academic work. In order to gain a deeper understanding of how that author is deriving their viewpoint, I will read any cited material that they reference as their definition of playfulness. I will continue to read cited definitions until I read a text that constructed a definition of playfulness. This method is called a snow-balling technique in a literature review and is a previously known measure to increase relevant literature (Kitchenham & Charters, 2007)[10]. To better understand the structures and processes present in the sample, I will not only analyze the theoretical definition of playfulness but also how that theoretical construction was made. I will code the theoretical construction using the three analytical tools described previously.

> *Code 4: Ludicism*
> *Code 5: Scope of Definition*
> *Code 6: Theoretical Direction*

3.   *Evidence of adequate description*

"Is the description provided detailed enough to allow the researcher or reader to interpret the meaning and context of what is being researched?" (Popay, Rogers & Williams, 1998, p. 347)

Due to the breadth of reviewed literature, it will be difficult to provide adequate description for each written work. In order to ameliorate this gap I will first present a methodological analysis of the sample. It is my goal that by directly describing important contexts of research before engaging in the primary *phenomenological* analysis that readers will be better equipped in this regard[11].

4.   *Evidence of data quality*

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[10]In accordance with the theoretical foundations of a meta-synthesis as being within grounded theory, I have chosen not to seek a statistical selection or a complete sample of all academic sources that have defined playfulness. I will instead apply the grounded theory technique of theoretical saturation. In this approach, I will be coding my interpretations of each written work as I read them. Then, I will compare my codes between each written work "until the process yields the interchangeability of indicators, meaning that no new properties or dimensions are emerging from continued coding and comparison." (Bryant & Charmaz, 2007).

[11] This will also satisfy the common recommendation for a meta-synthesis of conducting a meta-method analysis (Paterson et al., 2001).

"How are different sources of knowledge about the same issue compared and contrasted?" (Popay, Rogers & Williams, 1998, p. 347)

In order to compare and contrast different sources of knowledge I will reinterpret their claims through the use of the *phenomenological* tools*: intention* and *perspective*[12]. Furthermore, in order to make a compelling argument I will conduct a thematic analysis based on the five phased cycle proposed by Yin in his 2015 book *Qualitative research from start to finish.* The five phases I will follow are (1) Compiling, (2) Disassembling, (3) Reassembling (and Arraying), (4) Interpreting, and (5) Concluding[13].

1. I will compile a database using Google Spreadsheets that holds my analysis of each written academic work using the codes described above. This first database will be organized by author and will not attempt to identify connections between authors. Rather than field notes, I will use the original written texts as if they were field notes, read their definition of playfulness thoroughly, at least three times, and attempt to gain an understanding of how the author seems to view the concept of playfulness.

2. I will disassemble each written text by selecting relevant quotes that seem to represent the author's perspective on defining playfulness.

3. I will then closely read those quotations in order to identify themes across multiple articles, re-assembling the scientific theories into categories of how authors appear to *phenomenologically* define playfulness.

4. I will interpret this re-assembled data creating the bulk of my results and analysis section.

5. Finally, I will write a conclusion, reflecting upon the greater meaning of my five-phase process and what it means for further academic study.

This five-phase cycle will construct my thematic analysis of the literature reviewed.

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[12] This will also satisfy the common recommendation for a meta-synthesis of conducting a meta-theory analysis reinterpreting findings through a new analytical framework (Paterson et al., 2001).

[13] This will also satisfy the common recommendation for a meta-synthesis of conducting a meta-data analysis of the findings within the sample (Paterson et al., 2001).

Code 7: Thematic interpretation

5.   *Evidence of theoretical and conceptual adequacy*

"How does the research move from a description of the data, through quotations or examples, to an analysis and interpretation of the meaning and significance of it?" (Popay, Rogers & Williams, 1998, p. 348)

After the thematic analysis I will synthesize the results and interpret my view on the meaning and significance of these new findings. After this synthesis, I will provide a discussion on the implications of the work.

By answering these questions, I have constructed seven codes that I will apply to my multidisciplinary, systematic, literature review. In conclusion, I will record:

> *Code 1: Academic citation*
> *Code 2: Academic discipline*
> *Code 3: Definition citations*
> *Code 4: Ludicism*
> *Code 5: Scope of Definition*
> *Code 6: Theoretical direction*
> *Code 7: Thematic interpretation*

3.6.2. Coding strategy

This study uses a five-phase approach to analysis based upon Yin's *Qualitative Research from Start to Finish* and Webster and Watson's (2002) criteria for a systematic literature review. I coded every entry using the following method:

1. I searched within all identified texts for uses of the words play, playful, and playfulness. I closely read the definitions used and the surrounding material that was relevant for understanding the use of the words[14].

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[14] Each document's definition and methodology were read at least three times.

2.If they cited an external definition, I did a close reading of that definitional source's conception of playfulness and coded based upon that source's characteristics.

3. I read every entry closely for how they constructed their definition of playfulness. I identified codes one through six for each document.

4. I selected a representative quote from the document that I thought represented the heart of their viewpoint on playfulness.

5. I analyzed and re-assembled the quotes into thematic categories creating code seven.

3.6.3. Search Strategy

The original source material for literature reviewed was Google Scholar. I searched for documents with "playfulness" in their title published from 2014-2019. In the original search on Google Scholar there were 506 results for this search criteria. I proceeded to read the written works in sequential order using the "sort by relevance" filter.

I analyzed batches of ten new articles at a time: reading, coding, and then reflecting on potential theoretical saturation. After reading 130 items from Google Scholar, I reached theoretical saturation where all new entries were consistently not defining playfulness or defining playfulness within a previously established code.

In order to further validate this approach, I then read the first fifty entries with the same search criteria in Scopus. Five new articles were found, and all of them fit within previous thematic interpretations, validating my view that I had reached theoretical saturation.

3.6.4. Exclusion Criteria

There were four potential ways an article could be excluded in the final analysis. The first manner was if the written work did not explicitly define playfulness or playful. This included books such as *The Playfulness of Gerard Manley Hopkins* which did not define playfulness (Feeney, 2016).

The second exclusion criterion was if the work only used behavioral assessments and did not investigate what playfulness was as an experience during that behavior. This

category included articles such as Siviy's 2016 work, "A brain motivated to play: insights into the neurobiology of playfulness". While the work is interesting, it is of limited use for a theoretical meta-synthesis on the experience of playfulness. Its limitations can be seen when it defines playfulness in the following way "'play' will for the most part be limited to social rough-and-tumble play. With this caveat in mind, the young of many mammalian species engage in some type of social behaviour that can be easily identified as playful." (Siviy, 2016, p. 2).

Siviy makes clear in the above quote that he is not investigating the systematic nature of playful experience. He measures the quantity of rough and tumble play within a laboratory context and within a controlled period of time as a statistical measuring tool of playfulness, defined as a behavioral propensity to play. He does not make any claims about how those rats perceive their own reality during this form of play[15]. Other biologists took a similarly behavioral approach such as Richter et al.'s 2016 analysis of mouse play which states "Based on early studies on play behaviour in mice, two forms of locomotor play were distinguished in the present study: very rapid, horizontally directed jerk-run sequences (jumping, Table 1) and rapid 'bouncing' in a vertical direction." (p. 263).

Their behavioral definition of play appears to come from Wolff (1981) who writes

> It generally is agreed (Beach, 1945; Welker, 1961; Loizos, 1966; Marler & Hamilton, 1966; Ewer, 1968; Eibl-Eibesfeldt, 1975; Bekoff, 1972; Fagen, 1974) that playful behaviour has certain common characteristics: (1) its movements are generally exaggerated, (2) it occurs in relatively enriched areas of the environment, (3) it is absent under stressful conditions and (4) it occurs predominantly in juvenile animals. (Wolff, 1981, p. 406)

As can be seen, the criteria are not designed to capture an internal reality of playing; they are designed for behavioral observation and classification of play behavior, no

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[15] This was not true of all articles on animal playfulness. One article defined play in marine animals as "an activity that at first glance seems to have no purpose but enjoyment" (Würsig, 2018, P. 741). While this is not a very extensive definition of how reality is perceived, the words "no purpose" and "enjoyment" were considered to be relevant enough claims about the animals' internal experience that this article was included for deeper analysis.

matter what the internal experience of play may be[16]. In this way, I argue that these behavioral analyses of play fall outside the scope of this thesis.

The third exclusion criterion was if playfulness was a self-assessment or expert assessment using only the word playfulness, playful, or play. This included such work as Bateson & Nettle's 2014 article "Playfulness, ideas, and creativity: A survey". In this article, individuals in an online survey were asked to self-assess whether they felt the statement "Acting playfully" was very characteristic for them or not. While there is literature supporting adults' capacity to self-assess playfulness with no other definition (for ex. Proyer, 2012) it was not considered theoretically fruitful to analyze deeper.

The fourth exclusion criterion was if playfulness was defined exclusively as an environment that used games without further definition of the experience of those games. This categorization includes the article "Teachers' engagement and students' satisfaction with a playful learning environment." which conceptualized playfulness with "playful learning environments, wherein curriculum-based learning is enriched with play, games and technological affordances" (Kangas et al., 2017 p. 275). Since it did not investigate the experience of those games, it was not considered theoretically fruitful to analyze deeper.

I decided not to limit my search to a specific kind of written material; books, academic articles, conference papers, chapters of books, dissertations, and theses were all considered relevant. Some analyzed written materials, such as certain books or conference papers, have not been peer reviewed. Written works span from five pages long to several hundred pages long. Certain texts are dedicated to defining playfulness, while others address it quickly, defining it once, without argumentation, in parentheses. This heterogeneity among source materials makes most statistical analyses of this data set problematic.

The reason for this broad inclusion criteria is that the goal of this thesis is to analyze how modern scholars define the term playfulness as an experience and how that

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[16] The claim that play is "absent under stressful conditions" is a claim about internal experience. Similarly, "an enriched environment" could be a probable experiential claim about an environment; however, the excluded authors did not address experiential stress or enrichment in their work. The biology scholars who did argue specific characteristics of the perceived reality of animals in enriched environments were included in deeper analysis (such as Pons, Jaen, & Catala, 2015).

definition was constructed. Whether it is a conference paper that discusses promoting playfulness and fun in workplaces by stitching photos together (Lu et al., 2016) or a re-printing of a classic multi-year ethnography project on the playfulness of preschoolers and adolescents (Lieberman, 2014), both embody a reality of modern scholarship. Unlike quantitative studies that require a contextually limited phenomenal source, a qualitative meta-synthesis is a method that can attempt to address such wide spanning contexts of study. Considering how modern scholars publish all of these forms of work, it seems critical to me to analyze them in context with each other. Thus, in my opinion, all types of research and all types of publication should be included in a systematic literature review on this subject.

3.6.5. Limitations

There are many potential limitations to this approach to a literature review. Important conceptions of the internal experience of play will use a diversity of language including "play" or "game" and if they never use the word "playfulness" they would be left out of this sample. In addition, this study only analyzed texts written or translated into english. The sample reviewed also focused upon written works with playfulness in the title from the last five years or having a direct citation from a written work with that criteria. There are probably numerous conceptions of playfulness that did not use the term in the title but did use it in the abstract or body text. In addition, there are probably numerous conceptions of playfulness that have not been cited within the last five years, that will be used in the future. While it is likely multiple relevant works were not included in this literature review, the goal of this review was to focus on articles that researched playfulness directly from the last five years. This primary goal of getting an understanding of the academic culture surrounding "playfulness" as a scientific *phenomenon* I think was sufficiently addressed with this method.

4 RESULTS

During the course of this study, 130 written works from the last five years were read and analyzed for the definition of playfulness and methods used to construct that definition. An additional 34 older written works were read due to being cited directly by one of the modern inclusions. Each written entry in the sample was read at least three times for its conceptualization of playfulness. Sixty-five conceptions of playfulness were found in the sample. Articles were originally arrayed in a spreadsheet based upon when they were read. All items were coded for the following information:

> *Code 1: Academic citation*
> *Code 2: Academic discipline*
> *Code 3: Definition citations*
> *Code 4: Ludicism*
> *Code 5: State/Trait*
> *Code 6: Top-down or bottom-up*

Every written work had at least one representative quote selected and included in the arrayed spreadsheet. Quotations were then analyzed separately and placed into thematic categories of interpretation. This created the final code:

> *Code 7: Thematic interpretation*

Using this process, I offer three contributions to modern academic discourses created by the qualitative meta-synthesis:

1. A definitional problem in the term "spontaneity"
2. Methodologies of playfulness
   a. Overview of nine influential methodologies of defining playfulness
      i. Videos of playful play
      ii. Psycho-linguistic analyses
      iii. Lexical analyses
      iv. Focus groups
      v. Interviews

      vi.   Statistical analyses of self-assessments

      vii.   Observations of play

      viii.   Literature reviews

      ix.   Theoretical arguments

  b. Two newly identified scopes for defining playfulness beyond *state of mind* or *personality trait*:

      i.   Playfulness as a characteristic for an *context of interaction*

      ii.   Playfulness as a characteristic of an *artifact organized playfully*

  c. Two independent clusters of scholarship on playfulness

3. A thematic analysis of playfulness across disciplines

  a. Playfulness is an engagement with a single framework of meaning.

  b. Playfulness is an openness to new/a change in engaging frameworks of meaning.

  c. Playfulness is changing a framework of meaning in order to be engaged.

  d. Playfulness prioritizes engagement over external consequences.

  e. Playfulness prioritizes engagement over realness.

  f. Playfulness prioritizes engagement over relevance.

I will conclude with my argument for a new definition of playfulness as:

Playfulness is an organization of experience that prioritizes engagement over realness, relevance and consequence. Engagement is further defined as coming from attentional fullness, emotional reinforcement, recognizing and manipulating patterns, and sharing perspective.

4.1. Descriptive Characteristics

4.1.1. Code 1: Academic Citation

One hundred and sixty-four written works were originally included in the sample. These works cover several different types of academic literature. One hundred thirty-two articles, 15 books, 10 chapters of books, five PhD dissertations, one master's thesis, and one bachelor's thesis were included in the final analysis. Of these works, 15 articles, one chapter of a book, and one book were eventually excluded from deeper analysis due

to matching one of the previously discussed exclusion criteria. Overall, 147 works were closely analyzed for the thematic analysis.

4.1.2. Code 2: Academic Discipline

These written works cover a wide range of disciplines. Twenty-one disciplines and one multidisciplinary article were identified[17]. The largest disciplines of study were psychology (28 publications), education (18 publications) and therapy (including Occupational, Trauma Systems, and Psychotherapy: 16 publications)[18]. For the full list of academic disciplines identified in this study, see figure 1. The determination of these disciplines was done by the author's perspective and should not be viewed as a validated claim. For a full list of articles by discipline, see Appendix A.

Figure 1. Disciplines of Study
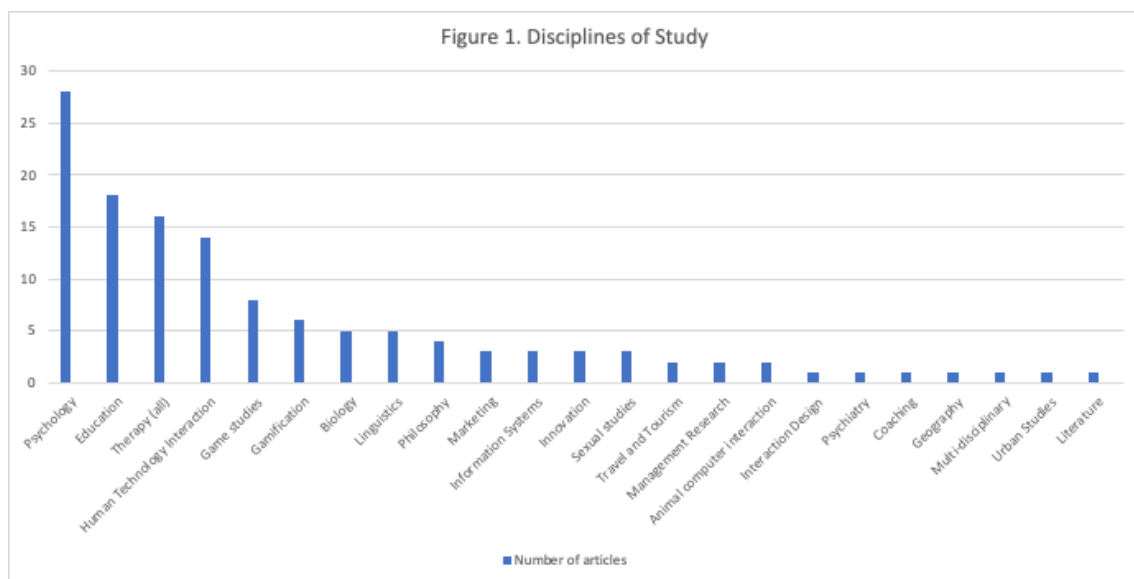
4.1.3. Code 3: Definition Citation

Within the 147 written works analyzed, there were 65 distinct conceptions of playfulness identified. Twenty-six of those 65 conceptions were constructed within the last five years and were never cited after their construction. Nineteen definitions were constructed more than five years ago and cited once within the sample. There were 20

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[17]Defining the exact boundaries of disciplines was problematic. I tried to find a reasonable source for a list of disciplines. I read background material like Biglan (1973). I was unable to find a reasonable list or paradigm of disciplines for this data set. In order to create this disciplinary list I first used any discipline name used explicitly in the article's title, abstract, or body text such as Berger et al.'s (2018) "Play and playfulness in psychiatry: a selective review". If the text of the article did not define the discipline I would investigate the journal it was published in, if it was a journal article. If I was unable to find a clear discipline from a publication source, I researched the author and their past employment for a probable field of study.

[18] Because of the qualitative approach taken for this sample I stopped selecting entries once it hit theoretical saturation and therefore this should not be viewed as a representative sample of disciplines.

definitions that were used by multiple sources within the last five years (See appendix B and C for the full list of theories of playfulness).[19]

The most commonly cited theories were Bundy's *Test of Playfulness* (see Skard & Bundy, 2008) which was cited 11 times, Barnett's (2007) conception of playfulness (10 citations), the modified theories that cited Moon and Kim's (2001) theory on *perceived playfulness* (eight citations), and Proyer's (2017b) conception (eight citations). For a list of the theories with more than one reference within the literature review, see figure 2.

Figure 2. Conceptions of Playfulness Cited More than Once
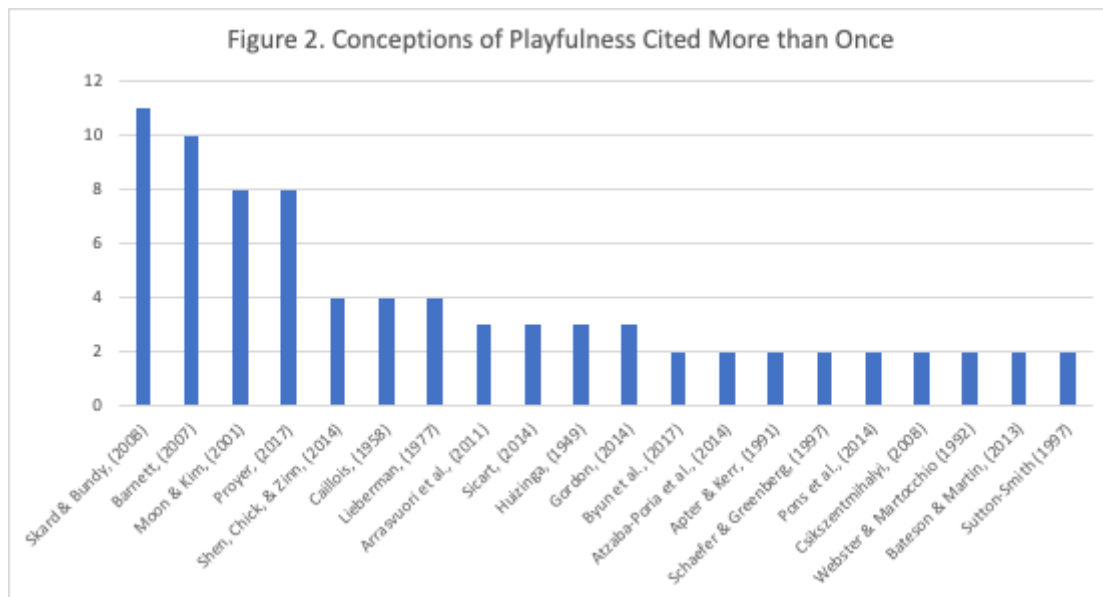
While it is valuable to briefly describe the sample through such quantitative measures, further quantitative description will quickly become biased without equal contextual description. To make this point I will provide an illustrative example of one way these written works are contextually different from each other: citation use[20].

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[19] There were several problems with citations and accuracy within the written works analyzed. There were eight identified problems where I was unable to duplicate the authors' statement about their definition and where it came from. Articles would sometimes list characteristics and cite an external theorist who in no apparent way supported those characteristics as a definition of playfulness (Li & Chang, 2016; Li, Theng, & Foo, 2016; Regalado, 2015; Tomitsch et al., 2014). None of the above articles used direct quotes or provided clear enough argumentation for me to follow how they derived the definition stated from the citation used. Vaisman (2014, p. 70) cites Danet (2001) for a concept that I can not find in that text but was stated by Sutton-Smith (1997, p.150). Ejsing-Duun & Karoff (2015) cite Karoff (2013) with a much more specific claim than I can find in the cited text. Luo, Zhou, & Zhang (2016) used a fifty word quote from Chang (2013) without putting it into quotations. Bateson (2015) appears to use a word for word definition of playfulness used in earlier work (Bateson, Bateson, & Martin, 2013) without quoting or citing it. Such errors make it difficult to know how definitions were created.

[20] Using citations as a numerical basis of comparing articles is a common and also criticized way of investigating bibliometric information (Radicchi & Castellano, 2013). As this is a qualitative study, these bibliometrics should not be viewed as statistically representative of all scientific publications.

4.1.4. Problems with Numerical Descriptions

The oldest written work within these citations is *Homo Ludens* by Huizinga, a book originally written in 1938, and translated and published into English in 1949 (see Huizinga (2002) for a reprint). It is an entirely theoretical text that has inspired multiple conceptions on play especially surrounding the idea of "free engagement" and play being "bounded" by a "magic circle" of play. This book is predominantly about play and culture; however, it has had influence on modern definitions of playfulness. *Homo Ludens* was cited as the definition of playfulness within the fields of human-technology interaction twice (Cermak-Sassenrath, 2015; Tomitsch et al., 2014), and once for research on business creativity and innovation (Nisula et al., 2014). It is also a conception that is frequently mixed with other definitions. It was mixed with *flow theory* in human-technology interaction (Mathwick, Malhotra & Rigdon, 2001) and mixed with references to other game studies scholars in gamification literature (Fizek, 2014). In addition, this work is discussed many times as a piece of background literature.

In contrast, the newest work to be cited multiple times is Proyer's 2017 "A new structural model for the study of adult playfulness: Assessment and exploration of an understudied individual differences variable", which created a quantitative test: the *OLIW.* This work was a refinement of multiple other studies conducted in order to create a *bottom-up* theory of playfulness as a *personality trait*. This article integrates many other studies including those that defined playfulness through "psychometric approaches, factor-analytically derived models, qualitative analyses, etc." (Proyer, 2017, p. 7). The works that cited this article in the sample are all written by Proyer himself, along with co-authors. In essence, within the last two years he himself published seven articles, included in the sample, that cited this definition of playfulness.

