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A systematic literature review of 'empathy' and 'games'

ABSTRACT

Scholarship on the intersection of games and empathy is limited. However, over the past decade peer-reviewed articles have started to be published in this area. This study investigates this emerging scholarship on empathy and games to understand how researchers are describing, defining and communicating their work. For example, How are research articles about games defining empathy? From which disciplines are the researchers framing their studies? Which types of games are being used in the investigations? Forty-nine articles were found, coded and analysed by searching six different databases. For this investigation, each article was analysed based on the discipline, keyword(s) used to find the article, definition(s) of empathy used, types of games used in the article and the themes used in the article. Articles emerged from twelve different disciplines and described over thirteen different types of empathy. Findings were shared, as well as recommendations for researchers studying this area.

KEYWORDS

games
empathy
gaming
digital games
literature review
compassion

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INTRODUCTION

'Empathy' is not a new concept; however, it is being practiced in new contexts and applied in differing ways, which require further analysis (Brown 2018; Sousa and Tomlinson 2017; Tomlinson and Murphy 2018). For instance, some games are being purposefully designed and used to support prosocial behaviours and social and emotional learning (SEL), which may include enhancing empathy, compassion and related skills and concepts (Schrier and Farber 2019). Researchers like Ruberg have noted that game scholars and journalists have increasingly started to use the rhetoric of 'empathy' in relation to games, such as when describing ones that help players 'walk in another's shoes' (Ruberg 2020).

The intersection of games and empathy is an emerging area, starting to be studied over the past decade by researcher communities from all different fields, such as computer science, media studies, and the social sciences. However, they may not be in dialogue with each other, and there is no meta-level discussion of what or how it is being studied. Further, the term 'empathy' may be used