This difference between these types of citations within the last five years speaks to why a quantitative analysis of this literature corpus would likely provide biased results. *Homo Ludens* is almost eighty years old and has been cited more than 20,000 times in total according to Google Scholar. The *OLIW* (Proyer, 2017) was constructed within the last five years and as of March 2020 has been cited 37 times in total according to

Google Scholar[21]. It would be difficult to justify any simplistic numerical comparison between the two.

Homo Ludens is also frequently cited and heavily adapted, an action that appears to be common within the field of game studies, gamification, and human-technology interaction. While it is interesting to state which definitions are used multiple times within the last five years, often the quantity and meaning of citations are not just driven by their age but also by the field they were published in.

When an article in psychology cites Proyer's 2017 work it most frequently uses the *OLIW* quantitative test. It appears that they use the test fully and directly, unless it is a clear adaptation, such as the development of the *OLIW-S* (Proyer, Brauer & Wolf, 2019). In psychology, when a quantitative test is adapted, the article that adapted the test becomes the new citation. For example, Barnett's 1991 article "The playful child: Measurement of a disposition to play" references and builds upon the *Children's Playfulness Scale* (CPS)*. The CPS is a seperate quantitative tool designed to reframe Lieberman's (see 2014 for a reprint) playfulness theory from the 1960s. The CPS aimed to "improve upon this [Lieberman's] instrument and still preserve the five component dimensions and the general playfulness factor" (Barnett 1991, p. 55). When a later article references or uses the CPS, they cite Barnett, not Lieberman (For ex. see Rentzou, 2014).

Citations appear to work differently in the field of digital applications. *Perceived Playfulness* is an influential quantitative test constructed by Moon and Kim in 2001. There were eight analyzed articles that directly cited this paper and it seems common practice to cite Moon & Kim directly and adapt their test[22]. Articles would change the contents of the questions asked (Hung, Tsai, & Chou, 2016; Moridis et al. 2018), the number of questions asked per factor (Cheong & Park, 2005; Hung, Tsai, & Chou, 2016), and the factors they represented in the construct (Hung, Tsai, & Chou, 2016; Kuo et al. 2016; Lin, & Li, 2014; Moridis et al. 2018). There were articles that cited Moon and Kim for their quantitative test that did not use any of the original questions created by Moon and Kim (Kuo et al. 2016). In this way, we can see how many

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[21] Only seven of these thirty-seven citations are included in the current research sample.
[22] Hsieh and Tseng in 2017 instead cited Cheong and Park (2005) which is an adaptation of Moon and Kim.

potential problems exist in trying to compare numerical values between these scholarly works without proper awareness of context.

4.2. Multidisciplinary Definitional Problem for the Word "Spontaneity"

Before beginning the methodological analysis of the sample, there is an important discussion on the use of the word "spontaneity" that will benefit the later analysis.

Many scholars have defined playfulness using the word "spontaneity" (Barnett, 1990; Bateson, 2015; Bateson, Bateson, & Martin, 2013; Guitard, Ferland, & Dutil, 2005; Lieberman, 2014; Lockwood & O'Connor, 2017; Rodríguez-Ardura & Meseguer-Artola, 2018; Shen, Chick, & Zinn, 2014a; Warmelink, 2014; Webster & Martocchio, 1992). When scholars use this word it usually refers to one of two separate concepts: *re-ordered information or non-considerate engagement*. Scholars will use the term "spontaneity" without acknowledging which of the two concepts they are referring to. No previous academic work appears to have criticized these authors for this problematic use of language. In order to further academic discourse I analyze these two distinct interpretations of spontaneity that are present in modern literature.

4.2.1. Re-ordered Information

Nina J. Lieberman wrote one of the foundational texts on playfulness in psychology. *Playfulness, its relationship to imagination and creativity* from 1977 (see 2014 for a reprint) build upon Lieberman's studies conducted in the 1960s. She appears to be the first researcher in psychology to theorize playfulness as a *personality trait* in adults. Lieberman's work was used to inspire the *Children's Playfulness Scale* by Barnett (1990) and Webster and Martocchio's *Computer Playfulness Scale.* Lieberman conducted an ethnography of preschoolers, which will be explained in greater detail later in this thesis, and defined playfulness as having three core criteria: Sense of humor, manifest joy and spontaneity. Lieberman defines spontaneity as a re-ordering of known information. To explain, Lieberman wrote "Spontaneity, if we want to draw a comparison, operates like the whirl of the kaleidoscope. The bits and pieces of glass are the givens or familiar facts. The twist of the hand produces ever-different pictures with the same components." (Lieberman 1977, P. 83). This conception is tied to an academic interest in how playfulness and creativity are connected. It is common in modern

literature to discuss this form of spontaneity while discussing inventiveness or creativity.

For example, Webster and Martocchio, in their influential "Microcomputer playfulness: Development of a measure with workplace implications", an article with over fourteen hundred citations, define playfulness in their research as "Therefore cognitive spontaneity is a type of intellectual playfulness: those higher in microcomputer playfulness tend to be more spontaneous, inventive, and imaginative in their microcomputer interactions (Webster & Martocchio 1992, P. 204)[23]. This definition of spontaneity is historically linked to Lieberman's conception. Webster and Martocchio derive their definition of playfulness as spontaneous, inventive, and imaginative based upon the following argument "similarly, Barnett (1990) describes cognitive spontaneity in children as: "the imaginative quality of child's play -- the degree to which the child might assume different character roles, invent unique games, or use unconventional objects in his or her play" (Barnett 1990, P. 54)" (Webster & Martocchio 1992, P. 204).[24] Barnett (1990) and Barnett (1991) are two critical works for the development of the *Children's Playfulness Scale*, a quantitative test where "All of the items followed from the definitions originally posed by Lieberman" (Barnett, 1991, p. 55). In this way we can see the historical link between microcomputer playfulness as defined by Webster and Martocchio and Lieberman's definition of spontaneity.

This definition of spontaneity is important for more recent definitions as well. For example, Rodríguez-Ardura & Meseguer-Artola in 2018 cited Byun et al. who defined playful consumers as exhibiting "cognitive spontaneity that includes curiosity, inventiveness and a tendency to play with ideas (Glynn and Webster, 1993)." (Byun et al., 2017, p. 228). In this quotation we can see a historical link back to Lieberman by following Glynn and Webster's conception of spontaneity when they wrote "Cognitive spontaneity is a construct derived from observations of children's play (Lieberman, 1977)" (Glyn & Webster, 1992, P. 86). Importantly, this conception of spontaneity in playfulness focuses upon known information being thought of in a new way. Lieberman

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[23] In essence they have described the construct of intellectual playfulness as the same as cognitive spontaneity. Then in defining that cognitive spontaneity they use spontaneous as one of three sub-components. This appears to be a tautology.

[24] This quote is a mis-citation. This quotation used by Webster and Martocchio is not from Barnett's 1990 work *Playfulness: Definition, Design, and Measurement* as cited, but rather Barnett's 1991 work *The playful child: Measurement of a disposition to play.*

specifically excluded exploration or new situations from this definition writing "I would hold that spontaneity, like play, occurs in familiar surroundings. Flexibility, like exploration, operates in applying oneself to a new situation." (Lieberman, 2014, p. 82).

This definition has been highly influential and has created one of the two conceptions of spontaneity common in playfulness literature:

Spontaneity is a re-ordering of known information.

4.2.2. Non-considerate engagement

Another application of the word spontaneity refers to an individual's lack of premeditation. Shen, Chick, & Zinn in their 2014(a) construction of the *Adult Playfulness Trait Scale* use this conception when they define "spontaneity, a mental propensity to respond promptly without deep thought or premeditation" (Shen, Chick, & Zinn, 2014a, P. 68). Other scholars also focus their use of spontaneity upon a speed of engagement, for example Guitard, Ferland, & Dutil wrote "Participants associate spontaneity with a spontaneous action or reaction on the spur of the moment." (2005, P. 18). Barnett's later Playfulness Scale for Young Adults (PSYA) similarly uses spontaneity as a specific characteristic within the greater factor of Uninhibited (Barnett, 2007, P. 953). These imply that previous doubts or inhibitions are less influential on spontaneous behavior.

In addition to uninhibitedness, or a lack of negative consideration, spontaneity also frequently refers to a lack of positive consideration, or planning. In common usages of spontaneous and spontaneity, it often implies quickly joining situations. For example, Ríos-Rincón et al. define free play as "characterized by children's spontaneous engagement in an activity" (2016, p. 2). Spontaneous engagement in this quote does not seem to imply a patterned behavior outside of context but rather a sudden engagement that was unplanned. Similarly, spontaneity has been connected to activities that are defined by little planning such as improvisation (Lockwood & O'Connor, 2017, p. 7).

An important difference between this definition of spontaneity and the previous one is that it does not have to require known information. In the above quote by Ríos-Rincón et al., there is not an implication that the activity is a known activity.

In this way we can see an alternative influential definition of spontaneity:

Spontaneity is an engagement with a relative lack of consideration and thus is non-considerate[25] engagement

4.2.3. Discussion

By clarifying these two definitions of spontaneity we can more accurately discuss playfulness and the constituent components that are used to define it. For example, quotations such as

> Different forms of spontaneity have been described as incremental parts of playfulness in the literature (see e.g., Barnett, 1990, 1991a,1991b; Lieberman, 1977). One might argue that, in some cases, spontaneous cognitive productions may be perceived as impulsive by outside observers and that this forms the lay perception of the playful adult as being impulsive. (Proyer, 2014, p. 730)

can be more clearly communicated by differentiating whether the author is discussing *re-ordered information*, or whether they are discussing *non-considerate engagement.* The citations Proyer uses are all authors who use the re-ordered information version of spontaneity. However, his own conception of impulsiveness as a factor is defined with the following content items: "impulsive, vivacious, demanding, defiant, aggressive, talking a lot" (Proyer 2014, P. 725). These content items do not seem to imply any type of distinctive pattern that is being re-ordered. They do seem to imply ways individuals may engage if they are not considering their method of engagement, implying it is defining spontaneity as *non-considerate engagement*.

In other examples where the author does not more fully contextualize their viewpoints, we can see an even greater need for clarification of these words. In Bateson's 2015 article "Playfulness and Creativity" it describes "Playful play (as distinct from the broader category of play defined by psychologists and biologists) is accompanied by a particular positive mood state in which the individual is more inclined to behave (and,

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[25] Rather than use the more common term inconsiderate, I have decided to opt for the new term non-considerate. The reason for this is that inconsiderate behavior often implies that a person should be considering their actions further. In the contexts where spontaneity is applied as non-considerate behavior there is not a negative implication and often non-considerate behavior is presented as a positive form of engagement. Therefore, I decided it was clearer to construct a new term.

in the case of humans, think) in a spontaneous and flexible way." (p. 15). There is no indication as to whether he is referring to *re-ordered information* or *non-considerate engagement* or both.

In this way, I think it is critical for modern research on playfulness to further define the intention when using the ambiguous term *spontaneity*.

4.3. Methodologies of playfulness: Codes 4-6

In order to present a strong context for my thematic analysis, I will now provide an overview of important methodologies that were identified in defining playfulness. I will analyze these methodologies in categories based upon their *ludicism*, *scope of definition,* and *theoretical direction*. If a written work cited an older definition, the cited article was read and used as the basis of this analysis. This section will be organized by presenting influential theories in their methodological context and then giving brief discussions of how this example case does or does not fully represent a larger category of methods to define playfulness. In this way I address my first research question:

Q1: How was the definition of playfulness constructed in the different disciplines that study it?

Answer 1: The sample presented nine categories of methods used.

1. Videos of playful play (Test of Playfulness),
2. Psycho-linguistic analyses (OLIW)
3. Lexical analyses
4. Focus groups (PSYA)
5. Interviews (flow)
6. Statistical analysis of self-assessments (perceived playfulness)
7. Observations of play (Lieberman's spontaneity)
8. Literature reviews
9. Theoretical arguments

4.3.1. Videos of playful play (The Test of Playfulness)

This methodology of defining playfulness is typified by analyzing individual play acts and identifying playfulness within those acts.

The Test of Playfulness is frequently used in Occupational therapy. Play has been described in occupational therapy literature as the "primary occupation of children", it has been used to evaluate children's development and skills and is considered important for the development of adaptability (Bundy et al., 2001). Despite this commonly held interest in play, Anita Bundy in the late 1980s argued in her doctoral dissertation that occupational therapy was hindered by a lack of commonly held definition (Bundy, 1987)[26]. In order to remedy this theoretical gap, she constructed the highly influential *Test of Playfulness* which is "designed for measuring the play of individuals between the ages of 6 months and 18 years" (Snow, 2013). While the mostly commonly used version of the *Test of Playfulness* is the fourth version constructed in 2008 (Skard & Bundy, 2008), I am going to instead focus upon the original construction of the *Test of Playfulness* from 2001. The test did not substantially change its theoretical construction and the earlier piece provides a clearer explanation of the theoretical definition.

The *Test of Playfulness* defines playfulness as "the disposition to play" (Bundy et al., 2001, p. 277). It further separated this disposition into four elements: *Intrinsic Motivation*, *Internal Locus of Control*, *Suspension of Reality*, and *Framing*. As these tests focus upon a quality of specific play acts that can be recorded (such as "playful play") rather than tracking an individual across multiple contexts I define the *Test of Playfulness* as a *state of mind* definition[27].

In order to construct the *Test of Playfulness* Bundy originally constructed the four theoretical components of playfulness using literature on playfulness and play. The test was then developed by analyzing the play of 77 children via video tape. Raters were

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[26] While this source is cited several times, it was not a document I was able to find. I searched Google Scholar, Scopus, Boston University's collection of PhD dissertations, where it was originally published, and emailed Dr. Anita Bundy directly. As a result, much of my analysis comes from analyzing the content items of the *Test of Playfulness*. There is a potential danger that I am mischaracterizing the work as a result of this lack of contextual information.

[27] The Test of Playfulness has been compared with personality trait definitions of playfulness as if the TOP was a personality trait definition (Bundy et al., 2001). The assumption, it seems, is that playfulness in a specific context is correlated with more general personality trait playfulness. I would argue that this test is used in a way that is very close to a personality trait scope, but was still designed to assess the contextual state of propensity to playfully play at the time of assessment.

given the theoretical constructs first and they then analyzed children's behavior and attempted to find examples of these theoretical components in the behavior of the children (Bundy et al., 2001). As this theory was constructed from literature first and then applied to examples of play, I view the *Test of Playfulness* as a *top-down* theory.

The video tapes of child play that were used to construct the *Test of Playfulness* are not very explicitly described. The article writes that the videos included indoor and outdoor play, but there is no mention of what types of activity were present. However, the four components of playfulness defined within the test, and the content of the test itself, do provide some insight on the *ludicism* of the *Test of Playfulness*.

Internal Locus of Control is defined by nine test components, three of which are: "Appears self-directed: Decides what to do and how to do it", "Negotiates with others to have needs/desires met.", and "Actively modifies complexity/demands of activity.". These three components describe playful activity as being affected by rules and expectations. Specifically, a playful activity being "demanding" upon its player is a *ludic playfulness* perspective. The test also defines playful minds as feeling that they can change those limitations. This playful mind seems bound by rules, and also fairly unbounded in their capacity to change those rules. As the Test of Playfulness analyzes those who change behavior as potentially playful, I view this as a slightly *paidic playfulness* theory.

This method of constructing a theoretical framework of playfulness in play and doing a *top-down* analysis of videotapes of play behavior is also how the *Parental Playfulness Scale*[28] is used (Cabrera et al., 2017; Menashe-Grinberg & Atzaba-Poria, 2017). The *Parental Playfulness Scale* also defines playfulness as a *state of mind*. In defining playfulness it uses a scale where the least playful category is defined as "Mainly labeling (e.g., "That is a car.") and commands (e.g., "Do that.")" the most playful category includes "(pretending, imaginary use of the toy in an unconventional way)" (Cabrera et al., 2017, p. 14). The presence of unconventionality in the higher playfulness end of the scale seems to present playfulness as a multitude of changing behaviors and thus this theory is also viewed as a *paidic playfulness* theory.

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[28] The original construction of this scale is within an unpublished manuscript. I emailed the authors involved, but was unable to attain a copy of the construction of this scale.

Other scholars used the method of analyzing videos of play such as Møller's experimental investigation of toy use and imagination in a Danish kindergarten. The experimental quality seemed to represent the contextual sensitivity of a *state of mind* orientation. This work analyzed "children's display of creative imagination between the two different types of toys." (Møller, 2015, p. 331) which would at first appear to be a *ludic* analysis. However, in the actual analysis, Møller does not exclude behaviors that do not use the specific toys and allowed children to "bring their own toys if they wished." (Møller, 2015, p. 331). Therefore, I define this also as a *paidic* methodology. Møller's experiment heavily used Vygotsky's (1967;1990) and Wartofsky's (1979) views on perception, imagination, and play. However, the final analysis focuses more upon transgression in play acts, a concept that appears to be predominantly thought of by Møller. I therefore defined it as a *mixed theoretical direction*.

In summation, the *Test of Playfulness and videos of playful play* was generally typified by:

1. State of mind orientation

2. Paidic relationship to behavior

3. Mixed (top-down and mixed) methodology

4.3.2. Psycholinguistics: Analyzing the Contextual Meaning of "Playfulness" in Written Language (OLIW)

This methodology of defining playfulness is typified by analyzing a corpus of words for associations between playfulness and other semantic concepts.

The *OLIW* was constructed by several methods, one of which was a psycholinguistic corpus analysis of German phrases that included the term playfulness (or "verspielt[heit]" or "spielerisch") within "complete issues of newspapers, magazines, and releases from press agencies, literary works, scientific works, official documents, historic writings, speeches by politicians, and other written sources" (Proyer, 2012). Proyer then removed statements that did not refer to playful people, but rather playful events or playful animals. As Proyer removed entries that were not about playful

people, I define this as a *personality trait* orientation. This method is also analyzed as a moderately *bottom-up* methodology[29].

The OLIW presents rules as potentially present in the act of starting a playful experience but emphasizes that a playful person should not take those rules too seriously. When Proyer describes whimsical playfulness, he defines it as "*Whimsical* PF [playfulness], which may be associated with the (playfully intended) breaking of rules, or overstepping boundaries" (Proyer, 2017). This frames the playful person as openly resisting norms of behavior, this puts Proyer's OLIW as a *paidic playfulness* theory.

Other researchers also conducted psycholinguistic analyses with similar methodological characteristics. Gordienko-Mytrofanova and Sauta (2016) analyzed play and playfulness using this method for Russian speakers in Ukraine. They notably had a more *bottom-up* approach including "a free-association test with this stimulus word [playfulness], and a sample consisting of 3,908 adults" (p. 46). Their conclusion was also a "strategy (game-playing strategy) of personal behavior". Since this frames their definition as an individual being playful or not, that is a *personality trait* orientation. The nature of these strategies also was not behaviorally limited, instead focusing on "'interpreting' everyday issues as some sort of game" (Gordienko-Mytrofanova & Sauta, 2016, p.47). This focus upon interpretive skills was defined as a *paidic playfulness* theory

In summation, *psycholinguistic analyses* were generally typified by:
1. Personality trait orientation
2. Paidic relationship to behavior
3. Bottom-up methodology

4.3.3. Lexical analysis: Analyzing language for patterns defined as playfulness

Lexical studies also studied a corpus of written texts; however, the analysis would focus upon how those words were playfully organized.

Some entries engaged in a *bottom-up* analysis such as Danet (2001) who conducted five case studies on playfulness in digital communication mediums, where words and

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[29] The decision to remove entries that did not refer to playful people appears to be a *top-down* decision.

images were analyzed for ways that they were structured in playful manners. Guo (2018) conducted a similarly *bottom-up* linguistic analysis of playful use of language from a sample of Chinese internet users from 2003 to 2015.

Certain entries in this methodological category used a *top-down* analysis approach. Xu and Deterding (2017) used theories constructed by Crystal (1997) in order to analyze playful mixtures of Chinese and English in digital communications. Pharies (2015) similarly took a *top-down* approach in analyzing playfulness in the lexicon of Spanish.

These methods all analyzed playful language. All assessed individuals were engaged in the specific act of writing within a certain context that bounded their options. Some articles discussed multiple modes of communication in these platforms (Danet, 2001). Overall, this category had clear behavioral restrictions for playful behavior analyzed[30], thus I define this as a *ludic playfulness* perspective.

This lexical methodology did not fit the binary of *state of mind* vs. *personality trait* scope. Entries in this category looked at written texts and analyzed whether those texts were evidence of a playful interaction that occurred in the past. While the playful *state of mind* was critical to the construction of these words, the words formed during that playful interaction had a resulting set of characteristics that were analyzed as playful or not. Thus, in this way a new *scope* of definition was revealed in this data set: Playfulness as a set of characteristics for an artifact.

In summation, *lexical analyses* were generally typified by:
1. *Artifact* orientation
2. *Ludic* relationship to behavior
3. *Mixed (top-down and bottom-up)* methodology

4.3.4. Focus groups on playful personalities (PSYA)

This methodology of defining playfulness is typified by asking focus groups what defines a playful personality for an adult.

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[30] For example, if a person stopped engaging in the behavior of writing and playfully started to play a physical game outside, these tests would not capture that form of playfulness.

The *Playfulness Scale for Young Adults* (PSYA) (Barnett, 2007) and the Playfulness scale for Adults (PSA) (Schaefer & Greenberg, 1997) are influential scales defining playfulness as an adult *personality trait*.

The PSYA and the PSA were developed using similar methods, where adults were asked to describe traits and associations that they felt defined playful people. These studies used focus groups to elicit adult responses and emphasize differences between people's conception of playfulness. (Barnett, 2007; Schaefer & Greenberg, 1997). Each of these studies then took the focus groups' proposed descriptors of playful people and used those answers to construct their theoretical scales of playfulness. As these studies approached individuals' conceptions first and derived scientific theory out of that data, the *Playfulness Scale for Young Adults* and the *Playfulness Scale for Adults* are both considered to be *bottom-up* theories.

These scales show a similar tendency towards *paidic playfulness* with minor differences. While none of the scales in this category explicitly say a playful person should never follow behavioral rules, each of them has components of their scale that emphasize playful people are typified by quickly altering behavior during play. The *Playfulness Scale for Young Adults* has "uninhibited" as one of its four factors defining playfulness (Barnett, 2007 p. 953). It then describes "uninhibited" as represented by four words: spontaneous, impulsive, unpredictable, and adventurous. This uninhibited factor seems to define playful as non-considerate engagement with an openness to behavioral changes, and thus fits into the *paidic playfulness* category.

In summation, *Focus Groups* were generally typified by:
1. *Personality trait* orientation
2. *Paidic* relationship to behavior
3. *Bottom-up* methodology

4.3.5. Interviews about play behavior (flow theory)

 Mihaly Csíkszentmihályi's *flow Theory* was originally developed in the 1970s and has a distinct methodology.

Since its development, it has been highly influential on theories of playfulness and games. *Flow* is the theoretical basis for *perceived playfulness* (Moon & Kim, 2001). It

has also been applied to the study of video games directly (Jin, 2012; Webster, Trevino, & Ryan, 1993). Csíkszentmihályi originally developed *flow* theory in part to investigate the question of "why play is enjoyable" (Csíkszentmihályi, 1975b, p. 42). Within his work, he presents *flow* as a method any individual can use to achieve an optimal experience, writing "When the information that keeps coming into awareness is congruent with the goals, psychic energy flows effortlessly" (Csíkszentmihályi, 1990, p. 39). Based upon his focus on the interaction between an individual and their perceived environment, I define *flow* as a *state of mind* orientation.

When developing *flow* theory, Csíkszentmihályi interviewed "a variety of people who have invested a great deal of time and energy in play activities… mountain climbers, explorers, marathon swimmers, chess masters, composers of music, modern dancers, and inveterate gamblers" (Csíkszentmihályi, 1975b, p. 42) about their experience of when their play activities were at their peak. Due to Csíkszentmihályi's approach of interviewing participants before constructing a theoretical framework, I define *flow*'s method as a *bottom-up* approach.

Csíkszentmihályi defined *flow* as an experience that matches nine criteria, the first of which is: "a balance between the challenge of the task and skills of the individual" (Csíkszentmihályi, 1990; Nakamura & Csíkszentmihályi, 2002). Since *flow* requires a task, I define *flow* as a *ludic playfulness* theory. It appears that these interviews would not capture moments where an individual playfully changed their behavior[31]. While it may seem unusual to consider activities such as exploring as rule bound, Csíkszentmihályi's sample focused upon people with so much experience in their activity, that they perceived it as having known limitations on behavior (Csíkszentmihályi, 1975b).

Byun et al. (2017) also constructed their definition through interviews. They describe their instrument construction as "we first asked a set of open-ended questions to a sample of 31 adult undergraduate students on what they thought of playfulness with regard to using a new smartphone." (Byun et al., 2017, p.229). This study was

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[31] I do not actually know whether any interviews brought up such changes in behavior. I emailed Csíkszentmihályi requesting additional information on the exact questions or transcripts of these interviews, but there was no reply.

considered similar to Csíkszentmihályi's as having *state of mind*, *ludic*, and *bottom-up* methodological characteristics.

In summation, *Interviews* were typified by:

1. State of mind orientation

2. Ludic relationship to behavior

3. Bottom-up methodology

4.3.6. Statistical analysis of self-assessments (perceived playfulness)

This category of methodology is typified by individuals filling out quantitative tests about a playful interaction and if the answers feature certain statistical consistencies, those co-varying factors are argued to be theoretical explanations of playfulness.

Perceived playfulness is a term used in a large number of articles, especially within the field of interactive technology. Of the 130 articles read, nine of them cited *perceived playfulness*. This demonstrates that *perceived playfulness* has had a strong effect on playfulness literature. Eight of those cited an article written by Moon and Kim in 2001 titled "Extending the TAM for a world-wide-web context". To give a sense of the influence of this paper, it currently has over 4000 citations. In this paper, the authors quantify the qualitative work of Csíkszentmihályi's *flow* theory, Ryan and Deci's *Self-Determination Theory*, and Malone's theories of video game preferences (Moon & Kim, 2001)[32]. Moon and Kim take these qualitative theories, construct individual quantitative statements (using a Likert scale) they feel represent the important aspects of these theories, and then predict how answers to these questions should statistically relate to each other. This method of defining is also influential in psychology and this kind of argumentation is well represented by Glynn and Webster in their description that "The Adult Playfulness Scale was constructed by selecting those adjective pairs which evidenced good discriminant validity in differentiating work from play (84% of items) and had face validity as a personality measure" (Glynn & Webster, 1992, p. 90). It seems that the existence of these statistical properties are viewed as synonymous with an accurate depiction of the phenomenon. An important feature to this methodological category is that future scientists base their conceptions of

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[32] The construction of this methodology is only included due to the size of influence it had on the sample. Its construction methodology is considered to be a mixture of *flow* and theoretical construction via literature review.

playfulness on the statistical factors, not any theoretical justification[33] for those factors. For example, most authors who cite Moon and Kim do not consider the other theoretical guidelines for *flow* theory. This differentiates this method from other quantitative tests that construct a theoretical conception of playfulness first and then develop a test to interpret playfulness from that theoretical perspective.

Moon and Kim define *flow* theory as focusing upon a *state of mind*, writing "the majority of the research on playfulness as the individual's interaction state are based on the Csíkszentmihályi's *flow* theory" (Moon & Kim, 2001, p. 219). Based upon how they defined their work it would be natural to view them as a *state of mind* theory, however, closer examination complicates this. S*tate of mind* theories are typified by viewing playfulness as contextually dependant on both the individual mind and the individual context. *Perceived playfulness* was used to predict the "user acceptance of the WWW [website]" (Moon & Kim, 2001, p. 224) as a semi-stable characteristic of the website across a population. This seems to present the opposite scope of *personality trait* assessments and wants to describe a semi-stable aspect of the *context of interaction* regardless of the personality of the user. Certain articles that cite Moon & Kim also seem to further focus their criteria on the context such as Kuo et al. who define one of three characteristics of *perceived playfulness*[34] as "PP03: The Kinmen battlefield has convenient transportation" (Kuo et al., 2016, p.20). It seems unlikely that this question is viewing convenient transportation as a *state of mind*. It seems more likely that Kuo et al. wanted to know whether the transportation was consistently convenient across multiple personality types. It is possible that *perceived playfulness* could be used for the scope of investigating a playful *state of mind*, but it is frequently not used in that way. I therefore view *perceived playfulness* as both a *state of mind* and *context of interaction* definition.

Moon and Kim define *perceived playfulness* as comprised of three components: Concentration, Curiosity, and Enjoyment. Both Concentration and Enjoyment appear to come from *flow* theory. Curiosity is explained as "Malone [27,28] suggested that, during playfulness, an individual's sensory or cognitive curiosity is aroused" (Moon &

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[33] If there is a theoretical justification.

[34] Which they cite as a modification of Moon and Kim on page ten.

Kim, 2001, p. 219)[35]. Malone developed his theories on video game preferences by conducting interviews of school-aged children about the video games they preferred (Malone, 1981). These interviews are considered to be a *bottom-up* method. Malone does not explicitly describe how he viewed behavior change in video gameplay. As his work does not make any real claims about the internal experience of a player, I will not spend too much time analyzing this facet of his work. I will consider him a *ludic playfulness* perspective based upon his probable focus on specific video game play behavior, but this analysis is not a strong assertion.

On first look, Moon and Kim cite *bottom-up* theories, however based upon the way Moon and Kim apply Malone's arguments we should not consider their theory purely *bottom-up*. Malone presented five components of fun in video games: Challenge, Fantasy, Curiosity, choice, and other people (Malone, 1981). Moon and Kim used only one of these components: curiosity, and then investigated it with three questions, none of which were created by Malone:

> Using WWW stimulates my curiosity
> Using WWW leads to my exploration
> Using WWW arouses my imagination (Moon & Kim, 2001, Appendix A)

Malone did not use the term exploration at all in his works and used the term fantasy instead of the closely related term imagination. Considering these large differences between Malone and how Moon and Kim used his work, I view this component of *Curiosity* in *Perceived Playfulness* to be partially constructed by the authors themselves. Moon and Kim had a similarly loose interpretation of Csíkszentmihályi's work. Moon and Kim exclusively take Enjoyment and Concentration as important factors of playfulness. As previously mentioned in this thesis, *flow* had nine components in its definition.

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[35] These articles by Malone refer to games and intrinsic motivation. Malone does not use the word playfulness or define playfulness in any work I was able to find. The statement made by Moon and Kim appears to be a problematically liberal use of the term "suggested". Malone's work is theoretically connected to Csíkszentmihályi's *flow* theory based upon their mutual interest in intrinsic motivation. However, even if playfulness is intrinsically motivated, which is by no means universally accepted, that does not mean that all theories of intrinsic motivation are applicable to playfulness research. One of their two citations for Malone (Malone, 1981) is also a popular magazine article, which presents a problem for credibility.

Considering how Moon and Kim created their perspective of playfulness by citing *bottom-up* definitions, and then heavily re-interpreting them, I view their work as a hybrid between *bottom-up* and *top-down*. This kind of reinterpretation is also a common feature within statistical analyses. Articles frequently cite *bottom-up* definitions and then heavily re-interpret them in order to build their quantitative test. Therefore I typify this category as having a mixed *theoretical direction*.

Moon and Kim investigate *perceived playfulness* as occurring within a "task". For example, their enjoyment factor is defined by the following three questions:

> Using WWW gives enjoyment to me for my task
>
> Using WWW gives fun to me for my task
>
> Using WWW keeps me happy for my task (Moon & Kim, 2001, Appendix A)

The statement "for my task" regards the user as behaviorally limited. Considering their theoretical sources are *ludic playfulness* theories, and that their questions frame the user as having a task, I define *perceived playfulness* as a *ludic playfulness* theory.

All entries in this category had specific behavioral limitations to what was considered playful. For example, if an individual was assessing phone usage, then any playfulness outside of phone usage would not be captured by this category. Therefore, this category is typified as a *ludic playfulness* category.

In summation, *Statistical Analysis* was generally typified by:

1. *Mixed (state of mind* and *context of interaction*) orientation
2. *Ludic* relationship to behavior
3. *Mixed (top-down and bottom-up)* Methodology

4.3.7. Observations of playful communities (Lieberman's spontaneity)

This methodology of defining playfulness is typified by observing a playful community for qualities of their play.

J. Nina Lieberman's influential work *Playfulness, Its Relationship to Imagination and Creativity* created a conception of playfulness that inspired the *Children's Playfulness Scale* (Barnett, 1990) and the *Computer Playfulness Scale* (Webster & Martocchio,

1992) among others. It appears her work is the first to propose "playfulness as a quality of play would developmentally transform itself into a personality trait of the player in adolescence and adulthood." (Lieberman, 2014, p. 23). I therefore define this as a *personality trait* model.

Lieberman defines playfulness as different forms of *spontaneity*. This spontaneity is described by the author as similar to "the process of recombining facts already known" (Lieberman, 2014, p. 83). This requires both understood limitations within the playful brain and an openness to changing the order and relationship of these known qualities. This reordering is described by the author as a creative activity. This definition seems to describe playfulness as creating new behaviors that have not been seen before, therefore, I interpret this methodology as a *paidic playfulness* theory.

Lieberman describes that it was during "observational studies of how children played that the concept of 'playfulness' emerged and was operationally defined" (Lieberman, 2014, p. 23). This general explanation is the closest Lieberman comes to describing an exact method of theoretical construction. Based upon this unclear method, but Lieberman's statement, I define Lieberman's approach as a *bottom-up* approach. This designation has very limited information and should not be viewed as well supported.

Other studies similarly used embedded researchers observing the play of a community (Sullivan, & Wilson, 2015). Sullivan and Wilson have a very different methodological use of this observation method. They engaged in a *top-down* analysis, using Vygotsky's theory of imagination play to investigate playful talk in teenagers (Sullivan, & Wilson, 2015). As they use a previous theory to address a specific play behavior, they are characterized as a *top-down, ludic* playfulness methodology. They describe playful talk as "a pivot toward the development of new, self-determined identities for youth" (Sullivan, & Wilson, 2015, p.9). The use of the term identity appears to label it as a *personality trait* scope.

In summation, *Observations of playful communities* were generally typified by

1. *Personality trait* scope
2. *Mixed (paidic and ludic)* relationship to behavior
3. *Mixed (top-down and bottom-up)* methodology

4.3.8. Literature Reviews on Playfulness

This methodology is typified by authors conducting a disciplinary literature review and synthesizing a definition. Frequently this is done to define playfulness in relationship to other concepts such as games, (Stenros, 2015) creativity, (Bateson, 2015) functionality, and usability, (Arrasvuori et al., 2011), attachment styles (Gordon, 2014), early childhood education (Singer, 2015), highschool education (Fine, 2014), or workplaces (Glynn & Webster 1992)[36].

All of the entries in this category dealt with synthesizing scientific theories on playfulness as *theoretical arguments* rather than treating written texts as sources of *data*, therefore I analyze this category as having a *top-down theoretical direction*. I will provide a more in-depth analysis of the *Adult Playfulness Trait Scale* as an example case due to its relevance in the sample.

The *Adult Playfulness Trait Scale* was the most heavily cited entry in this category (Shen, Chick, & Zinn, 2014a). The *Adult Playfulness Trait Scale* had "Uninhibitedness" as one of the factors defining playfulness. That component includes statements such as "I don't always follow rules" (Shen, Chick, & Zinn, 2014b, p. 355). This describes the playfulness as potentially changing behavioral rules thus, I describe this as a *paidic playfulness* perspective.

The APTS defines playfulness as "internal dispositional qualities" (Shen, Chick, & Zinn, 2014b, p. 345) of a playful person. Thus, I describe the APTS as having a *personality trait* orientation.

This method of defining playfulness is representative of the other methods used by many literature review driven works. Authors embed themselves in a full understanding of a discourse within their own field and make a unique theoretical claim on playfulness that is *top-down* in *theoretical direction*. Due to the breadth of this category, there is a broad representation of *ludicism* of methods in this category as well as a mixture of *state of mind* and *personality trait* definitions.

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[36]The APS by Glynn and Webster has been criticized for its separation of work and play and other methodological and theoretical shortcomings (Proyer, 2017; Shen, Chick, & Zinn, 2014a).

In summation, *literature reviews* were generally typified by:

1. *Mixed (trait and state)* orientation
2. *Mixed (paidic and ludic)* relationship to limitations
3. *Top-down* methodology

4.3.9. Theoretical Definitions of Playfulness

Other works in the sample were theoretical explanations of the author's viewpoint of playfulness. This included foundational authors such as Caillois & Barash (2001), Huizinga (2002) as well as more recent contributions such as Sicart (2014).

For example, *Playfulness 1947-2017: Hermeneutics, Aesthetics, Games* by Peter McDonald is a PhD dissertation that defines playfulness as an aesthetic experience. His major goal is to analyze "the lineage that extends from the development of avant-garde games in the 1950s and 60s to the establishment of video games as the hegemonic form of play in the 1990s." (McDonald, 2018, p. ix). He extends this analytical lineage by applying the concept of playfulness to games across these historical categories. His exact method of defining playfulness is a theoretical approach where he provides narrative examples to justify his points. For example

> Watching a politician's speech that evening with your friends, you all drink each time he says some inane phrase...Games are often incredibly repetitive, but the repetitive parts are not necessarily playful. If playful repetition does exist, it exists in striking counterpoint to the spontaneity, manifest joy, and humor attributed to playfulness by Josefa Lieberman (McDonald, 2018, p. 32)

The author uses this imaginary example as *data* for his previously constructed *theoretical explanations*. Thus, his work is analyzed as a *top-down* analysis. As all of the academic work in this category used conceptual argumentation to define playfulness, this category is typified as having a *top-down theoretical direction*.

When analyzing the role of boundaries in playfulness, McDonald writes "playfulness is neither a subjective part of us, nor something objective out in the world—it is an aesthetic experience that crosses these domains and confuses them" (McDonald, 2018, p. 1). Due to his rejection of playfulness as being connected to a personality, but an

emergent quality between a person and a specific context, I define his definition as a *state of mind* definition.

This perspective of playfulness is very similar to Turner's commentary of playfulness resisting categorization. McDonald ultimately defines playfulness as having a "aporetic dynamic, to which that playfulness is a response" (McDonald, 2018, p. 260) or in simpler words he views playfulness as a response to boundaries that would normally be perceived as offering no choice. As this was one of the strongest denunciations of playfulness as a discrete behavior, I define this as a strongly *paidic playfulness* theory.

In this category there was a wide mixture of *paidic* and *ludic* conceptualizations. These theoretical arguments were predominantly interested in *state of mind* definitions. However, certain theoretical arguments violated the *state vs. trait* binary. An additional orientation for playfulness were theorists who described characteristics of contexts that were likely to insight playfulness in the users. This was used to investigate Animal Computer Interaction (Pons, Jaen, & Catala, 2014; Pons, Jaen, & Catala, 2015), fathers' behaviors meant to incite playfulness in their children (Sethna et al., 2018), the organization of game jams (Goddard, Byrne, & Mueller 2014), and work places that enable a playful attitude in their workers (Warmelink, 2014). This category seems to use the *context of interaction* scope of definition.

For example, Pons, Jaen, and Catala's (2015) description of designing playful environments for animals focuses on "how different types of stimuli affect the animals' engagement" (Pons, Jaen, & Catala, 2015, p. 27). These types of stimuli are neither trait aspects of the animal users, nor are they individual interactions by their users. They are environmental characteristics such as responsiveness to different animal behaviors. All of the above studies were *top-down* theoretical methodologies. Most of them had a *ludic* perspective where an individual was meant to engage playful environments with a specific behavior. The only exception to this was Sethna et al.'s (2018) article which described playful environments created by fathers as including things like "ambiguous behaviours which destabilize the infant and whose expectations are contradicted" (Sethna et al., 2018, p.10). This seems to focus upon infant play as non-behaviorally specific and was viewed as a *paidic playfulness* theory.

In this way a fourth category of orientation was revealed in this data set: Playfulness as a characteristic of the context.

In summation, *theoretical arguments* were generally typified by:

1. Mixed (state and context) orientation

2. Mixed (paidic and ludic) relationship to limitations

3. Top-down methodology

4.3.10. Discussion

The methods used to study playfulness can be represented along three dimensions: *orientation (state, trait, artifact, context), ludicism*, and *theoretical direction*. The following figure is a graphical interpretation of these important methods in the sample:
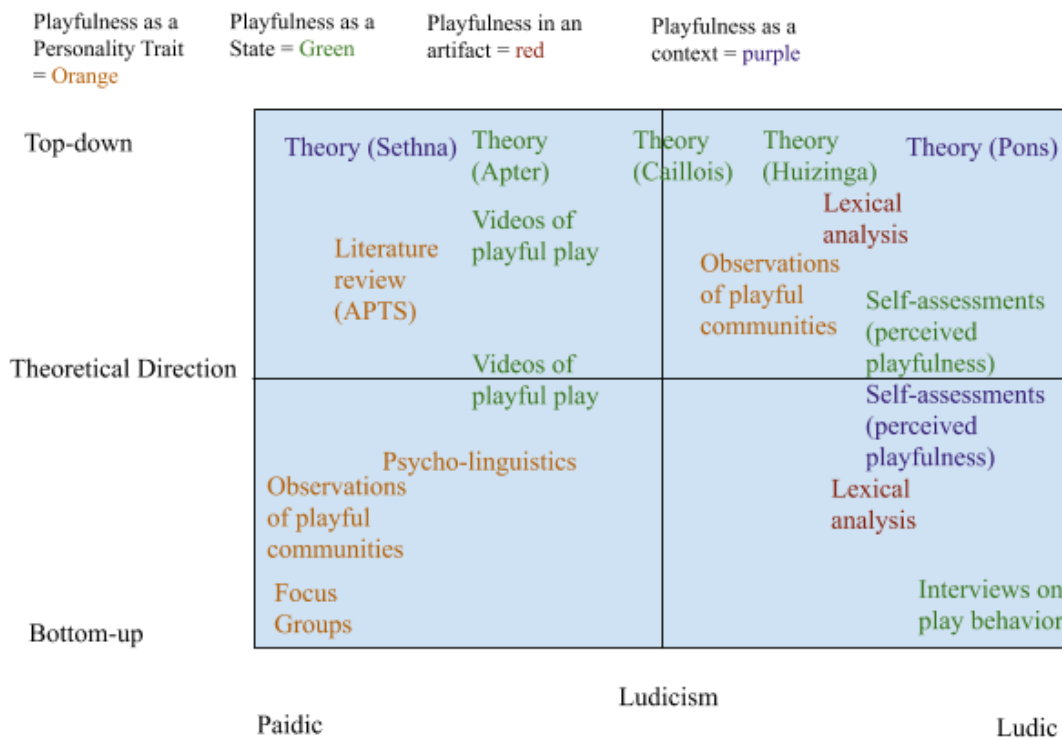
Figure 3: Methodologies of Defining Playfulness

The above chart appears to show a divide between two methodological clusters of studying playfulness. *State of Mind* definitions appear to be more likely to be *top-down* and *ludic*. *Personality trait* definitions are more likely to be *bottom-up* and *paidic*. There was no example found of Playfulness as a *context of interaction* or *artifact* that uses a *bottom-up, paidic* methodology.

Based upon this methodological analysis I offer two contributions to modern scientific discourses of playfulness.

1.   Playfulness should not be viewed simply as either a *state of mind*, or a *personality trait*. In order to bridge multidisciplinary priorities authors should advance this binary by including an awareness of playfulness as a *context of interaction* and as an *artifact organized playfully.*

2.   There is a gap in modern scientific literature investigating playfulness as a *context of interaction* and as an *artifact organized playfully* from a *bottom-up*, *paidic* perspective.

In conducting this methodological analysis I also answer my first research question.

Q1: How was the definition of playfulness constructed in the different disciplines that study it?

A1: The sample presented nine categories of methods used:
1. Videos of playful play
2. Psycho-linguistic analyses
3. Lexical analyses
4. Focus groups
5. Interviews
6. Statistical signification
7. Observations of play
8. Literature reviews
9. Theoretical arguments

4.4. Thematic Analysis

Over the course of this study I analyzed 147 written works that conceptualize how playfulness is experienced. Following the procedure of Yin's five-phase method for thematic analysis I identified six themes.

Q2: How is the internal experience of playfulness defined across disciplines from a

phenomenological perspective?

A2: The sample presented six phenomenological themes defining playfulness:

1. Playfulness is an engagement with a single framework of meaning.
2. Playfulness is an openness to new/a change in engaging frameworks of meaning.
3. Playfulness is changing a framework of meaning in order to be engaged.
4. Playfulness prioritizes engagement over external consequences.
5. Playfulness prioritizes engagement over realness.
6. Playfulness prioritizes engagement over relevance.

I will begin by explaining each theme focusing upon its *intention* and *perspective*. In conclusion I will argue my definition of playfulness as follows:

Playfulness is an organization of experience that prioritizes engagement over realness, relevance and consequence. Engagement is further defined as coming from attentional fullness, emotional reinforcement, recognizing and manipulating patterns, and sharing perspective.

This organization is viewed from four distinct positions.

1. A person who is organizing the experience in a playful way or is likely to. (playful *personality trait*)
2. An interaction between a person and an environment that is organized playfully. (playful *state of mind*)
3. An environment that is organized to be interacted with in a playful way (playful *context*)
4. Artifacts that remain after a playful interaction that are best explained by an awareness of their playful organization, such as transcripts of playful conversations. (playful *artifact*)

4.4.1. Theme 1: Playfulness is an Engagement with a Single Framework of Meaning

Commonly used criteria: concentration, enjoyment, escapism, immersion.

Sicart in *Play Matters* (2014) defined the source of playfulness as a quality of engagement when he wrote

> We want our modern lives to be dynamic, engaging, and full of the expressive capacities of play. But we also want them to be effective, performative, serious, and valuable. We need play, but not all of it—just what attracts us, what makes us create and perform and engage, without the encapsulated singularity of play (Sicart, 2014)

This form of playfulness describes a deep experience of engagement that occurs while invested in a framework of meaning. Playfulness is described as paying attention to a frame and having strong emotional reinforcement to keep interacting with this frame[37]. The beginning of this playfulness is not important, it is often describing a habitual experience, or a context that a person is forced to accept. The perspective of playfulness is a single frame of meaning. The intention of playfulness is the actions the person takes and their meaning within this framework.

The opposite of this form of playfulness is disinterest. An example would be if a person was playing a new game and became bored by what was happening and decided to do something else instead. If the person had continued to play the game and had felt strongly about what was happening in the game, that would be playful.

Moon and Kim represent this engagement quality when they define playfulness as "an intrinsic belief or motive, which is shaped from the individual's experiences with the environment" (2001, p. 219). This playful belief is that the environment will hold a person's concentration, spark their curiosity and provide them enjoyment.

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[37] It is valuable at this point to discuss a major academic conflict over the nature of engagement and positivity. One of the most common factors to define the experience of being within a playful engagement are the terms enjoyment, pleasure or fun (Barnett 2007; Bundy et al. 2001; De Koven 2014; Fullerton 2008; Glynn and Webster 1992; Hsieh et al. 2017; Lazzaro 2009; Lieberman 1977; Maslow 1971; Moon and Kim 2001; Schaefer and Greenburg 1997; Schell 2019; Shen et al. 2014; Sicart 2014; Van Vleet and Feeney 2015; Yarnal and Qian 2011). Several other authors have directly criticized this analysis of universal positivity within playful experiences as unjustified (Arrasvuori et al 2011; Kerr and Apter 1991; Proyer 2017; Tamborini et al. 2010; Schechner 2012; Stenros 2015; Sutton-Smith 1997). These critics will argue that in playfulness negative emotion is often present and can reinforce the act of play. There is no direct *bottom-up* research that analyzes individuals who self-identify a playful experience and then investigates what their hedonic tone was during that experience. Thus, rather than using overtly positive terminology I am opting for the more neutral term "emotional reinforcement".

Concentration is the belief that "in the playfulness state, an individual's attention will be focused on the activity. The focus is narrowed to a limited stimulus field, so that irrelevant thoughts and perceptions are filtered out" (Moon & Kim, 2001, p.219). This kind of focus was derived from *flow* theory (see Moon & Kim, 2001, p. 219 for their treatment of *flow* theory) and is frequently the entire definition of playfulness. Li, Theng & Foo wrote "It [Playfulness] represents whether an individual is interested, attracted, and engaged in a certain activity." (2016, p. 176)[38] Other authors similarly define playfulness as a degree of how involved a player is in an activity (Besio et al. 2016, p. 98).

Pons, Jaen, and Catala wrote that a goal for a playful environment for animals in captivity would be to "capture the animal's attention and engage it in playful activities" (Pons, Jaen & Catala, 2015). Similarly, Costello and Edmonds analyzed the playfulness of interactive art exhibits and discussed

> This project began with the hypothesis that stimulating playful audience behavior might be a way of achieving a deep level of audience engagement. Interactive artists dread the type of audience participant who spends very little time with their work and who then says, "that they 'got it' but that it didn't 'do much' (2007, p. 77)

Flow Theory by Csíkszentmihályi is frequently cited within this category. Authors cite *flow theory* to support claims that playfulness is absorbing (Fine 2014, p. 4), and *flow* is described as an extreme type of playful engagement in the study of playfulness in museums (Taheri & Jafari, 2014, p. 9).

This playful engagement with an action is often described as being extreme. Van Manen defines playfulness as "being gratuitously engaged" (2018, p. 678). This kind of extreme engagement can also occur with a way of seeing the world. Cermak-Sassenrath applies Huizinga's theories and argues "Play means taking on a certain perspective. This perspective is the play spirit, a mood that the player willingly takes on and which simultaneously captivates him." (2015, p. 94). This extreme captivation is also

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[38] The sentence before this quote cites this as Lieberman's definition of Playfulness as a personality trait. I disagree with this interpretation as being Lieberman's definition of playfulness.

described with concepts like immersion. Van Vleet and Feeney argue playful children become "fully immersed in the activity" (p. 631). Several other authors use immersion into an activity to define playfulness (Craft et al., 2013; Fröhlich et al., 2018; Kuo et al., 2016; Mathwick, Malhotra, & Rigdon, 2001; Sanderson, 2010). This extreme engagement constructs the first intention of this form of playfulness: Attentional fullness on a single framework of meaning.

This extreme form of engagement then seems to activate emotional reinforcement. Fun-seeking intrinsic motivation is described as intention that is perceived exclusively through the framework of meaning and the emotional value of that framework's meaning. Moon and Kim define enjoyment for playful users as "they will find the interaction intrinsically interesting: they are involved in the activity for pleasure and enjoyment rather than for extrinsic rewards." (Moon & Kim, p. 220). Playfulness is similarly described as a method of gaining intrinsic enjoyment by Mathwick, Malhotra and Rigdon who write "Playful exchange behavior is reflected in the intrinsic enjoyment that comes from engaging in activities that are absorbing, to the point of offering an escape from the demands of the day-to-day world[39]" (2001, p.44). This use of intrinsic refers to being inside the frame of meaning that is being engaged with. This constructs the second intention of this form of playfulness: Emotional reinforcement within a single framework of meaning.

In this way we can see a definition of playfulness:
Playfulness is an engagement with a single framework of meaning.

Perspective: Singular

Intention: Engagement as attentional fullness and emotional reinforcement

4.4.2.   Theme 2: Playfulness is an openness to new/a change in engaging frameworks of meaning.

Being literate in play means being playful — having a ludic attitude that sees the world's structures as opportunities for playful engagement. (Zimmerman 2009, p. 161)

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[39] This quotation is followed by a citation to "(Huizinga, 1955; Unger & Kernan, 1983)" however it does not appear to be a very direct citation to either *Homo Ludens* or Unger and Kernan's *On the meaning of leisure: An investigation of some determinants of the subjective experience.* (which does not define playfulness) and thus I think this quote should be viewed as the author's opinion.

The second theme that I will discuss is: Playfulness is an openness to new/a change in engaging frameworks of meaning.

This form of playfulness is capable of seeing and following opportunities to be engaged. There are generally two forms of openness that are discussed: sensitivity and flexibility. These two forms describe the same type of openness but with two different kinds of change they are open to. A sensitive openness refers to perceiving a new playful experience and being ready and capable of focusing on that experience. A flexible openness refers to allowing an ongoing playful experience to change in order to keep oneself or others engaged.

4.4.2.1.   Sensitivity: Ready to be Engaged (by Something New)

Commonly used criteria: Curiosity, Exploration, uninhibited (non-considered spontaneity)

Bernard De Koven writes in his 2014 book *A Playful Path* "Playfulness is all about being vulnerable, responsive, yielding to the moment. You might not be playing, but you are willing to play, at the drop of a hat, the bounce of a ball, the glance of a toddler, the wag of a tail. You are open to any opportunity. You are loose. Responsive. Present." (p. 34)

This form of playfulness describes normal life as a world of opportunity. Playfulness is described as a sensitivity and a willingness to accept those opportunities and choose to engage with the meanings already present in reality. The beginning of a playful experience is external, such as the wag of a tail. The perspective of playfulness is any event that is engaging. The intention of playfulness is any one thing that is engaging in the moment.

The opposite of playful sensitivity is being closed. A total lack of perception or actively ignoring all stimuli. An example could be if a person is rushing to work, they may ignore the sound of a child laughing. They may even become habituated to not being open to stimuli around them and feel like there were no opportunities to be playful. If a person is able to pay attention to their external environment and become more sensitive and ready for these engaging offers, they become more playful.

This form of playfulness can be a passing state, such as how Arrasvuori et al. define "playful experience as spontaneous enjoyment arising from an action [28]. This enjoyment can arise, for example, from doing mundane activities in a way that is somehow different from how they are usually performed." (Arrasvuori et al., 2011, p. 4). It can also be presented as a more stable feature of a playful person. In education, Walsh, McMillan, and McGuinness describe playful teachers as having "A joyful readiness for anything" (Walsh, McMillan & McGuinness, 2017, p. 199). Similarly, Sanderson, in developing the Project Joy Playfulness Scale, defines playfulness as "the expression of the child's drive to freely and pleasurably engage with, connect with, and explore the surrounding world." (2010, p. 67). Gordon also views playfulness as emotionally healthy, writing that playful people see the "World as playground... They view strangers as potential playmates and new environments as potential playgrounds." (Gordon, 2014, p. 246). This viewpoint of playfulness as a healthy form of openness to engagement is also present in international discourses on human rights to play. In a policy paper written for the United Nations, Lester & Russell define "'playful disposition' – is ever-present and emerges when children 'feel' that it is possible to play. It marks a state of positive emotional arousal that seeks to engage with the world in a distinctive manner." (Lester & Russel, 2010, p. 7). For adults, this conception of playfulness is present in sexual studies as argued by Paasonen who wrote "Playfulness here translates as a mode, capacity and orientation of sensory openness, curiosity and zest for variation that precipitates improvisation in acts of play." (Paasonen, 2018, p. 1). It is common in this theme to describe a predisposition to approach normal life with an expectation that events will be "fun" (Schaefer & Greenberg, 1997; Chick, Yarnal, & Purrington, 2012). All of these definitions focus upon sensory openness providing emotional reinforcement. This constructs the first intention of this form of playfulness: Emotional reinforcement for sensitivity.

Being open to newness is frequently mentioned in this conception of playfulness. Authors communicate this theme when they write about playfulness activating exploration systems (Anderson et al., 2013) when they discuss playfulness as involving curiosity (An, 2018; Cabrera et al., 2017; Moon & Kim, 2001) or involving openness to new information (Carr, 2014; Guitard, Ferland, & Dutil, 2005; Van der Meij, Broerse, & Kupper, 2017). These authors emphasize playfulness as paying attention to new

information. This constructs the second intention of this form of playfulness: Attention to new engagements.

Several authors discuss playfulness as involving being uninhibited (Barnett, 2007; Lockwood & O'Connor, 2017; Shen, Chick & Zinn, 2014a; Waldman-Levi, Erez & Katz, 2015). This refers to a sudden engagement that is not considered deeply. This suddenness of engagement shares the criteria of openness: it is an external beginning with an open perspective and the intention is an engaging event.

In this way we can see a definition of playfulness:
Playfulness is an openness to new engaging frameworks of meaning.

Perspective: New or sensory engagements
Intention: Engagement as attentional fullness and emotional reinforcement

4.4.2.2.   Flexibility: Ready to be Engaged (after change)

Commonly used criteria: Playing along, awareness of more than one perspective, Internal Locus of Control

Møller conducted a four-month experimental study of how Danish preschoolers use preselected toys to engage in transformative imagination play and concluded: "Playfulness is therefore understood as a willingness to affirm transgressive acts, thereby transforming the play scenario such that the transgression can be included in the play scenario to ensure the continuation of the play. " (Møller, 2015, p. 328)

This form of playfulness describes a playful response to disruption. Playfulness is described as an ability to step out of one perspective and be able to integrate a differing perspective in order to enable play. The beginning of this playfulness is a response to external disruption. The perspective of playfulness is an integration between external and internal viewpoints. The intention of playfulness is continuing engagement despite change.

The opposite of this form of playfulness is disruption causing the end of a playful experience. An example would be if a person was playing a rule-bound game and another player wanted to change to a different game. The first player is upset at the

disruption of the game and refuses to change, ending the playful experience in its entirety. If the first player was flexible and was open to changing games, that would be playful.

Authors representing this theme emphasize playfulness as requiring "implicit awareness of more than one perspective." (Carr, 2014, p. 272). Playfulness has been defined as a fundamentally flexible form of thinking that happens between two people (Youell, 2008, p.122). This flexibility implies both an openness to others' perspectives and treating others' perspectives in a more flexible manner. Parker-Rees writes "playfulness helps to loosen the hold of structures, social rules and constraints, making it easier for participants to find a fit between public, shared concepts and their own unique tangle of experiences." (Parker-Rees, 2014, p. 366). One paper viewed egalitarian attitudes and allowing open participation between game designers at a game jam as being synonymous with those game jam teams being playful (Goddard, Byrne & Mueller, 2014, p. 4). Similarly, the second *Test of Playfulness* measures the playful internal locus of control in part by assessing if a child "negotiates with others to have desires or needs met" (Bundy et al., 2001). This constructs the first intention of this form of playfulness: Sharing social perspectives on change.

This form of flexible openness mostly refers to playfulness occurring as a response to potential change. Authors describe playfulness as connected with adapting to change (Chang, Yarnal, & Chick, 2016, p. 211) and being defined by providing social adaptability to unexpected situations (Gordienko-Mytrofanova & Sauta, 2016, p. 47).

Certain definitions focus upon a playful environment as an environment that seeks to destabilize normal expectations, requiring attentional flexibility. Sethna et al. constructed a predominantly behavioral analysis of playfulness for fathers playing with their children. Their definition had one criterion that spoke to the intended experience a father had for their child, defining playful teasing as "unexpected ambiguous behaviours which destabilize the infant and whose expectations are contradicted" (Sethna et al. 2018, p.10). Sethna then argued that this disruption of expectations heightened the infant's attentional sensitivity. Brown & Leigh similarly argue that "play disrupts existing norms and expectations." (2018, p. 6). Authors focusing on playful education sometimes take this flexible thinking as a way to educate minds and incite attentional fullness (Van der Meij, Broerse, & Kupper, 2017). Skillbeck writes playfulness

"encourages students to question their assumptions about a topic, unsettles prior knowledge and opens up students to the possibility of new knowledge." (2017, p. 5). Similarly, Graven defines "Being playful, in the present context, means being ready, willing and able to perceive or construct variations on learning situations and thus to be more creative in interpreting and reacting to problems" (2014, p.172). Bateson in creativity research also viewed playfulness as a "positive mood state in which the individual is more inclined to behave (and, in the case of humans, think) in a spontaneous and flexible way." (Bateson, 2015, p. 13; Nijholt, 2017 also uses this definition). Thinking flexibly is also a definitive feature of the *Parental Playfulness Scale* (Cabrera et al., 2017; Menashe-Grinberg & Atzaba-Poria, 2017)[40]. This constructs the second intention of this form of playfulness: Attention to changing engagements.

There is a revealing difference between "change" and "new" within these two forms of openness. It seems all "newness" would be a "change" and vice versa. However, the difference appears to be in the expectation of playfulness. A "flexible" mind thinks a specific playful event was going to occur and that expectation was noticeably changed causing a potential rejection of the new form of play. A "sensitive" mind did not have a specific playful event in mind, instead interpreting the "change" toward playfulness as an offer for a "new" form of playfulness. It appears sensitivity is the ability to see new kinds of playfulness and flexibility is the ability to let go of older forms of playfulness if they are no longer playful.

In this way we can see a similar, yet distinct definition of playfulness: Playfulness is an openness to change in engaging frameworks of meaning.

Perspective: Engagement after change
Intention: Engagement as sharing perspective and as attentional fullness

4.4.3. Theme 3: Reframing for engagement

 Commonly used criteria: Other-Directed, Framing, Intrinsic Motivation (I-intrinsic)

In 2007, Lynn Barnett conducted a series of focus groups with university students on what makes a playful person. After a process of essentializing and validating the data,

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[40] The original article that constructs the *Parental Playfulness Scale* is an unpublished work by Atzaba-Poria et al. (2014). I emailed the authors, but was unable to receive a copy of this manuscript.

Barnett concluded playfulness was the "predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humor, and/or entertainment" (p. 955)

This form of playfulness describes a playful person who is able to see the world as potentially more interesting for themselves and others. Playfulness is described as an active and intentional way of organizing experience. The beginning of this form of playfulness is internal: A person sees a potentially playful way to interact with their environment. The perspective of playfulness is an engaging subset of what is occurring in the external environment. The intention of playfulness is a heightening of engagement in oneself or in others.

The opposite of playful reframing is being passive, accepting the world as it is whether interesting or not. There are two meaningful examples. One example is a lack of skill at reframing reality to be engaging. If someone does not know how to re-frame reality in a way that is engaging, they will not do it. The second example is someone who has the skill to re-frame reality but chooses not to expose this alternate interpretation they see. Both opposites construct the image of someone who accepts a less interesting framework of meaning for the reality they are living in. If the person instead actively changed what was focused on by telling a joke or offering a game to those around them, they would be identified as more playful.

Barnett's framework has extensively influenced modern psychology research on playfulness. It has been cited numerous times (Barnett 2017; Barnett & Owens, 2015; Berger et al., 2018; Clarke & Basilio, 2018; Leung, 2014; Proyer, 2012; Proyer, 2014a; Proyer, 2014b; Proyer, 2014c; Yue, Leung & Hiranandani, 2016). It is also similar to the second most common definition of playfulness as a *personality trait* in psychology: the *OLIW*.

Proyer defines playfulness for the *OLIW* as "Playfulness is an individual differences variable that allows people to frame or reframe everyday situations in a way such that they experience them as entertaining, and/or intellectually stimulating, and/or personally interesting." (Proyer, 2017, p. 8). This conception has also been applied by numerous articles (Brauer & Proyer, 2017; Proyer, 2018; Proyer et al., 2018a; Proyer et al., 2018b; Proyer et al., 2019; Proyer & Brauer, 2018; Proyer, Tandler, & Brauer, 2019). The

primary difference between Proyer and Barnett's conceptions is the apparent positivity of the engagement that is being reframed for. Barnett integrates comedy and humor into her definition of playfulness, a decision that Proyer specifically argues against (Proyer, 2017). Proyer also adds interest and stimulation. While the inherent positivity is at question between these two theories, both of them are referring to emotional consequence that incites further playfulness. Glynn and Webster's *Adult Playfulness Scale* similarly defines playfulness as inciting emotional reinforcement when they describe it as "a predisposition to define and engage in activities in a non-serious or fanciful manner to increase enjoyment." (1992, p. 83). This theme is similar to openness in that it frequently depicts an approach to daily life, however it is distinct in how active the playful person is in changing their environment in order to enable playfulness. For example, Yarnal and Qian present playful older adults as "In everyday exchanges, they tend toward mischief, naughtiness, clowning, joking, and teasing" (Yarnal & Qian, 2011, p.71). Whereas openness presents an expectation of engagement in normal life, reframing presents people who do engaging things in their normal life. This engagement is frequently discussed as actively seeking emotional reinforcement. The *Adult Playfulness Trait Scale* defines playful people as having "a strong fun-seeking motivation that drives the individual to actively derive fun from his or her internal and/or external environment" (Shen, Chick, & Zinn, 2014a, p. 68). Warmelink defined a playful organization as having "A continuous search for creative, spontaneous, and enjoyable experiences" (Warmelink, 2014, p.10). This constructs the first intention of this form of playfulness: Emotional reinforcement for creating a playful frame.

This drive to create a playful environment has also been described as a method of constructing shared social perspective. Singer wrote "Teachers and young children who co-construct a play-reality are building a strong sense of togetherness through rituals that start the day, rituals that celebrate birthdays, or rituals that are incidentally developed by the children. Through rituals shared as through drama, storytelling, and pretend play, pedagogues and children create a magic circle." (Singer, 2015, p. 33)[41]. Bundy's *Test of Playfulness* uses *framing* as one of the four criteria used to assess a playful act of play. This definition of framing is derived from Gregory Bateson who "described play as an important arena in which children frame their play by giving and

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[41] This magic circle was a reference to Huizinga's magic circle in *Homo Ludens*, however the content of Singer's definition was different enough to be viewed as a unique conception. For more explicit quotes of Singer's definition see Appendix C.

reading social cues, e.g., 'I'm playing now. This is how you should act toward me.'" (Bundy et al., 2001, p. 278). This constructs the second intention of this form of playfulness: Shared perspective of a playful frame.

Deriving, reframing, and co-construction are words of special interest. This theme describes an active and a skillful change in perspective. This is often presented as a cognitive skill, for example by Barnett who writes "People who are playful are able to transform almost any situation into one that is amusing and entertaining by cognitively and imaginatively manipulating it in their mind" (2011, p. 169). It seems not everyone is able to playfully reframe reality even if they wanted to. This theme also seems to present playfulness as having an intentional approach to how it sees the world. If a current situation was not playful enough, this version of a playful person would change how they were looking at it in order to become interested and engaged. Perspective is therefore a derived factor of experience within this theme. The playful person seeks an engaged experience and then creates a perspective in order to achieve that engagement.

In this way we can see a distinct definition of playfulness:
Playfulness is changing a framework of meaning in order to be engaged.

Perspective: Skillful instrument of engaging experience
Intention: Engagement as emotional reinforcement and sharing perspective

4.4.4. Theme 4: Non-consequential Reality
 Commonly used criteria: Done for its own sake, means over ends orientation, paratelic, autotelic, intrinsic motivation

Jaakko Stenros in his 2015 doctoral dissertation defines playfulness as "autotelic; it is its own reward." (p. 92).

This theme of playfulness describes activities that do not have goals. After the activity is over there is a belief that there will be no consequence for the activity having been done other than emotions. The beginning of this type of playfulness is not relevant for this theme. The perspective of this playfulness is frameworks of meaning that may have no effect on future frames of meaning. The intention of this activity is the activity itself or an emotion that further encourages the activity.

The opposite of this form of playfulness is goal-driven behavior. Individuals have goals and they choose activities for the purpose of achieving those goals. Emotional reinforcement is a consequence of achieving goals and is not considered a goal in itself. If an individual were to seek their own emotional engagement by pursuing an emotionally engaging activity regardless of whether it achieved their goals or exclusively choose goals that provided them with engaging activities, that would be playful.

Several authors in this theme describe playfulness as lacking consequence or seeming to lack consequence. Lucero et al. describe the playful mindset as "something not serious, with neither a clear goal nor real-world consequences" (2014, p. 36). Similarly, some definitions of *perceived playfulness* also focus on a lack of consequence describing playful "activity is perceived as enjoyable without any performance consequences" (Wendy Zhu & Morosan, 2014, p. 83). This focus of playfulness having a boundary separating it from "real" outcomes also is very close to how Huizinga defines play as a "free activity standing quite consciously outside 'ordinary' life as being 'not serious', but at the same time absorbing the players intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it." (Huizinga, 2002, p.13). Other definitions similarly focus upon playfulness as engagement that is non-productive (Rodríguez-Ardura & Meseguer-Artola, 2018, p. 7) or produces no material gains (An, 2018, p.12).

Other conceptions in this theme focus upon an apparent lack of goal. Brown and Leigh define playfulness in creativity as "linked to an unfixed purpose" (2018, p. 6). Other authors similarly define playfulness as lacking a "direct goal"[42] (Tomitsch et al., 2014, p.1). This is often presented as different from a non-playful world view, such as when Ejsing-Duun & Karoff write "Playfulness, in our understanding, is related to a way of being, in which goals and usefulness are not always at the center of activities." (2015, p. 4). This quote seems to imply that goals and usefulness are always the center of activities when not being playful. It is common in this theme to discuss playfulness as inverting the relationship between means and goals. Non-playful experiences are presented as having goals and means are selected to achieve those goals. Playfulness

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[42] In this quote they also cite *Homo Ludens*.

does the opposite, seeking an activity or experience and selecting goals and limitations in order to achieve that experience. Apter represents this well when he writes in playfulness "the activity comes first, the goal is secondary and is chosen in relation to the activity." (Kerr & Apter 1991, p. 16). This inversion of means and ends is also depicted by Dewey who describes how in play "the activity is its own end, instead of it having an ulterior result" (Dewey, 1923, p. 238). Bundy's *Test of Playfulness* similarly defines *intrinsic motivation* as a criterion of playfulness with such statements as "engages in process aspects of activities" and "repeats actions, activities, stays with the same theme" (Bundy et al., 2001, p. 281). These theories seem to describe a playful mind as engaging their attention on an activity where the consequences are an instrument to enable focus upon the activity. This constructs the first intention of this form of playfulness: Attentional fullness on potentially consequenceless behavior.

The one consequence that is usually still considered playful is emotional consequence. Byun et al. define playfulness as "a predisposition to extract pleasure from the mere involvement in activities" (2017, p. 228). Similarly, it has been defined as having "no other aim than the gratification of the doer" (West & Shiu, 2014, p. 194) and having "no purpose but enjoyment" (Würsig, 2018, p. 741). A goal of seeking personal emotional response is also sometimes the definition of *intrinsic motivation*. This is represented by another criteria of intrinsic motivation in the *Test of Playfulness*, "Demonstrates obvious exuberance and manifests joy" (Bundy et al., 2001, p. 281). This constructs the second intention of this form of playfulness: Emotional reinforcement for consequenceless behavior.

This theme also frequently references *Autotelic*, *Paratelic*, and *Self-Determination Theory's intrinsic motivation* as contributory theories of playfulness. While Csíkszentmihályi does not argue playfulness has no consequences he argues that the perspective of play is "supposed to have no real life goals and consequences" (Cheska, 1981, p. 19). He clarifies this difference by arguing that play is defined by a duality of "two sets of goals and rules, one operating here and now, one that applies outside the given activity." (Cheska, 1981, p. 19). He then argues playfulness is the prioritization of the "here and now" set of rules and goals over that which applies outside of the given activity. This seems to describe a very similar conception to others in this theme of playfulness de-prioritizing consequences.

Csíkszentmihályi also connects emotional reinforcement to playfulness when he defines *Autotelic* as one of the main aspects of play and "enjoyable in itself" (Csíkszentmihályi, 1975b, p. 10). *Self-Determination Theory* similarly defines emotional positivity as a consequence to intrinsic motivation. Deci and Ryan write that an intrinsically motivated man "would be doing what interests him, and he would experience spontaneous pleasure as long as the activity was self-organizing and the task appropriately challenging" (2000, p. 23). In this way both of them view positive emotion as a reinforcement for activity that is not traditionally extrinsic, goal-oriented behavior.

Apter disagrees with enjoyment being synonymous with playfulness. However, he does argue that there is emotional reinforcement for paratelic playfulness. He views playful activities as having a protective frame that transforms intensely stimulating activities, which would be perceived negatively in a non-playful state, into preferred experiences. So, while playful emotions may not be positive, he argues they are reinforcing the playful activity. (Apter, 1990)

In this way we can see a distinct definition of playfulness:
Playfulness prioritizes engagement over external consequences.

Perspective: Open to non-consequential frames
Intention: Engagement as attentional fullness and emotional reinforcement

4.4.5. Theme 5: Non-real Reality

Commonly used criteria: Imagination, Internal reality, as if thinking, suspension of reality.

Gregory Bateson in his 1976 book *Ritual, Play, and Performance* writes "We face then two peculiarities of play: (a) that the messages or signals exchanged in play are in a certain sense untrue or not meant; and (b) that that which is denoted by these signals is nonexistent." (Bateson, 1976, p. 71)

This theme of playfulness describes a perception of reality that is knowingly false. A player may look at an object and decide to treat it like a different object. A player may act as if they face limitations that are not actual limitations that restrict them. The perspective of this playfulness ignores known reality and opts to pay attention to an

imaginary reality or an artificial subsection of current reality. Rather than engaging with what is in the environment, this playfulness selects a framework of meaning that is not occurring and engages with it. The resulting intention is described as engaging, and easily changeable, as the content of that framework of meaning requires no more than a social negotiation between playful minds.

The opposite of this form of playfulness is realness: Individuals perceiving external reality and living by their best perceptions of what that reality means and how it limits their behavior. The organization is this reality does not prioritize engagement but realness. If a person were to ignore how reality worked and instead imagine an alternate reality in order to create an engaging experience, that would be playful.

Bundy's *Test of Playfulness* is a widely used test to assess playfulness (Besio et al., 2016; Chan et al., 2016; Fabrizi, 2014; Fabrizi, Ito & Winston, 2016; Lee et al., 2016; O'Brien & Duren, 2014; Pearton et al., 2014; Pinchover, 2017; Pinchover, Shulman & Bundy, 2016; Ríos-Rincón et al., 2016; Román-Oyola et al., 2018). It defines playfulness as the "disposition to play" and measures how playful an individual child's play is over a period of time. Bundy's conception lists four criteria: Internal Locus of control, intrinsic motivation, suspension of reality, and framing. Framing has already been discussed and is derived from G. Bateson's work. The other three criteria appear to be derived from Eva Neuman's 1974 theoretical text about play and its connection to education called *The Elements of Play* (see Muys, Rodger, & Bundy, 2006).

In this text, Neuman argued there were three criteria required for play: internal reality, intrinsic motivation, and internal locus of control for the activity. In defining internal reality, Neuman wrote "During play the player suspends reality in order to establish the rules, procedures and content of his play according to his wishes," (Neuman, 1974, p. 8). This conception seems to have become the suspension of reality which is frequently defined as "how closely a play transaction resembles the objective reality." (Román-Oyola et al., 2018, p. 2). Identifying play that does not match objective reality includes children who "perform the play activity away from reality, such as by including nonreal, pretend objects or actions into play" (Chan et al., 2016, p. 45). These pretend objects are very similar to how Vygotsky uses the concept of a pivot in imagination play. Vygotsky writes "What is most important is the utilization of the play thing and the possibility of executing a representational gesture with it. This is the key to the entire symbolic

function of children's play. A pile of clothes or piece of wood becomes a baby in a game because the same gestures that depict holding a baby in one's hands or feeding a baby can apply to them." (Vygotsky, 1980, p. 89). In essence, pretending to be in a reality that does not exist becomes a powerful way for an individual to engage in a way that would not be possible in their current reality. This also depicts Caillois's paidia which he describes as an "uncontrolled fantasy" (Caillois & Barash, 2001, p. 13). Researchers studying playfulness in adolescents also describe a kind of fantasy when they depict "Playful talk creates an imaginary space where the institutional structures of one's positional identity may be loosened. " (Sullivan & Wilson, 2015, p. 9). In dramatic education this theme is represented by definitions such as "Play/playfulness: being in an 'as if' space, improvising" (Craft et al., 2013, p. 22).

This non-real behavior can also be described as constructing an entirely separate playful reality, such as when Thibault in his doctoral dissertation writes "The player, then, oscillates between two different worlds, those of the real world and the world of play, acting almost as if the latter was real. According to Lotman, this is the underlying structure of every form of play, the very basis of playfulness." (Thibault, 2016, p. 299)"[43]. Other authors also discuss playful realities as capable of altering traditional rules and limitations by constructing artificial ones, for example Bischof et al. write "Play as a sphere in its own right can suspend ordinary laws and imperatives. But it is not utterly free from requirements as the players must foster the make-believe that creates the playful reality of paidia." (Bischof et al., 2016, p. 94-95). An acceptance of artificial restrictions in order to enable an artificial activity is very close to Suit's definition of lusory attitude which is defined as "the acceptance of constitutive rules just so the activity made possible by such acceptance can occur." (Suits, 2018, p. 40).

The use of representational gesture by Vygotsky, 'as if' space by Craft, and lusory attitude by Suits all seem to imply manipulation of behavioral patterns. In order for an individual to act as if something is occurring, they must construct the steps that would happen. This construction seems to require an awareness of how an event becomes a pattern such that one can construct the pattern of behavior by imagining the context that

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[43] Thibault does not view this statement as an all encompassing theory of playfulness. He argues that "The creation of a general theory regarding all kinds of playfulness is still missing." (p. 323). I disagree with this statement as the above quote seems inclusive enough to provide a universal insight upon playfulness even if it is not a fully sufficient exclusion criterion.

justifies it. This manipulation of context constructs the intention of this form of playfulness: Recognizing and manipulating patterns.

This theme presents a reorganization of priorities in playfulness. Non-playful reality generally prioritizes a perception of reality first and then acts in response to reality. Playfulness seems to invert this relationship, turning the perspective of reality into a consequence of intention. An individual seeks an engagement with a known pattern and is willing to generate a perspective that supports that engagement. Even though that perspective is not occurring, the engagement with an artificially patterned perspective still creates a meaningful experience.

In this way we can see a distinct definition of playfulness:
Playfulness prioritizes engagement over realness.

Perspective: Open to non-real frames
Intention: Recognizing and manipulating patterns

4.4.6. Theme 6: Re-ordered Reality

Commonly used criteria: Spontaneity, creativity, whimsical[44], parody, paradoxical.

In J. Nina Lieberman's 1977 book *Playfulness: Its Relationship to Imagination and Creativity,* she conducted multiple ethnographies of preschool-aged children and adolescents playing in the United States and concluded

> play and its quintessence, playfulness, arises in familiar physical settings or when the individual has the pertinent facts; that imagination enters by twisting those facts into different combinations, not unlike the operation of a kaleidoscope; and that the end product may, by the quality of its uniqueness, deserve the label 'creative.' (p. xi)

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[44] Proyer (2017) makes a compelling argument that previous work that deals with playfulness as humour or laughter should rather be viewed as a liking of "'unusual and odd objects and persons" (p. 6). The use of unusual and odd seems to fit within this theme's description of non-relevance. It implies that there is a thing one "should" like, and that playfulness is comfortable focusing upon other things that they "should not".

This form of playfulness describes a pattern recognized and manipulated outside of its context of relevance. The beginning of this form of playfulness is the identification of a known pattern. The perspective of playfulness re-orders the traditional parts of this pattern in such a way that the pattern is still recognizable but things around the pattern and their meaning have changed. The intention of this playfulness is often described as grotesque, twisted, dark, comedic or insightful and creative.

The opposite of this playfulness is skeptical: Individuals recognize a pattern and try to establish whether that pattern "should" be ignored. The skeptical person may agree that a pattern exists, but they also require that the pattern has meaning and that meaning is relevant in order for them to engage with it. If a person does not worry about why this pattern is happening or what it means and chooses to extend or manipulate the pattern, that would be playful.

Pharies wrote a book called the *Structure and analogy in the playful lexicon of Spanish* in 1986 which was republished in 2015. Inside this book Pharies attempts to theoretically address playful aspects of the Spanish language such as "sound-symbolism, onomatopoeia, and expressiveness" (Dworkin, 1987, p. 373). He takes a lexical approach to analyzing language, which he describes as focusing upon the form of language rather than semantic content. By addressing words that share letter combinations, number of syllables, and other internal structural patterns he defines "Play that is focused on the lexicon is based on the manipulation of paradigms and convergences - on a radical process of lexical cross-referencing and systematization." (Pharies, 2015 p.18). This playful emphasis on formal patterns is presented as at odds with semantic interpretation. Even if a pattern in language would normally be viewed as not relevant, playfulness in this text focuses on these not relevant patterns.[45]

Other scholars in this theme also describe playfulness as violating the relevant use of language, such as Crystal who defines "Language play occurs when people manipulate the forms and functions of language as a source of fun for themselves and/or for the people they are with." (1996, p. 328) she also describes playfulness as coming from "using normal forms in unexpected contexts" (1996, p. 334). Formal re-ordering also

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[45] Even if a rhyme's time inside a sentence is aligned, does not mean its patterning is something relevant to be seen.

appears in gamification literature when Holopainen & Stain argue that "caricatures of intentional behavior is at the heart of playfulness" (2015, p. 419). They later define caricatures in play as "incomplete (generally through inhibited or dropped final elements), exaggerated, awkward, or precocious; or it involves behavior patterns with modified form, sequencing or targeting." (2015, p. 422).[46]

Guo connects this reordering to defiance for playful language in Chinese internet forums writing "Creating a code system which makes odd variations of the existing normative language is a symbol of subverting the traditional rules and norms in real world." (Guo, 2018 p. 142).

This theme is often described as a subversion of rules. For example, Vaisman defines playfulness in Israeli blog posts as "playing with the rules as opposed to playing by the rules, a definition that applies to deviant orthography and typography...Playful practices with orthography and typography demonstrate how people convey social meaning through form and not solely through content." (2014, p. 70).

Other writers argue that these new irrelevant patterns can be recognized and become a shared perspective, writing "Playful turns invite the irrelevant sequential nexts. 'Playing along' involves orienting to the prior turn as retaining its usual sequential relevancies while simultaneously orienting to playful aspects." (Holt, 2016, p.13). Thus, it seems if another person were to extend the irrelevant pattern that would be viewed as playing along.

Playful meanings can also be recognized as patterns and manipulated outside of their context. Sutton-Smith in his 1997 text *The Ambiguity of Play* reserves "the concept of playful for that which is meta-play, that which plays with normal expectations of play itself... Playful would be that which plays with the frames of play" (Sutton-Smith, 1997, p. 147-148).

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[46] Turner interestingly describes liminality in rituals in a surprisingly similar way writing how "The factors of culture are isolated, insofar as it is possible to do this with multivocal symbols (that is, with the aid of symbol-vehicles-sensorily perceptible forms) that are each susceptible not of a single but of many meanings. Then they may be re-combined in numerous, often grotesque ways." (Turner, 1974, p. 59-60).

This theme describes a lack of contextual relevance as a form of freedom. Regalado, in analyzing playfulness in scientific research, connects it to "an attitude of 'throwing off constraint', that is, detaching 'messages, experiences, or objects from their context of origin, creating a new frame that allows for greater freedom, interactivity, and creative possibilities" (Regalado, 2015, p. 276-277). Other authors similarly present playing with affordances as a way of rejecting regulation. Tully and Ekdale argue that Twitter users in Kenya "play within and around the affordances of online technologies and the controls set by outside forces." (Tully & Ekdale, 2014, p. 69). This freedom seems to emphasize that regulations are often created to be the highest priority for individuals. If a rule's form is different from a rule's semantic meaning, a non-playful perception "should" prioritize the semantic meaning of that rule. This form of playfulness seems to instead prioritize any formal pattern within the rule, often then subverting the original intent of that rule, creating a perceived freedom from that intent. This freedom is also viewed as a source of creativity such as when Webster & Martocchio describe how a playful mind using a computer "will go over his thinking, and the reservoir of factual knowledge through the process of reversibility of operations and may come out with unique solutions as a result" (Webster & Martocchio, 1992, p. 58). This recombination of known information into new relationships constructs the intention of this form of playfulness: Recognizing and manipulating patterns in non-relevant contexts.

In this way we can see a distinct definition of playfulness:
Playfulness prioritizes engagement over relevance.

Perspective: Open to non-relevant frames
Intention: Recognizing and manipulating patterns

4.5. Synthesis

 Over the course of this thematic analysis six themes of playfulness have emerged from 147 written academic works. The six themes are as follows:

1. Playfulness is an engagement with a single framework of meaning.
2. Playfulness is an openness to new/a change in engaging frameworks of meaning.
3. Playfulness is changing a framework of meaning in order to be engaged.
4. Playfulness prioritizes engagement over external consequences.

5. Playfulness prioritizes engagement over realness.
6. Playfulness prioritizes engagement over relevance.

These themes present playfulness as a reordering of priority in the construction of experience. The six themes focus upon two aspects of this playful organization of experience. The first three themes focus upon how playfulness turns perspective into an instrument of engagement and the second three focus upon what playful perspectives are willing to de-prioritize for the sake of engagement.

The first three themes seem to present an instrumental relationship between perspective and engagement. *Playfulness is an engagement with a single framework of meaning* emphasizes how a playful individual who is engaged with a perspective can ignore external events. *Playfulness as openness* seems to present the opposite position of playfulness being more sensitive to external events. Both however are presenting engagement as the priority. The third theme of *Playfulness as reframing for engagement* emphasizes this relationship even more. In total, if a person is already engaged, their perspective can ignore everything else. If a person is not yet engaged, they can become intensely sensitive to potentially engaging events. If a person sees a potentially engaging frame of meaning they can quickly pivot their perspective around it and share that perspective with others. In all three cases the perspective taken is a consequence of expected engagement.

The last three themes present what playfulness is willing to de-prioritize in this pursuit of engagement. The fourth theme discusses activities that have no consequences. The playful experience provides emotional reinforcement for engagement even if there is no effect upon anything else in the future. The fifth theme discusses engaging activities that are also not real. The playful experience will engage with things that are not even occurring and will construct an imaginary perspective in order to engage with this unreal thing. The sixth theme discusses engagement that has no relevance. The playful experience will engage with patterns even if those patterns have no meaning and are in direct conflict with what would be relevant in a non-playful experience.

Virtually all themes are defined by the use of the word engagement. All written texts fundamentally discussed playfulness as a method of becoming involved with something. However, these different kinds of involvement were categorized into four priorities of

engagement: attentional fullness, emotional reinforcement, recognizing and manipulating patterns, and sharing perspective.

Combining these six themes I offer a new definition of playfulness:

Playfulness is an organization of experience that prioritizes engagement over realness, relevance and consequence. Engagement is further defined as coming from attentional fullness, emotional reinforcement, recognizing and manipulating patterns, and sharing perspective.

5 DISCUSSION

 Over the course of this thesis a new definition of playfulness has been constructed:

Playfulness is an organization of experience that prioritizes engagement over realness, relevance and consequence. Engagement is further defined as coming from attentional fullness, emotional reinforcement, recognizing and manipulating patterns, and sharing perspective.

This definition has wide-spanning implications and interprets some known paradoxes of playfulness.

5.1. Bateson's Not-Bite and Schechner's Not-Not-bite

 "A nip is not a bite, but it is also not not a bite" is a paradox of playfulness proposed by Richard Schechner in 1988 to expand the work of Gregory Bateson in 1972 (see the 2000 reprint of Bateson in the bibliography).

Through the newly developed framework this statement can be reinterpreted as "A nip is engaging like a bite, but it does not matter in the way a bite would". Using this restatement, we can see how a non-playful organization of experience would prioritize the fact that a nip does not have the consequences of a bite and therefore would not be viewed as a bite. A playful organization of experience would prioritize the engagement quality of a nip and therefore would act in response to the nip as if it was a bite. Using playfulness, the engagement quality of biting can be generated independently of ever creating the consequences of biting. If the consequences of biting would generate an experience that would end the playful exchange, actions can be modified so those consequences can be avoided. If this modification is consequentially driven and does not affect the experience, then a playful mindset would still engage as they would with a bite, even though the actions they are doing are in fact distinct from biting. Modified actions that generate an experience of biting without ever creating the non-playful consequences of biting become a new type of activity: the nip.

5.2. Turner's Liminoid

The kind of modified action that is "the nip" can be seen as a more general category of behavior.

Victor Turner describes liminoid playful behavior in modern societies when he discusses the ambiguity of playful sex using birth control writing "a shift from the meaning of sex as procreative 'work,' (a persistent meaning in tribal and feudal societies) to the division of sexual activity into 'play' or 'foreplay,' and the 'serious' business or 'work' of begetting progeny. Post-industrial birth control techniques make this division practically realizable" (Turner, 1974, p. 66).

Through the new framework, birth control can be seen as a form of special care that modifies sexual play in order to avoid the procreative consequences of playful sexual activity. Much like the nip, birth control clearly modifies sexual engagement, but through playfulness, that modification does not have to be prioritized as the experience[47]. If the consequences of begetting progeny were to occur, that would transform the experience, thus this consequential modification is ultimately enabling the experience of sexual play through this awareness of consequence.

Playful experiences that are treated as true, but where special care is also simultaneously taken to avoid normal consequences, create a unique action that is in reference to the original, is experienced similarly to the original but is also clearly not the original: the liminoid behavior.

In this way I offer a new definition of liminoid behavior: behavior that prioritizes engagement, where special care is taken to avoid certain consequences of that engagement.

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[47] Authors such as Lotman specifically think playful minds should have affected self-awareness arguing the "player must simultaneously remember that he is participating in a conventional (not real) situation (a child knows that the tiger in front of him is a toy and is not afraid of it), and not remember it (when playing, the child considers the toy tiger to be a real one)" (Lotman, 2011, p. 254)

5.3. Turner's Liminal

Turner also depicts another relationship between "work" and "play" as typified by tribal societies when he writes

> The liminal phases of tribal society invert but do not usually subvert the status quo, the structural form, of society; reversal underlines that chaos is the alternative to cosmos, so they had better stick to cosmos, that is, the traditional order of culture-though they can for a brief while have a heck of a good time being chaotic, in some saturnalian or lupercalian revelry, some charivari, or institutionalized orgy. (Turner, 1974, p. 74)

Turner describes the experience of chaos as a strong reinforcement for the traditional order of society. In earlier parts of his work, he describes how "Religious festivals embodied both work and play" (Turner, 1974, p. 67) as the playful experience required the "diligent and laborious" (Turner, 1974, p. 67) effort of shamans and religious officials. This active reframing of turning playfulness "into the service of normativeness almost as soon as it appears" (Turner, 1974, p. 76) can be reinterpretted through the new framework as a form of special care taken to ensure certain non-playful consequences occur from playful experiences.

As the playful perspective would generally not prioritize the consequences of playful experience, this perspective seems to be an instrumental usage of the playful perspective: liminality.[48]

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[48] Liminal behavior would be difficult to identify as either playful or non-playful. It very well might look like play that then has clear intentional, consequential benefits. This articulates a restriction for certain ways of identifying playfulness in animals. Bughardt defined five criteria for identifying play in animals, the first of which is play is "incompletely functional in the context in which it appears" (Graham & Burghardt, 2010, p. 394). Liminality appears to be the advanced usage of playfulness that ensures a playful experience is completely functional in the context in which it appears. It is unclear if certain animals may be capable of liminal play that has gone unidentified using this criteria.

In this way I offer a new definition of liminal behavior: behavior that prioritizes intense engagement, where special care is taken to ensure certain consequences from that engagement[49].

Turner's treatment of tribal religious festivals also begs a new question: What if religion was analyzed as an experience that prioritizes engagement over realness, relevance, or consequence, where certain parties are attempting to ensure consequence from that engagement?

5.4. Stenros's One-Sided Play

Stenros, in his dissertation, discusses "it is interesting to ponder what 'bad play' can reveal about play – especially if the mindset and the activity are separated. This creates a possibility for one-sided play. For example, if flirting can be seen as play, then are at least some instances of sexual harassment play from the point of view of the harasser?" (Stenros, 2017, p. 73).

Through the use of the new framework, one-sided play can be interpreted as a multi-mind experience where one mind is organizing an experience playfully while another mind is organizing the same experience non-playfully. If the non-playful mind is experiencing negative consequences from the act of play and is trying to get it to stop by communicating those consequences, the new framework predicts a likely, and deeply unethical, breakdown in communication.

The non-playful mind may think that communicating that an action has negative consequences, like "you're hurting me", would get a person to stop doing what they are doing. However, the playful mind has the capacity to de-prioritize negative consequences beneath their own engagement. This creates the opportunity for a person to be fully aware that what they're doing is hurting another person and for them to systematically ignore that. According to the new model, playfulness could provide them a profoundly powerful tool to ignore negative feedback about their own actions.

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[49] The goal of creating a playful experience that in turn creates non-playful consequences also bears a striking resemblance to how the goal of gamification is described, for example as "a process of enhancing a service with affordances for gameful experiences in order to support users' overall value creation." (Huotari & Hamari, 2012).

Extending Stenros's example, it seems that one sided play creates a distinctly dangerous situation, where not only could negative consequences occur in play, but those consequences could be systematically ignored through playfulness.

In this way I offer a new definition of one-sided play: An asymmetrical experience that is organized playfully by certain parties and organized non-playfully by others.

5.5. Regulating Playfulness

This presents a deep cultural problem with attempting to regulate playful behavior as if it was consequentially driven, self-aware, or contextually relevant[50].

According to a non-playful organization of experience the following seem like reasonable actions that could regulate behavior:

Punishment: If a destructive behavior is responded to consistently with a negative consequence, it is reasonable to think a person who does not want that consequence will not do that behavior in the future.

Discussion: If a destructive behavior is responded to with explicit description of why that behavior is destructive, it is reasonable to think a person who does not want to be destructive will not do that behavior in the future.

Support: If a destructive behavior appears to be goal-oriented, and is then given what it wants it is reasonable to think a person who has what they want will no longer engage in that destructive behavior.

Through the use of the new framework we can see how a playful organization of experience is capable of prioritizing engagement over such punishments, awareness of misdeeds, or contextual meanings. Some of these tools may even reinforce the playful engagement. This opens the door for a profound philosophical question: How can and should a society attempt to regulate playfulness?

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[50] In my previous work, I designed games and safety rules for children. I focused upon designing intervention protocols for identifying and changing destructive behaviors occurring during play. My past work experiences reinforce my viewpoints in the following section.

This is only a brief overview of the interpretive value of this new framework. Additional theoretical analysis should be conducted.

6 CONCLUSION

Over the course of this thesis a multidisciplinary, systematic, phenomenological literature review was conducted to identify how playfulness is defined across discipline and how that definition was constructed.

One hundred and forty-seven written works were read and analyzed for the purpose of this thesis. Sixty-five conceptions of playfulness were identified, with nine prominent methodologies for defining playfulness. In this way I address my first research question:

Q1: How was the definition of playfulness constructed in the different disciplines that study it?

A1: The sample presented nine categories of methods used:
1. Videos of playful play
2. Psycho-linguistic analyses
3. Lexical analyses
4. Focus groups
5. Interviews
6. Statistical analysis of self-assessments
7. Observations of play
8. Literature reviews
9. Theoretical arguments

In conducting this methodological review there was an unexpected finding that playfulness has been observed from four distinct positions:

1. An individual who is organizing the experience in a playful way or is likely to. (playful *personality trait*)
2. An interaction between an individual and an environment that is organized playfully. (playful *state of mind*)
3. An environment that is organized to be interacted with in a playful way. (playful *context*)
4. Artifacts that remain after a playful interaction that are best explained by

an awareness of their playful organization, such as transcripts of playful conversations. (playful *artifact*)

Using this methodological awareness to integrate diverse findings, a thematic analysis was conducted that identified six major themes for defining playfulness.

Q2: How is the internal experience of playfulness defined across disciplines from a phenomenological perspective?

A2: The sample presented six phenomenological themes defining playfulness:
1. Playfulness is an engagement with a single framework of meaning.
2. Playfulness is an openness to new/a change in engaging frameworks of meaning.
3. Playfulness is changing a framework of meaning in order to be engaged.
4. Playfulness prioritizes engagement over external consequences.
5. Playfulness prioritizes engagement over realness.
6. Playfulness prioritizes engagement over relevance.

From those six themes a new definition of playfulness was synthesized as:

Playfulness is an organization of experience that prioritizes engagement over realness, relevance and consequence. Engagement is further defined as coming from attentional fullness, emotional reinforcement, recognizing and manipulating patterns, and sharing perspective.

Utilizing this new framework, I provided exploratory interpretations on the following topics: Nip vs. Bite, liminoid, liminal, one-sided play, and regulating playfulness. Several of these categories represent not only theoretical considerations, but important practical implications for addressing playfulness in human society. Additional work should be conducted to both address how playfulness as an organization of experience can improve the human condition, and how playfulness should be addressed when it is not improving the human condition.

There are many limitations to the methods taken within this thesis. There are probably numerous conceptions of playfulness that were not identified and were not included in the final analysis. All theoretical conceptions were re-interpreted by phenomenology

and thus require an assessment about how internal reality is constructed. This model does not depict individual behaviors as playful or not and would not be insightful for such. This model also argues that playfulness may be distinctly effective at reducing accurate self-awareness. In this way, this model also problematizes the numerous self-assessments that compose it. It is my contention that the model is still relevant, as it is possible individuals are successfully identifying playfulness in themselves even if they may self-identify certain playful experiences as non-playful. In addition, there were several written works that I attempted to find and read directly that were not publicly available and I was not successful in getting a copy.

This new theoretical conception and the other findings in this thesis have large implications for future research. In future works, it would benefit modern discourses on playfulness to further explore the implications, verify the numerous predictions made, and interact directly with the ethical implications of an experiential tool that prioritizes engagement over realness, relevance, or consequence.

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APPENDIX A ORIGINAL 130 REVIEWED ARTICLES WITH DISCIPLINE AND TEXTUAL TYPE

Article Title	Field	Citation	Textual type
Playfulness: Its relationship to imagination and creativity	Psychology	*Lieberman, J. N. (2014). Playfulness: Its relationship to imagination and creativity. Academic Press.*	Type of text
Playfulness, ideas, and creativity: A survey	Biology	*Bateson, P., & Nettle, D. (2014). Playfulness, ideas, and creativity: A survey. Creativity Research Journal, 26(2), 219-222.*	Book
Well Played: The Origins and Future of Playfulness	Psychology	*Gordon, G. (2014). Well played: The origins and future of playfulness. American Journal of Play, 6(2), 234.*	article
Academic Course Gamification: The Art of Perceived Playfulness	Gamification	*Codish, D., & Ravid, G. (2014). Academic course gamification: The art of perceived playfulness. Interdisciplinary Journal of E-Learning and Learning Objects, 10(1), 131-151.*	article
Play Behavior and Playfulness in Adulthood	Psychology	*Van Vleet, M., & Feeney, B. C. (2015). Play behavior and playfulness in adulthood. Social and Personality Psychology Compass, 9(11), 630-643.*	article
Adult Playfulness, Humor Styles, and Subjective Happiness	Psychology	*Yue, X. D., Leung, C. L., & Hiranandani, N. A. (2016). Adult playfulness, humor styles, and subjective happiness. Psychological reports, 119(3), 630-640.*	article
Playfulness over the lifespan and its relation to happiness	Psychology	*Proyer, R. T. (2014). Playfulness over the lifespan and its relation to happiness. Zeitschrift für Gerontologie und Geriatrie, 47(6), 508-512.*	article
Playfulness in Adulthood as a Personality Trait	Psychology	Shen, X. S., Chick, G., & Zinn, H. (2014). Playfulness in adulthood as a personality trait: A reconceptualization and a new measurement. Journal of Leisure Research, 46(1), 58-83.	article
Playfulness in mobile instant messaging: Examining the influence of	Linguistics	Hsieh, S. H., & Tseng, T. H. (2017). Playfulness in mobile instant messaging:	article

emoticons and text messaging on social interaction		Examining the influence of emoticons and text messaging on social interaction. Computers in Human Behavior, 69, 405-414.	
An empirical examination of guests' adoption of interactive mobile technologies in hotels: Revisiting cognitive absorption, playfulness, and	HTI	*Wendy Zhu, W., & Morosan, C. (2014). An empirical examination of guests' adoption of interactive mobile technologies in hotels: Revisiting cognitive absorption, playfulness, and security. Journal of Hospitality and Tourism Technology, 5(1), 78-94.*	article
Imagination, Playfulness, and Creativity in Children's Play with Different Toys.	Education	*Møller, S. J. (2015). Imagination, Playfulness, and Creativity in Children's Play with Different Toys. American Journal of Play, 7(3).*	article
Perceived functions of playfulness in adults: Does it mobilize you at work, rest, and when being with others?	Psychology	*Proyer, R. T. (2014). Perceived functions of playfulness in adults: Does it mobilize you at work, rest, and when being with others?. Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology, 64(5), 241-250.*	article
Play and playfulness in early childhood education and care.	Early childhood education	*Singer, E. (2015). Play and playfulness in early childhood education and care. Psychology in Russia, 8(2), 27.*	article
Playfulness, play, and games: A constructionist ludology approach	Game Studies	Stenros, J. (2015). Playfulness, play, and games: A constructionist ludology approach.	article
Playfulness in Children with Limited Motor Abilities When Using a Robot security	Therapy (Occupational)	*Ríos-Rincón, A. M., Adams, K., Magill-Evans, J., & Cook, A. (2016). Playfulness in children with limited motor abilities when using a robot. Physical & occupational therapy in pediatrics, 36(3), 232-246.*	Thesis (Master's)
To Love and Play: Testing the Association of Adult Playfulness with the Relationship Personality and Relationship Satisfaction	Psychology	*Proyer, R. T. (2014). To love and play: Testing the association of adult playfulness with the relationship personality and relationship satisfaction. Current Psychology, 33(4), 501-*	article

		514.	
Decomposing perceived playfulness: A contextual examination of two social networking sites	HTI	*Hung, S. Y., Tsai, J. C. A., & Chou, S. T. (2016). Decomposing perceived playfulness: A contextual examination of two social networking sites. Information & management, 53(6), 698-716.*	article
Perceived characteristics, perceived popularity, and playfulness: Youth adoption of mobile instant messaging in China	HTI	*Lin, T. T., & Li, L. (2014). Perceived characteristics, perceived popularity, and playfulness: Youth adoption of mobile instant messaging in China. China Media Research, 10(2), 60-71.*	article
Beautiful script, cute spelling and glamorous words: Doing girlhood through language playfulness on Israeli blogs	Linguistics	*Vaisman, C. L. (2014). Beautiful script, cute spelling and glamorous words: Doing girlhood through language playfulness on Israeli blogs. Language & Communication, 34, 69-80.*	article
The influence of trust and perceived playfulness on the relationship commitment of hospitality online social network-moderating effects of gender	HTI	*Li, C. H., & Chang, C. M. (2016). The influence of trust and perceived playfulness on the relationship commitment of hospitality online social network-moderating effects of gender. International Journal of Contemporary Hospitality Management, 28(5), 924-944.*	article
Effects of Tour Guide Interpretation and Tourist Satisfaction on Destination Loyalty in Taiwan's Kinmen Battlefield Tourism: Perceived Playfulness and Perceived Flow as Moderators	Travel + Tourism	*Kuo, N. T., Chang, K. C., Cheng, Y. S., & Lin, J. C. (2016). Effects of tour guide interpretation and tourist satisfaction on destination loyalty in Taiwan's Kinmen Battlefield Tourism: perceived playfulness and perceived flow as moderators. Journal of Travel & Tourism Marketing, 33(sup1), 103-122.*	article
Playfulness in Adults Revisited: The Signal Theory in German Speakers	Psychology	*Proyer, R. T., & Wagner, L. (2015). Playfulness in Adults Revisited: The Signal Theory in German. Speakers. American Journal of Play, 7(2), 201-227*	article
Laughter at Last: Playfulness and laughter in	Pragmatics	*Holt, E. (2016). Laughter at last: playfulness and*	article

interaction		laughter in interaction. Journal of Pragmatics, 100, 89-102.	
A new structural model for the study of adult playfulness: Assessment and exploration of an understudied individual differences variable	Psychology	Proyer, R. T. (2017). A new structural model for the study of adult playfulness: Assessment and exploration of an understudied individual differences variable. Personality and Individual Differences, 108, 113-122.	article
A brain motivated to play: insights into the neurobiology of playfulness	Neurobiology	Siviy, S. M. (2016). A brain motivated to play: insights into the neurobiology of playfulness. Behaviour, 153(6-7), 819-844.	article
A Psycho-Linguistic Approach For Studying Adult Playfulness: A Replication and Extension Toward Relations With Humor	psychology	Proyer, R. T. (2014). A psycho-linguistic approach for studying adult playfulness: A replication and extension toward relations with humor. The Journal of psychology, 148(6), 717-735.	article
Detecting playfulness in educational gamification through behavior patterns	Gamification	Codish, D., & Ravid, G. (2015). Detecting playfulness in educational gamification through behavior patterns. IBM Journal of Research and Development, 59(6), 6-1.	article
Play and playfulness: Issues of assessment	Education	Carr, M. (2014). Play and playfulness: Issues of assessment. The SAGE handbook of play and learning in early childhood, 264-275.	article
"A Slow Revolution": Toward a Theory of Intellectual Playfulness in High School Classrooms	Education	Fine, S. (2014). "A Slow Revolution": Toward a Theory of Intellectual Playfulness in High School Classrooms. Harvard Educational Review, 84(1), 1-23.	chapter
Approaching Social Robots Through Playfulness and Doing-It-Yourself: Children in Action	Education	Fortunati, L., Esposito, A., Ferrin, G., & Viel, M. (2014). Approaching social robots through playfulness and doing-it-yourself: children in action. Cognitive Computation, 6(4), 789-801.	article
Preschool children's social and nonsocial play behaviours. Measurement and correlations with children's playfulness,	Education	Rentzou, K. (2014). Preschool children's social and nonsocial play behaviours. Measurement and correlations with	article

behaviour problems and demographic characteristics.		*children's playfulness, behaviour problems and demographic characteristics. Early child development and care, 184(4), 633-647.*	
Correlation patterns between pretend play and playfulness in children with autism spectrum disorder, developmental delay, and typical development	Therapy (Occupational)	*Lee, Y. C., Chan, P. C., Lin, S. K., Chen, C. T., Huang, C. Y., & Chen, K. L. (2016). Correlation patterns between pretend play and playfulness in children with autism spectrum disorder, developmental delay, and typical development. Research in Autism Spectrum Disorders, 24, 29-38.*	article
Exergames for Older Adults with Subthreshold Depression: Does Higher Playfulness Lead to Better Improvement in Depression?	game studies	*Li, J., Theng, Y. L., & Foo, S. (2016). Exergames for older adults with subthreshold depression: does higher playfulness lead to better improvement in depression?. Games for health journal, 5(3), 175-182.*	article
Effect of occupational therapy–Led playgroups in early intervention on child playfulness and caregiver responsiveness: A repeated-measures design	Therapy (Occupational)	*Fabrizi, S. E., Ito, M. A., & Winston, K. (2016). Effect of occupational therapy–Led playgroups in early intervention on child playfulness and caregiver responsiveness: A repeated-measures design. American Journal of Occupational Therapy, 70(2), 700220020p1-700220020p9.*	article
Playfulness and humor in psychology: an overview and update	Psychology	*Proyer, René T. "Playfulness and humor in psychology: an overview and update." Humor 31.2 (2018): 259-271.*	article
THE MAGIC OF PLAY: LOW-INCOME MOTHERS' AND FATHERS' PLAYFULNESS AND CHILDREN'S EMOTION REGULATION AND VOCABULARY SKILLS	Psychology	*Cabrera, N. J., Karberg, E., Malin, J. L., & Aldoney, D. (2017). THE MAGIC OF PLAY: LOW-INCOME MOTHERS'AND FATHERS'PLAYFULNESS AND CHILDREN'S EMOTION REGULATION AND VOCABULARY SKILLS. Infant mental health journal, 38(6), 757-771.*	article
The Effects of Emoticons and Text-Messaging on Social Interaction:	information systems	*Hsieh, Sara H., and Timmy H. Tseng. "The Effects of Emoticons and Text-*	article

Playfulness in Mobile Instant Messaging.		*Messaging on Social Interaction: Playfulness in Mobile Instant Messaging." PACIS. 2015.*	
Viral promotional advergames: how intrinsic playfulness and the extrinsic value of prizes elicit behavioral responses	marketing	*Zhao, Z., & Renard, D. (2018). Viral promotional advergames: How intrinsic playfulness and the extrinsic value of prizes elicit behavioral responses. Journal of Interactive Marketing, 41, 94-103.*	article (conference)
Conceptualizing playfulness for reflection processes in responsible research and innovation contexts: a narrative literature review	RRI (responsible Research and Innovation	*van der Meij, M. G., Broerse, J. E., & Kupper, F. (2017). Conceptualizing playfulness for reflection processes in responsible research and innovation contexts: a narrative literature review. Journal of Responsible Innovation, 4(1), 43-63.*	article
Building material: Exploring playfulness of 3D printers	HTI	*de Smale, S. (2014). Building material: Exploring playfulness of 3D printers. Transactions of the Digital Games Research Association, 1(3).*	article
Play matters: the surprising relationship between juvenile playfulness and anxiety in later life	Biology	*Richter, S. H., Kästner, N., Kriwet, M., Kaiser, S., & Sachser, N. (2016). Play matters: the surprising relationship between juvenile playfulness and anxiety in later life. Animal Behaviour, 114, 261-271.*	article (conference)
Creativity and playfulness: Producing games as a pedagogical strategy.	Education	*Ejsing-Duun, S., & Karoff, H. S. (2015, October). Creativity and playfulness: Producing games as a pedagogical strategy. In The 9th European Conference on Games Based Learning ECGBL 2015European Conference on Games Based Learning (pp. 171-177). Academic Conferences and Publishing International.*	article
Exploring adult Playfulness: Examining the accuracy of personality judgments at zero-acquaintance and an LIWC analysis of textual information	Psychology	*Proyer, R. T., & Brauer, K. (2018). Exploring adult playfulness: examining the accuracy of personality judgments at zero-acquaintance and an LIWC analysis of textual information. Journal of Research in Personality, 73, 12-20.*	article (conference)

Creativity and playfulness in Higher Education research	education	*Brown, N., & Leigh, J. (2018). Creativity and playfulness in Higher Education research. In Theory and Method in Higher Education Research (pp. 49-66). Emerald Publishing Limited.*	article
Mother–child and father–child play interaction: The importance of parental playfulness as a moderator of the links between parental behavior and child negativity	psychology	*Menashe-Grinberg, A., & Atzaba-Poria, N. (2017). Mother–child and father–child play interaction: The importance of parental playfulness as a moderator of the links between parental behavior and child negativity. Infant mental health journal, 38(6), 772-784.*	article
The longitudinal association between playfulness and resilience in older women engaged in the red hat society	psychology	*Chang, P. J., Yarnal, C., & Chick, G. (2016). The longitudinal association between playfulness and resilience in older women engaged in the red hat society. Journal of Leisure Research, 48(3), 210-227.*	article
Context-dependent individual differences in playfulness in male rats	biology	*Lampe, J. F., Burman, O., Würbel, H., & Melotti, L. (2017). Context-dependent individual differences in playfulness in male rats. Developmental psychobiology, 59(4), 460-472.*	article
Promoting collaborative relationships in residential care of vulnerable and traumatized youth: a playfulness approach integrated with trauma systems therapy	Therapy (Trauma)	*Hidalgo, J., Maravić, M. C., Milet, R. C., & Beck, J. C. (2016). Promoting collaborative relationships in residential care of vulnerable and traumatized youth: a playfulness approach integrated with trauma systems therapy. Journal of Child & Adolescent Trauma, 9(1), 17-28.*	article
Are Impostors playful? Testing the association of adult playfulness with the Impostor Phenomenon	Psychology	*Brauer, K., & Proyer, R. T. (2017). Are Impostors playful? testing the association of adult playfulness with the impostor phenomenon. Personality and Individual Differences, 116, 57-62.*	article
Dissecting playfulness for practical design	Gamification	*Holopainen, J., & Stain, M. (2015). Dissecting playfulness for practical design. The Gameful*	article

		World: Approaches, Issues, Applications, 419.	
Playfulness and creativity: a selective review	Psychology	*Proyer, R. T., Tandler, N., & Brauer, K. (2019). Playfulness and creativity: a selective review. In Creativity and Humor (pp. 43-60). Academic Press.*	chapter
Playfulness and prenatal alcohol exposure: A comparative study	Therapy (Occupational)	*Pearton, J. L., Ramugondo, E., Cloete, L., & Cordier, R.(2014). Playfulness and prenatal alcohol exposure: A comparative study. Australian occupational therapy journal, 61(4), 259-267.*	chapter
Therapists' honesty, humor styles, playfulness, and creativity as outcome predictors: A retrospective study of the therapist effect	Therapy (psychotherapy)	*Yonatan-Leus, R., Tishby, O., Shefler, G., & Wiseman, H. (2018). Therapists' honesty, humor styles, playfulness, and creativity as outcome predictors: A retrospective study of the therapist effect. Psychotherapy Research, 28(5), 793-802.*	Master's Thesis
Measuring the playfulness of children with special needs in occupational therapist led, caregiver-included community playgroups	Therapy (Occupational)	Fabrizi, S. (2014). Measuring the playfulness of children with special needs in occupational therapist led, caregiver-included community playgroups.	article
Theory of Mind Deficit Is Associated with Pretend Play Performance, but Not Playfulness, in Children with Autism Spectrum Disorder	Therapy (Occupational)	*Chan, P. C., Chen, C. T., Feng, H., Lee, Y. C., & Chen, K. L. (2016). Theory of Mind Deficit Is Associated with Pretend Play Performance, but Not Playfulness, in Children with Autism Spectrum Disorder. Hong Kong Journal of Occupational Therapy, 28(1), 43-52.*	dissertation
A comparison of playfulness of young children with and without autism spectrum disorder in interactions with their mothers and teachers	Therapy (Occupational)	*Pinchover, S., Shulman, C., & Bundy, A. (2016). A comparison of playfulness of young children with and without autism spectrum disorder in interactions with their mothers and teachers. Early Child Development and Care, 186(12), 1893-1906.*	article
Dewey on Seriousness, Playfulness and the Role of the Teacher	Education	*Skilbeck, A. (2017). Dewey on Seriousness, Playfulness and the Role of the Teacher. Education Sciences, 7(1), 16.*	article

An examination of innovative consumers' playfulness on their pre-ordering behavior	Marketing	*Byun, K. A., Dass, M., Kumar, P., & Kim, J. (2017). An examination of innovative consumers' playfulness on their pre-ordering behavior. Journal of Consumer Marketing, 34(3), 226-240.*	article
Play and playfulness	Therapy (Occupational)	*O'BRIEN, J. C., & DUREN, G. J. (2014). Play and playfulness. Pediatric Skills for Occupational Therapy Assistants-E-Book, 390.*	article
A love for mathematical playfulness as a key ingredient of mathematical knowledge for teaching	education	*Graven, M., & Schafer, M. (2014). A love for mathematical playfulness as a key ingredient of mathematical knowledge for teaching. Exploring Mathematics and Science Teachers' Knowledge: Windows into teacher thinking, 163.*	Chapter
Is play easier for children with physical impairment with mainstream robots? Accessibility issues and playfulness	HTI	Besio, S., Bonarini, A., Bulgarelli, D., Carnesecchi, M., Riva, C., & Veronese, F. (2016). Is play easier for children with physical impairment with mainstream robots? Accessibility issues and playfulness. In Proceeding of the Conference Universal Learning Design (Vol. 5, pp. 97-107).	chapter
Towards resilience and playfulness: the negotiation of indigenous Australian identities in twentieth-century Aboriginal narratives	Literature analysis	*Alber, J. (2016). Towards resilience and playfulness: the negotiation of indigenous Australian identities in twentieth-century Aboriginal narratives. European Journal of English Studies, 20(3), 292-309.*	article (cfp)
From playful parents to adaptable children: a structural equation model of the relationships between playfulness and adaptability among young adults and their parents	psychology	*Shen, X., Chick, G., & Pitas, N. A. (2017). From playful parents to adaptable children: a structural equation model of the relationships between playfulness and adaptability among young adults and their parents. International Journal of Play, 6(3), 244-254.*	article
Many splendored things: Sexuality, playfulness and play	sex	Paasonen, S. (2018). Many splendored things: Sexuality, playfulness and	article

		play. Sexualities, 21(4), 537-551.	
Play and playfulness in psychiatry: a selective review	psychiatry	*Berger, P., Bitsch, F., Bröhl, H., & Falkenberg, I. (2018). Play and playfulness in psychiatry: a selective review. International Journal of Play, 7(2), 210-225.*	article
The inculcation of adult playfulness: from west to east	psychology	*Barnett, L. A. (2017). The inculcation of adult playfulness: from west to east. International Journal of Play, 6(3), 255-271.*	article
The relation between teachers' and children's playfulness: a pilot study	Education	*Pinchover, S. (2017). The relation between teachers' and children's playfulness: a pilot study. Frontiers in psychology, 8, 2214.*	article
Playfulness as a peculiar expression of sexual relationships (semantic interpretation of the results of the psycholinguistic experiment)	sex	*Gordienko-Mytrofanova, I. V., & Sauta, S. L. (2016). Playfulness as a peculiar expression of sexual relationships (semantic interpretation of the results of the psycholinguistic experiment). European Humanities Studies: State and Society, 1, 46-62.*	article
Child's sensory profile and adult playfulness as predictors of parental self-efficacy	Therapy (Occupational)	*Román-Oyola, R., Reynolds, S., Soto-Feliciano, I., Cabrera-Mercader, L., & Vega-Santana, J. (2017). Child's sensory profile and adult playfulness as predictors of parental self-efficacy. American Journal of Occupational Therapy, 71(2), 7102220010p1-7102220010p8.*	article
Linking concepts of playfulness and well-being at work in retail sector	marketing	*Alatalo, S., Oikarinen, E. L., Reiman, A., Tan, T. M., Heikka, E. L., Hurmelinna-Laukkanen, P., ... & Vuorela, T. (2018). Linking concepts of playfulness and well-being at work in retail sector. Journal of Retailing and Consumer Services, 43, 226-233.*	article
Lotman and play: For a theory of playfulness based on semiotics of culture	semiotics	*Thibault, M. (2016). Lotman and play: For a theory of playfulness based on semiotics of culture. Σημειωτκή-Sign Systems Studies, 44(3), 295-325.*	article
Beyond the Ludic Lover:	sex	*Proyer, R. T., Brauer, K.,*	thesis

Individual Differences in Playfulness and Love Styles in Heterosexual Relationships.		*Wolf, A., & Chick, G. (2018). Beyond the Ludic Lover: Individual Differences in Playfulness and Love Styles in Heterosexual Relationships. American Journal of Play, 10(3), 265-289.*	
Let's Stitch Me and You Together!: Designing a Photo Co-creation Activity to Stimulate Playfulness in the Workplace.	HTI	*Lu, D., Dugan, C., Farzan, R., & Geyer, W. (2016, May). Let's Stitch Me and You Together!: Designing a Photo Co-creation Activity to Stimulate Playfulness in the Workplace. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (pp. 3061-3065). ACM.*	article
Exploring the playfulness of tools for co-designing smart connected devices: A case study with blind and visually impaired students	HTI	*Bischof, A., Lefeuvre, K., Kurze, A., Storz, M., Totzauer, S., & Berger, A. (2016, October). Exploring the playfulness of tools for co-designing smart connected devices: A case study with blind and visually impaired students. In Proceedings of the 2016 Annual Symposium on Computer-Human Interaction in Play Companion Extended Abstracts (pp. 93-99). ACM.*	article (conference)
A multidisciplinary perspective on adult play and playfulness	Multi-disciplinary meta-review	Proyer, R. T. (2017). A multidisciplinary perspective on adult play and playfulness.	article (conference)
The playfulness of 'new'Chinglish	Linguistics	*Xu, Z., & Deterding, D. (2017). The playfulness of 'new'Chinglish. Asian Englishes, 19(2), 116-127.*	article
Serendipitous insights and Kairos playfulness	Philosophy	*van Manen, M. (2018). Serendipitous insights and Kairos playfulness. Qualitative Inquiry, 24(9), 672-680.*	article
Fostering team creativity and innovativeness with playfulness: a multi-case study	Innovation	*Nisula, A. M., Kallio, A., Oikarinen, T., & Kianto, A. (2014). Fostering team creativity and innovativeness with playfulness: a multi-case study. International Journal of Innovation and Learning, 17(1), 79-97.*	article
An Exploration of	Management	*Mekky, S., & Lucero, A.*	article

Designing for Playfulness in a Business Context		*(2016, May). An Exploration of Designing for Playfulness in a Business Context. In Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems (pp. 3136-3143). ACM.*	
Validating the adult playfulness trait scale (APTS): an examination of personality, nomological Network of Playfulness	psychology	*Shen, X. S., Chick, G., & Zinn, H. (2014). Validating the adult playfulness trait scale (APTS): an examination of personality, nomological Network of Playfulness. Am J Play, 6, 345-69.*	article
The playfulness of Facebook–Shaped by underlying psychological drivers and gender differences	HTI	*Rodríguez-Ardura, I., & Meseguer-Artola, A. (2018). The playfulness of Facebook–Shaped by underlying psychological drivers and gender differences. Telematics and Informatics, 35(8), 2254-2269.*	article
Depression and playfulness in fathers and young infants: A matched design comparison study	psychology	*Sethna, V., Murray, L., Edmondson, O., Iles, J., & Ramchandani, P. G. (2018). Depression and playfulness in fathers and young infants: A matched design comparison study. Journal of affective disorders, 229, 364-370.*	article
Playfulness, parody, and carnival: Catchphrases and mood on the Chinese Internet from 2003 to 2015	linguistics	*Guo, M. (2018). Playfulness, parody, and carnival: Catchphrases and mood on the Chinese Internet from 2003 to 2015. Communication and the Public, 3(2), 134-150.*	article
Using EEG frontal asymmetry to predict IT user's perceptions regarding usefulness, ease of use and playfulness	HTI	*Moridis, C. N., Terzis, V., Economides, A. A., Karlovasitou, A., & Karabatakis, V. E. (2018). Using EEG frontal asymmetry to predict IT user's perceptions regarding usefulness, ease of use and playfulness. Applied psychophysiology and biofeedback, 43(1), 1-11.*	article
Adult playfulness and its relationship with humor, subjective happiness and depression: A comparative	psychology	Leung, C. L. R. (2014). Adult playfulness and its relationship with humor, subjective happiness and	article

study of Hong Kong and mainland China		depression: A comparative study of Hong Kong and mainland China.	
Gender and regional differences in creativity: A comparative study on playfulness and humor in postgraduate students between Mainland China and Taiwan	psychology	*Luo, L., Zhou, C., & Zhang, S. (2016). Gender and regional differences in creativity: A comparative study on playfulness and humor in postgraduate students between Mainland China and Taiwan. NASPA Journal About Women in Higher Education, 9(2), 208-229.*	thesis (bachelors)
Playful or Gameful? Creating delightful user experiences."	game studies	*Lucero, A., Karapanos, E., Arrasvuori, J., & Korhonen, H. (2014). Playful or Gameful? Creating delightful user experiences. interactions, 21(3), 34-39.*	article
Healthy aging is reflected in well-being, participation, playfulness, and cognitive-emotional functioning	Therapy (Occupational)	*Waldman-Levi, A., Erez, A. B. H., & Katz, N. (2015). Healthy aging is reflected in well-being, participation, playfulness, and cognitive-emotional functioning. Healthy Aging Research, 4, 1-7.*	article
Towards Playful and Playable Cities	Game studies	*Nijholt, A. (2017). Towards playful and playable cities. In Playable Cities (pp. 1-20). Springer, Singapore.*	article
Playful Game Jams: Guidelines for Designed Outcomes	Game studies	Goddard, W., Byrne, R., & Mueller, F. F. (2014, December). Playful game jams: guidelines for designed outcomes. In Proceedings of the 2014 Conference on Interactive Entertainment (pp. 1-10).	chapter
Envisioning Future Playful Interactive Environments for Animals	Animal computer interaction	*Pons, P., Jaen, J., & Catala, A. (2015). Envisioning future playful interactive environments for animals. In More Playful User Interfaces (pp. 121-150). Springer, Singapore.*	article
Adult playfulness and relationship satisfaction: An APIM analysis of romantic couples	Psychology	*Proyer, R. T., Brauer, K., Wolf, A., & Chick, G. (2019). Adult playfulness and relationship satisfaction: An APIM analysis of romantic couples. Journal of Research in Personality, 79, 40-48.*	article

Who cares about the Content?An Analysis of PlayfulBehaviourat a Public Display	Interaction Design	*Tomitsch, M., Ackad, C., Dawson, O., Hespanhol, L., & Kay, J. (2014, June). Who cares about the content? An analysis of playful behaviour at a public display. In Proceedings of The International Symposium on Pervasive Displays (pp. 160-165).*	article
Playful Behavior	Marine biology	*Würsig, B. (2018). Playful behavior. In Encyclopedia of marine mammals (pp. 741-743). Academic Press.*	article
Teachers' engagement and students' satisfaction with a playfullearning environmen	Education	*Kangas, M., Siklander, P., Randolph, J., & Ruokamo, H. (2017). Teachers' engagement and students' satisfaction with a playful learning environment. Teaching and Teacher Education, 63, 274-284.*	article
PLEXQ: Towards a playful experiences questionnaire	HTI	*Boberg, M., Karapanos, E., Holopainen, J., & Lucero, A. (2015, October). PLEXQ: Towards a playful experiences questionnaire. In Proceedings of the 2015 Annual Symposium on Computer-Human Interaction in Play (pp. 381-391).*	article
AnimalLudens:BuildingIntelligentPlayfulEnvironmentsforAnimals	Animal computer interaction	*Pons, P., Jaen, J., & Catala, A. (2014, November). Animal ludens: building intelligent playful environments for animals. In Proceedings of the 2014 Workshops on Advances in Computer Entertainment Conference (pp. 1-6).*	article
WHY FUN MATTERS: IN SEARCH OF EMERGENT PLAYFUL EXPERIENCES	Gamification	*Fizek, S. (2014). Why fun matters: in search of emergent playful experiences. In Rethinking gamification (pp. 273-287). meson press.*	article
The Positive Relationships of Playfulness With Indicators of Health, Activity, and Physical Fitness	Psychology	*Proyer, R. T., Gander, F., Bertenshaw, E. J., & Brauer, K. (2018). The positive relationships of playfulness with indicators of health, activity, and physical fitness. Frontiers in psychology, 9, 1440.*	article
Mood Squeezer: Lightening up the Workplace through Playful and Lightweight	Gamification	*Gallacher, S., O'Connor, J., Bird, J., Rogers, Y., Capra, L., Harrison, D., &*	article

Interactions		*Marshall, P. (2015, February). Mood squeezer: lightening up the workplace through playful and lightweight interactions. In Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing (pp. 891-902).*	
A Glimpse into Co-Occupations: Parent/Caregiver'sSupport of Young Children's Playfulness Scale	Therapy (Occupational)	*Waldman-Levi, A., & Bundy, A. (2016). A Glimpse into Co-Occupations: Parent/Caregiver's Support of Young Children's Playfulness Scale. Occupational Therapy in Mental Health, 32(3), 217-227.*	article (conference)
Online gaming and playful organization.	Management research	*Warmelink, H. (2014). Online gaming and playful organization. Routledge.*	article
12 Museums as playful venues in the leisure society	Tourism research	*Taheri, B., & Jafari, A. (2014). 12 Museums as playful venues in the leisure society. Contemporary Tourist Experience: Concepts and Consequences, 27, 201-215.*	book
Playful teaching and learning	education	*Walsh, G., McMillan, D., & McGuinness, C. (Eds.). (2017). Playful teaching and learning. Sage.*	article
Play, Playfulness, and Self-Efficacy: Parental Experiences with Children on the Autism Spectrum	Therapy (Occupational)	*Román-Oyola, R., Figueroa-Feliciano, V., Torres-Martínez, Y., Torres-Vélez, J., Encarnación-Pizarro, K., Fragoso-Pagán, S., & Torres-Colón, L. (2018). Play, Playfulness, and Self-Efficacy: Parental Experiences with Children on the Autism Spectrum. Occupational therapy international, 2018.*	book
Creativity in Hong Kong classrooms: Transition from a seriously formal pedagogy to informally playful learning	education	*Hui, A. N., Chow, B. W., Chan, A. Y., Chui, B. H., & Sam, C. T. (2015). Creativity in Hong Kong classrooms: Transition from a seriously formal pedagogy to informally playful learning. Education 3-13, 43(4), 393-403.*	article
Playful learning: tools, techniques, and tactics	education	*Whitton, N. (2018). Playful learning: tools, techniques,*	article

		and tactics. Research in Learning Technology, 26.	
A theoretical framework of playful interaction in mobile learning.	HTI	*Taharim, N. F., Lokman, A. M., Isa, W. A. R. W. M., & Noor, N. L. M. (2014, September). A theoretical framework of playful interaction in mobile learning. In 2014 Eighth International Conference on Next Generation Mobile Apps, Services and Technologies (pp. 19-23). IEEE.*	article
Playful talk: Negotiating opportunities to learn in collaborative groups	education	*Sullivan, F. R., & Wilson, N. C. (2015). Playful talk: Negotiating opportunities to learn in collaborative groups. Journal of the Learning Sciences, 24(1), 5-52.*	article (conference)
Do arts subjects matter for secondary school students' wellbeing? The role of creative engagement and playfulness	Education	*Clarke, T., & Basilio, M. (2018). Do arts subjects matter for secondary school students' wellbeing? The role of creative engagement and playfulness. Thinking Skills and Creativity, 29, 97-114.*	article
Structure and analogy in the playful lexicon of Spanish.	linguistics	*Pharies, D. A. (2015). Structure and analogy in the playful lexicon of Spanish (Vol. 210). Walter de Gruyter GmbH & Co KG.*	article
Playful and multi-sensory fieldwork: Seeing, hearing and touching New York.	Geography	*Phillips, R. (2015). Playful and multi-sensory fieldwork: Seeing, hearing and touching New York. Journal of Geography in Higher Education, 39(4), 617-629.*	book
Does play have to be playful.	Psychology	*Barnett, L., & Owens, M. (2015). Does play have to be playful. The handbook of the study of play, 453-459.*	article
Enhancing Teaching English as an Additional Language Through Playfulness: Seniors (Ethno) Drama Club in Vancouver's Downtown Eastside.	Education	*Balyasnikova, N., Higgins, S., & Hume, M. (2018). Enhancing Teaching English as an Additional Language Through Playfulness: Seniors (Ethno) Drama Club in Vancouver's Downtown Eastside. TESOL Journal, 9(3), 481-497.*	Chapter of book
Sites of playful engagement: Twitter	Information Technology	*Tully, M., & Ekdale, B. (2014). Sites of playful*	article

hashtags as spaces of leisure and development in Kenya		*engagement: Twitter hashtags as spaces of leisure and development in Kenya. Information Technologies & International Development, 10(3), pp-67.*	
Make-believe in gameful and playful design	Gamification	*Deterding, S. (2016). Make-believe in gameful and playful design. In Digital make-believe (pp. 101-124). Springer, Cham.*	article
Playful Information Literacy: Play and Information Literacy in Higher Education	Information Literacy	*Walsh, A. (2015). Playful information literacy: play and information literacy in higher education. Nordic journal of information literacy in higher education, 7(1), 80-94.*	Chapter
RBox: A Virtual Reality Augmented Sandbox for Immersive Playfulness, Creativity and Exploration	HTI	*Fröhlich, T., Alexandrovsky, D., Stabbert, T., Döring, T., & Malaka, R. (2018, October). VRBox: A Virtual Reality Augmented Sandbox for Immersive Playfulness, Creativity and Exploration. In Proceedings of the 2018 Annual Symposium on Computer-Human Interaction in Play (pp. 153-162).*	article
A Playful Path	Game studies	*De Koven, B. (2014). A playful path. Lulu. com.*	book
Hand i Pockets: Creativity, playfulness and fun	Therapy	*Killick, J., & Kenning, G. (2015). Hand i Pockets: Creativity, playfulness and fun. Journal of Dementia Care.*	article (conference)
Playfulness and the co-construction of identity in the first years	Psychology	*Parker-Rees, R. (2014). Playfulness and the co-construction of identity in the first years. The SAGE Handbook of play and learning in early childhood. Los Angeles/London: SAGE, 366-377.*	article
Playfulness in adults: an examination of play and playfulness and their implications for coaching	Coaching	*Lockwood, R., & O'Connor, S. (2017). Playfulness in adults: an examination of play and playfulness and their implications for coaching. Coaching: An International Journal of Theory, Research and Practice, 10(1), 54-65.*	chapter
Promoting playfulness in	Innovation	*Regalado, C. (2015).*	article

publicly initiated scientific research: For and beyond times of crisis		*Promoting playfulness in publicly initiated scientific research: For and beyond times of crisis. International Journal of Play, 4(3), 275-284.*	
The playful city: using play and games to foster citizen participation.	Urban studies	De Lange, M. (2015). The playful city: using play and games to foster citizen participation.	article
Playful computer interaction	HTI	*Cermak-Sassenrath, D. (2015). 4. Playful computer interaction. Playful Identities, 93.*	chapter
Play matters	Game studies	*Playfulness. (2014). In Play Matters. Cambridge, Massachusetts; London, England: The MIT Press.*	chapter
The Routledge companion to video game studies	Game studies	*Wolf, M., & Perron, B. (2014). The Routledge companion to video game studies . Hoboken: Taylor and Francis.*	book
On Learning, Playfulness, and Becoming Human.	Philosophy	*An, C. (2018). On Learning, Playfulness, and Becoming Human. Philosophy, 93(1), 3–29. https://doi.org/10.1017/S0031819117000547*	book
The Use of Humor, Jesting, and Playfulness With Traumatized Elderly	therapy	*Monahan, K. (2015). The Use of Humor, Jesting, and Playfulness With Traumatized Elderly. Social Work in Mental Health, 13(1), 17–29. https://doi.org/10.1080/15332985.2014.899943*	article
Playfulness and Creativity	Biology	*Bateson, P. (2015). Playfulness and creativity. Current Biology, 25(1), R12–R16. doi:10.1016/j.cub.2014.09.009*	article

APPENDIX B 65 CONCEPTIONS OF PLAYFULNESS BY METHODOLOGY

	Conception Source	Number of citations in sample	Theoretical Direction	ludicism	Scope	Methodology
1	Bundy et al. (2001)	11	Top-down	Paidic (slight)	State of Mind (slight)	Videos
2	Barnett (2007)	10	Bottom-up	Paidic	Personality Trait	Focus Groups
3	Moon & Kim (2001)	8	Mixed (T-D and B-P)	Ludic	State of Mind and Context of Interaction	Statistical analysis
4	Proyer (2017b)	8	Bottom-up	Paidic	Personality Trait	Psycho-linguistics, Literature Review
5	Shen, Chick, & Zinn (2014a)	4	Top-down	Paidic	Personality Trait	Literature Review
6	Caillois & Barash (2001)	4	Top-down	Ludic and Paidic	State of Mind	Argument
7	Lieberman (2014)	4	Mix	Paidic (slight)	Personality Trait	Observation
8	Gordon (2014)	3	Top-down	Paidic	Personality Trait	Literature Review
9	Arrasvuori et al. (2011)	3	Top-down	Paidic	State of Mind	Argument (expert opinion)
10	Sicart (2014)	3	Top-down	Paidic	State of Mind	Argument
11	Huizinga (2002)	3	Top-down	Ludic	State of Mind	Argument
12	Byun et al. (2017)	2	Mix	Ludic (slight)	State of Mind and Context of Interaction	Interviews
13	Atzaba-Poria et al. (2014)	2	Top-down	Paidic	State of Mind	Videos
14	Kerr & Apter (1991)	2	Top-down	Paidic (slight)	State of Mind	Argument
15	Schaefer & Greenberg (1997)	2	Bottom-up	Paidic	Personality Trait	Focus Groups
16	Pons, Jaen, & Catala (2014)	2	Top-down	Ludic	Context of Interaction	Argument
17	Csíkszentmihályi, M. (1975a)	2	Bottom-up	Ludic	State of Mind	Interviews
18	Webster & Martocchio (1992)	2	Top-down	Paidic	State of Mind	Statistical analysis
19	Bateson,	2	Top-down	Paidic	State of Mind	Argument

	Bateson, & Martin (2013)					
20	Sutton-Smith (2009)	2	Top-down	Paidic	State of Mind	Argument
21	Chick, Yarnal, & Purrington (2012)	1	Bottom-up	Paidic	Personality Trait	Statistical analysis
22	Mathwick, Malhotra, & Rigdon (2001)	1	Top-down	Ludic	Context of Interaction	Statistical analysis
23	Yarnal & Qian (2011)	1	Bottom-up	Paidic	Personality Trait	Focus Groups
24	Sanderson (2010)	1	Top-down	Ludic	State of Mind	Argument
25	Dewey (1923)	1	Top-down	Paidic	State of Mind	Argument (expert opinion)
26	Glynn & Webster (1992)	1	Top-down	Paidic	Personality Trait	Statistical analysis
27	Guitard, Ferland, & Dutil (2005)	1	Bottom-up	Paidic	Personality Trait (though it says state of mind?)	Interviews
28	Lotman (2011)	1	Top-down	Ludic	State of Mind	Argument
29	West & Shiu (2014)	1	Top-down	Ludic	State of Mind	Argument
30	Crystal (1996)	1	Top-down	Ludic	Artifact	Argument
31	Luo, Zhou, & Zhang, (2016)	1	UNCLEAR	Paidic	Personality Trait	UNKNOWN
32	Zimmerman (2008)	1	Top-down	Ludic	Personality Trait	Argument
33	Craft et al. (2013)	1	Bottom-up	Paidic	State of Mind	Observation
34	Vygotsky (1980)	1	Top-down	Ludic	State of Mind	Argument
35	Whitton (2012)	1	Top-down	Paidic	Context of interaction	Argument
36	Suits (2018)	1	Top-down	Ludic	State of Mind	Argument
37	Youell (2008)	1	Top-down	Paidic	State of Mind	Argument
38	Lester & Russell (2008)	1	Top-down	Paidic	State of Mind	Argument
39	Ejsing-Duun & Karoff (2015)	1	Top-down	Paidic	State of Mind	Argument
40	Van Vleet & Feeney (2015)	1	Top-down	Paidic	State of Mind	Argument
41	Møller (2015)	1	Bottom-up	Paidic	State of Mind	Observation
42	Singer (2015)	1	Top-down	Ludic (slight)	State of Mind	Argument
43	Stenros (2015)	1	Top-down	Paidic	State of Mind	Argument
44	Kuo et al. (2016)	1	Top-down	Ludic (slight)	Context of interaction	Literature Review / argument

45	Holt (2016)	1	Bottom-up	Ludic	State of Mind	lexical analysis
46	Fine (2014)	1	Top-down	Paidic	Context of interaction	Argument
47	Brown & Leigh (2018)	1	Top-down	Paidic	State of Mind	Argument
48	Van der Meij, Broerse, & Kupper (2017)	1	Top-down	Paidic	State of Mind	Argument
49	Holopainen & Stain (2015)	1	Top-down	Paidic	State of Mind	Literature Review
50	Graven & Schafer (2014)	1	Top-down	Paidic	State of Mind	Literature Review
51	Paasonen (2018)	1	Top-down	Ludic	State of Mind	Argument
52	Gordienko-Mytrofanova & Sauta (2016)	1	Bottom-up	Paidic	State of Mind	Psycho-linguistics
53	Van Manen (2018)	1	Top-down	Paidic	State of Mind	Argument
54	Sethna et al. (2018)	1	Top-down	Paidic	Context of interaction	Argument
55	Guo (2018)	1	Bottom-up	Ludic	Artifact	lexical analysis
56	Goddard, Byrne, & Mueller (2014)	1	Top-down	Ludic (slight)	Context of interaction	Argument
57	Würsig (2018)	1	Top-down	Paidic	State of Mind	Argument
58	Boberg et al. (2015)	1	Top-down	Paidic	State of Mind	Statistical analysis
59	Warmelink (2014)	1	Top-down	Paidic	Context of interaction	Argument
60	Walsh, McMillan, & McGuinness (2017)	1	Top-down	Paidic	Personality Trait	Literature Review / Argument
61	Taharim et al. (2014)	1	Top-down	Ludic (slight)	Context of interaction	Literature Review / Argument
62	Pharies (2015)	1	Top-down	Ludic	Artifact	Argument
63	De Koven (2014)	1	Top-down	Paidic	State of Mind	Argument
64	An (2018)	1	Top-down	Ludic	State of Mind	Argument
65	Lockwood & O'Connor (2017)	1	Top-down	Paidic	State of Mind	Argument

APPENDIX C 65 CONCEPTIONS OF PLAYFULNESS BY THEME AND QUOTATION

	Conception Source	Theme	Quotation
1	Bundy et al. (2001)	Non-real	Play is a transaction between the child and the environment that is intrinsically motivated, internally controlled, and not bound by objective reality, acknowledging that it is not always possible for children to be in complete control of their environments or to determine their own reality fully. Play is considered to be a continuum of behaviors that are more or less playful depending on the degree to which the criteria are present" (p. 277)
2	Barnett (2007)	Reframe (Design)	Predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humor, and/or entertainment (p. 955)
3	Moon & Kim (2001)	Engagement (Immersion)	We consider playfulness as an intrinsic belief or motive, which is shaped from the individual's experiences with the environment. More specifically, we examine it as an intrinsic salient belief that is formed from the individual's subjective experience with the WWW. Therefore, individuals who have more positive playfulness belief in the WWW should view its interactions more positively than those who interact less playfully. On the basis of the Csikszentimihalyi's and Deci's works, we define three dimensions of perceived playfulness: the extent to which the individual (a) perceives that his or her attention is focused on the interaction with the WWW; (b) is curious during the interaction; and (c) finds the interaction intrinsically enjoyable or interesting. (p. 219)
4	Proyer (2017b)	Reframe (Design)	Playfulness is an individual differences variable that allows people to frame or reframe everyday situations in a way such that they experience them as entertaining, and/or intellectually stimulating, and/or personally interesting. (P. 8)
5	Shen, Chick, & Zinn (2014)	Reframe (Design)	We define playfulness as a personality trait that underlies the individual's tendency to be intrinsically motivated, with a clear fun orientation, and to engage oneself spontaneously in an unconstrained manner. Specifically, the trait consists of three interconnected motivational and (nonmotivational) cognitive qualities: (a) a strong fun-seeking motivation that drives the individual to actively derive fun from his or her internal and/or external environment; (b) uninhibitedness, an ability to subdue potentially constraining situational factors and create a free, uninhibited mental state; and (c) spontaneity, a mental propensity to respond promptly without deep thought or premeditation (P. 68)
6	Caillois & Barash (2001)	Non-real	At one extreme an almost indivisible principle, common to diversion, turbulence, free improvisation, and carefree gaiety is dominant. It manifests a kind of uncontrolled fantasy that can be designated by the term paidia. At the opposite extreme, this frolicsome and impulsive exuberance is almost entirely absorbed or disciplined by a

			complementary, and in some respects inverse, tendency to its anarchic and capricious nature: there is a growing tendency to bind it with arbitrary, imperative, and purposely tedious conventions, to oppose it still more by ceaselessly practicing the most embarrassing chicanery upon it, in order to make it more uncertain or attaining its desired effect. This latter principle is completely impractical, even though it requires an ever greater amount of effort, patience, skill, or ingenuity. I call this second component ludus. (p. 13)
7	Lieberman (2014)	Re-ordered	the process of recombining facts already known (p. 83)
8	Gordon (2014)	Openness (sensitivity)	"Securely attached children expect the world to be friendly and adventures to be enriching. They have a basic sense that the world is safe, which makes play possible. For these children, ambiguity and uncertainty present excitement and stimulate exploration. They view strangers as potential playmates and new environments as potential playgrounds." (P. 246) Because I suggest in this article that playfulness is not a personality trait or a temporary state, but a characteristic of healthy development and well-being, I propose that the lucky child might have a chance to develop into a playful adult regardless of her personality. (p.248) "Beginning in the first year of life, play becomes an infant's primary mode for engaging with others and with the world, setting the bar for interactions with the world to be as pleasurable as play throughout the life-span. Attuned play encourages a child to grow up to be a playful adult who experiences life as a playground. This is not only an expression of healthy development, it is also an inherent characteristic of Homo sapiens." (P. 257)
9	Arrasvuori et al. (2011)	Openness (sensitivity)	From the design perspective, we approach playful experience as spontaneous enjoyment arising from an action (p.4)
10	Sicart (2014)	Engagement (Immersion)	We want our modern lives to be dynamic, engaging, and full of the expressive capacities of play. But we also want them to be effective, performative, serious, and valuable. We need play, but not all of it— just what attracts us, what makes us create and perform and engage, without the encapsulated singularity of play. What we want is the attitude of play without the activity of play. We need to take the same stance toward things, the world, and others that we take during play. But we should not play; rather, we should perform as expected in that (serious) context and with that (serious) object. We want play without play. We want playfulness—the capacity to use play outside the context of play. (P. 21)
11	Huizinga (2002)	Non-consequential reality	free activity standing quite consciously outside "ordinary" life as being "not serious", but at the same time absorbing the players intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner. (p.13)
12	Byun et al. (2017)	Non-consequential reality	Playfulness, defined as a predisposition to extract pleasure from the mere involvement in activities (p.229)
13	Atzaba-Poria et al. (2014)	Openness (Flexibility)	In addition, playfulness consists of a state of mind in which an individual can think flexibly, take risks with ideas, and allow creative thoughts to emerge (Menashe-Grinberg & Atzaba-Poria, 2017, p. 2) source work is unpublished

14	Kerr & Apter (1991)	Non-consequential reality	In play, we seem to create a small and manageable private world which we may, of course, share with others; and this world is one in which, temporarily at least, nothing outside has any significance, and into which the outside world of real problems cannot properly impinge. If the 'real world' does enter in some way, it is transformed and sterilised in the process so that it is no longer truly itself, and can do no harm. (Apter 1991, 14)
15	Schaefer & Greenberg (1997)	Openness (sensitivity)	The playful person approaches daily activities, such as work, relationships, and recreation with a predisposition to have fun. (P. 22)
16	Pons, Jaen, & Catala (2014)	Engagement (Immersion)	The first step for the design of intelligent playful environments should be studying the most fundamental game phases, which will be common in a range of playful experiences that could be created. Considering the playful activity as a story/performance in which the actors will be the animals, the most basic and common phases in which we can decompose such stories will be the introduction, development and conclusion. Therefore, the most fundamental interactions within an intelligent playful environment will be the initiation of the activity (introduction), the transition from one stage/goal to another (development) and the termination of the game (conclusion). A set of experiments is being designed to study these three game phases that every playful experience contains. (p.27)
17	Csíkszentmihályi, M. (1975a)	Engagement (Immersion)	When the information that keeps coming into awareness is congruent with the goals (p. 39)
18	Webster & Martocchio (1992)	Re-ordered	"Microcomputer playfulness, a situation-specific individual characteristic, represents a type of intellectual or cognitive playfulness. It describes an individual's tendency to interact spontaneously, inventively, and imaginatively with microcomputers." (P. 202) ""he will be testing hypotheses in the propositional 'if-then' manner, will go over his thinking, and the reservoir of factual knowledge through the process of reversibility of operations and may come out with unique solutions as a result of his 'playing with ideas' (pp. 57-58)... therefore cognitive spontaneity is a type of intellectual playfulness" (P. 204)
19	Bateson, Bateson, & Martin (2013)	Openness (Flexibility)	Playful play (as distinct from the broader category of play defined by psychologists and biologists) is accompanied by a particular positive mood state in which the individual is more inclined to behave (and, in the case of humans, think) in a spontaneous and flexible way. (p.100)
20	Sutton-Smith (2009)	Re-ordered	play that doesn't play within the rules but with the rules, doesn't play within frames but with the frames (p.150)
21	Chick, Yarnal, & Purrington (2012)	Openness (sensitivity)	The study by Buss and Barnes (1986) using their list of thirteen possible characteristics of prospective mates that individuals might seek. We added playful, sense of humor, and fun loving to include the concept of playfulness in the list. (We began with a list of thirty-five traits as part of a larger study. A factor analysis of this larger data set provides several factors, one of which consists of playful, sense of humor, and fun loving. (P. 422)
22	Mathwick, Malhotra, & Rigdon (2001)	Engagement (Immersion)	Playful exchange behavior is reflected in the intrinsic enjoyment that comes from engaging in activities that are absorbing, to the point of offering an escape from the demands of the day-to-day world (Huizinga, 1955; Unger & Kernan, 1983). Playfulness exists to some degree in any activity that is freely engaged in. (P. 44)

23	Yarnal & Qian (2011)	Reframe (Design)	Playful older adults are happy, optimistic, cheerful, amusing, positive, enthusi-astic, and relaxed. In everyday exchanges, they tend toward mischief, naughtiness, clowning, joking, and teasing; they embody fun and humor in ways that translate into laughter and amusement in others. Although impish, they are circumspect about their behavior in ways that teenagers have not yet mastered. Nevertheless, again, they continue to approach the world with a measure of creativity and whimsy. (P. 71)
24	Sanderson (2010)	Openness (sensitivity)	The expression of the child's drive to freely and pleasurably engage with, connect with, and explore the surrounding world. (P. 67)
25	Dewey (1923)	Non-consequential reality	"the activity is its own end, instead of its having an ulterior result" (P.238) "Persons who play are not just doing something {pure physical movement); they are trying to do or effect some- thing, an attitude that involves anticipatory forecasts which stimulate their present responses. The anticipated result, however, is rather a subsequent action than the production of a specific change in things. Consequently play is free, plastic." (P.238)
26	Glynn & Webster (1992)	Reframe (Design)	we focus on playfulness as an individual characteristic, i.e., a predisposition to define and engage in activities in a non-serious or fanciful manner to increase enjoyment. (p.83)
27	Guitard, Ferland, & Dutil (2005)	Openness (sensitivity)	playfulness is a state of mind, an internal predisposition that is composed of creativity, curiosity, sense of humor, pleasure, and spontaneity. Playfulness allows adults to approach activities with the same openness of mind with which the child approaches play. (p.21)
28	Lotman (2011)	Non-real	Play is the realization of a certain kind of – "playful" – behaviour, which is different from both practical behaviour and behaviour based on models of the cognitive type. Play is the simultaneous realization (not their alternation in time!) of practical and conventional behaviour. The player must simultaneously remember that he is participating in a conventional (not real) situation (a child knows that the tiger in front of him is a toy and is not afraid of it), and not remember it (when playing, the child considers the toy tiger to be a real one). (p. 254)
29	West & Shiu (2014)	Non-consequential reality	play is done for the sake of enjoyment, not for the expected results of the playful activities (P. 194)
30	Crystal (1996)	Re-ordered	Language play occurs when people manipulate the forms and functions of language as a source of fun for themselves and/or for the people they are with. (P. 328)
31	Luo, Zhou, & Zhang, (2016)	Reframe (Design)	"Playfulness can be interpreted in terms of abilities such as emotional expression and the use of intrinsic motivation as well as in terms of characteristics and behaviors such as naturalness, a sense of freedom, happiness, being childlike, playing or being funny." (p. 210) "Playfulness Scale. The Playfulness Scale (Zeng, 2002) employed in this study includes six factors: "enthusiasm sharing, climate producing," "intrinsic motivation, working pleasure," "risk-taking, multi-experience," "relaxed attitude, full of fun," "humor, enter-tainment,"and"naïve, romantic, and free." "This scale hasn't been through the test of convergent validity; however, some questions were deleted in 2003 due to their factor loadings being less than 0.30 (Wu,2004)." (P. 216) Was unable to Find Zeng (2002), above quotes

			are from Luo, Zhou, & Zhang (2016)
32	Zimmerman (2008)	Openness (sensitivity)	being literate in play means being playful — having a ludic attitude that sees the world's structures as opportunities for playful engagement. (p.161)
33	Craft et al. (2013)	Non-real	Play/playfulness: being in an 'as if' space, improvising (P. 22)
34	Vygotsky (1980)	Non-real	What is most important is the utilization of the play thing and the possibility of executing a representational gesture with it. This is the key to the entire symbolic function of children's play. A pile of clothes or piece of wood becomes a baby in a game because the same gestures that depict holding a baby in one's hands or feeding a baby can apply to them. (P. 89)
35	Whitton (2012)	Non-real	Playfulness [title of section] Games provide access to another world, one that is typically safe from the consequences of the real world. In games the player can explore and try out new things without the risk of negative outcomes outside of games. Players can try things out that they wouldn't dream of trying in the real world.... The playful state that games can engender can spark creativity innovation, and new ideas, as well as allowing players to engage with fictional narratives, characters, and plots. They allow players freedom and control to create new identities and interact with both environment and other people in novel and surprising ways. They can also create a sense of fun and enjoyment, removing some of the stresses and pressures that are often associated with formal education, and allowing learners to engage with the game activities in a relaxed and light-hearted manner (online, no page numbers)
36	Suits (2018)	Engagement (Immersion)	I believe that we are now in a position to define lusory attitude: the acceptance of constitutive rules just so the activity made possible by such acceptance can occur. (p. 40)
37	Youell (2008)	Re-ordered	What then is the difference between play and playfulness? In ordinary parlance,the word 'playful' carries an assumption of enjoyment, fun or amusement.In the context of this paper I am using it in a very specific way to describe a state of mind in which an individual can think flexibly, take risks with ideas (or interactions), and allow creative thoughts to emerge. (p.122)
38	Lester & Russell (2008)	Openness (sensitivity)	what children and young people do when they follow their own ideas, in their own way and for their own reasons. (p. 16)
39	Ejsing-Duun & Karoff (2015)	Non-consequential reality	Playfulness, in our understanding, is related to a way of being, in which goals and usefulness are not always at the center of activities" (p.4)
40	Van Vleet & Feeney (2015)	Engagement (Immersion)	Play is an activity that is carried out for the purpose of amusement and fun, that is approached with an enthusiastic and in-the-moment attitude, and that is highly-interactive (p. 632)
41	Møller (2015)	Openness (Flexibility)	Playfulness is therefore understood as a willingness to affirm transgressive acts, thereby transforming the play scenario such that the transgression can be included in the play scenario to ensure the continuation of the play. (p. 328)
42	Singer (2015)	Reframe (Design)	"children's playfulness — that is, their creativity and sense of freedom." (p. 32) "In a play pedagogy, teachers gently structure young children's lives by means of routines, rituals, songs, dance, rhythms,

			rhymes, and humor." (p. 33)
43	Stenros (2015)	Non-consequential reality	Playfulness is autotelic; it is its own reward. The expression of this innate playfulness is influenced by numerous factors relating to both the species and the individual. The phylogeny of the species, the past and present environmental factors, individual genetics,ontogeny, and energetics all play their parts. With humans, the awareness of playing (and of the very concept of play) muddies the waters. The expression of playfulness happens not just in an environmental context, but in a social and cultural context as well. (p. 92)
44	Kuo et al. (2016)	Engagement (Immersion)	This paper defines playfulness as the experience of emotions such as inspiration, curiosity, and the feeling of being immersed in the historical site (p. 2)
45	Holt (2016)	Re-ordered	Consequently technical use of the term 'playful' invites consideration of the packaging of turns and actions; while 'non-serious' invites consideration of whether the turns do what they might otherwise be treated as doing (complaining, requesting, etc.). However, this is not to say that there is not much overlap between these in interaction. In interaction participants collaborate in producing sequences whereby they are playful and non-serious and orient to these through laughter moment by moment to create rich, complex and multifaceted talk." (p. 13)
46	Fine (2014)	Engagement (Immersion)	In an attempt to begin to fill this gap, I strive here to imagine secondary instruction that is intellectually playful—defined in this case as instruction organized around tasks that are open-ended in that they have many valid strate-gies and answers, absorbing in the sense of supporting immersive "flow" experi-ences (Csikszentmihalyi, 1997), and, finally, punctuated by opportunities for social and/or intellectual risk taking. (p. 4)
47	Brown & Leigh (2018)	Openness (Flexibility)	play is framed by the context of its space, its participants (the players) and its rules. Play disrupts existing norms and expectations. (p. 6)
48	Van der Meij, Broerse, & Kupper (2017)	Openness (Flexibility)	"we postulate that playfulness is an attitude that helps people to learn and to perform complex tasks, and that playful tools and environments can evoke it." "Therefore, we tentatively define playfulness in the context of RRI reflection processes as an intellectually curious, alert, flexible, inventive and prejudice-free attitude in (1) the analysis of new complex information or issues as well as in (2) the synthesis of new, creative, ideas or solutions" (P. 45)
49	Holopainen & Stain (2015)	Re-ordered	We start with a brief review of existing frameworks for playful design and then proceed to argue that gameplay, understood as caricatures of intentional behavior, is at the heart of playfulness. This approach, together with insights from flow and reversal theories and the concept of closures, is used to reveal the underlying structures of playfulness. (p. 419)
50	Graven & Schafer (2014)	Openness (Flexibility)	"In our current conceptualisation we identify three different types of playfulness, which we refer to as mindfulness, imagination and experimentation. Mindfulness is a kind of perceptual openness which relies upon the inclination to notice the unfamiliar or to 'read the situation' in different ways (Langer, 1991, 1997). The opposite pole to mindfulness is 'mindlessness': the inclination to see only in terms of familiar categories and ignore details that are incidental to the process

			of categorisation or inconvenient to it. Mindlessness 'is marked by a rigid use of information during which the individual is not aware of its potential novel aspects', whereas mindfulness is characterised by 'active distinction-making and differentiation' (Langer & Piper, 1987, p. 280). Imagination is mental playfulness: the inclination to generate alternative inner scenarios and fantasies, to draw on different analogies and spot unlikely connections. Children who are more imaginative 'seem to manage their school lives with more persistence, self-control, and enjoyment' (Singer & Singer, 1992, cited in Sutton-Smith, 1997, p. 154). The opposite of being imaginative is , of course, being unimaginative: not being able to see beyond an initial interpretation and being stuck with it as the 'literal truth' of the situation. Experimentation refers to the ability to play with or explore physical material and conditions so as to discover their latent properties and possibilities. Often just 'messing about', without a clear goal or purpose, reveals new affordances and thus makes both new means and new goals possible. (p.14-15)
51	Paasonen (2018)	Openness (sensitivity)	Playfulness here translates as a mode, capacity and orientation of sensory openness, curiosity and zest for variation that precipitates improvisation in acts of play. Play again stands for the means and actualisations of playfulness: for doing playful things and carrying out playful scenarios under more or less clearly defined sets of rules and guidelines (P.1)
52	Gordienko-Mytrofanova & Sauta (2016)	Openness (Flexibility)	We have been studying playfulness in relation to the constructive strategy (game-playing strategy) of personal behavior, as it can provide individuals with maximum social adaptability (including high indexes of a role flexibility and role depth) both in a role conflict and in unexpected, uncertain and critical situations, without losing a strongly articulated individual identity (p.47)
53	Van Manen (2018)	Engagement (Immersion)	playfulness (being gratuitously engaged) is an attitude that fortuitously may give rise to phenomenological meaning insight (p. 678)
54	Sethna et al. (2018)	Engagement (Immersion)	playfulness is operationalized and measured by the following four interaction domains: (i) physicality (gross motor stimulation) (ii) playful excitation (sudden, unexpected verbal or non-verbal behaviours), (iii) tactile stimulation (touch),(iv) active engagement (stimulation via paternal behaviour, affect, facial expression, and tone of voice)" (P. 4)"Active engagement is a reflection of the effort the father puts into the interaction to create a lively, vigorous environment (higher scores) as opposed to a quiet and contained one (lower scores)" (P. 11) "This was adapted from previous work in which paternal use of teasing entails 'unexpected ambiguous behaviours which destabilize the infant and whose expectations are contradicted' (Labrell, 1994, p. 128). In this category of playful behaviour we code for specific instances of unpredictable movements within the infant's visual field, change in pitch and volume of voice quality which stimulate and arouse the infant." (P. 10)
55	Guo (2018)	Re-ordered	playfulness, are markers of young people's interactions and explorations into the uncharted territory. Creating a code system which makes odd variations of the existing normative language is a symbol of subverting the traditional rules and norms in real world. (p. 142)

56	Goddard, Byrne, & Mueller (2014)	Openness (Flexibility)	"Playfulness is seen through open participation and egalitarian attitudes. For example, game makers can participate regardless of their professional role [24] and at any level of education [12]. Furthermore the teams formed during game jams often have no hierarchy or designated roles. Tool use is usually unrestricted within the context of game making, limited only by issues of licensing or copyright." (P. 4) "Playful: Unstructured, spontaneous, open-ended; paidia." (p.3)
57	Würsig (2018)	Engagement (Immersion)	"Play is an activity that at first glance seems to have no purpose but enjoyment. But, young animals do learn motor and social skills needed to survive via such activities (Farentinos, 1971, for Steller sea lions, Eumetopias jubatus; Kovacs, 1987, for harp seals, Phoca groenlandica). Play as "enjoyment" may have evolved because some-thing enjoyable will be sought after, and if needed actions of learn-ing are enjoyable, they will be done. " (P. 741)
58	Boberg et al. (2015)	Engagement (Immersion)	Thus allowing us to distinguish a four-factor structure of playfulness: a)stimulation, b) pragmatic c) momentary and d) negative experiences (p.388)
59	Warmelink (2014)	Openness (sensitivity)	"At best it relates to the basic idea behind gamification: an interest in "Introducing playfulness (creativity, spontaneity, enjoyment) into an organization." (P. xvi) "A continuous search for creative, spontaneous, and enjoyable experiences takes their place. The experience-instrumentalizing, experience-ideologizing, and phenomenon-instrumentalizing frames actually strengthen the phenomenon-ideologizing framing of the playful organization." (P. 10)
60	Walsh, McMillan, & McGuinness (2017)	Openness (sensitivity)	Adult playfulness in terms of 'a joyful readiness for anything' (p.199)
61	Taharim et al. (2014)	Engagement (Immersion)	A mobile learning application with "playfulness" embedded will create an explorative experience which will increase student's engagement and interest into a deeper level. (p. 21)
62	Pharies (2015)	Re-ordered	Play that is focused on the lexicon is based on the manipulation of paradigms and convergences - on a radical process of lexical cross-referencing and systematization. This is precisely the sort of activity that favors the development of complex analogical formations such as templates (p. 18)
63	De Koven (2014)	Openness (sensitivity)	"Playfulness is all about being vulnerable, responsive, yielding to the moment. You might not be playing, but you are willing to play, at the drop of a hat, the bounce of a ball, the glance of a toddler, the wag of a tail. You are open to any opportunity. You are loose. Responsive. Present." (p. 34) "Playfulness means presence, but not just presence. Responsiveness, but not just responsive-ness. Presence and responsiveness, lightness and attentiveness, improvisation and creativity, a willingness to let go and become part." (p.34)
64	An (2018)	Non-consequential reality	A child has a natural instinctual desire to play for it is here where she can experience intense emotions and pleasures sought for their own sake. (p.12)
65	Lockwood & O'Connor (2017)	Openness (sensitivity)	Within this framework, playfulness may be understood as a cognitive attitude towards being intrinsically motivated and uninhibited, supported through a behavioural orientation towards fun-seeking and spontaneity. (p. 5)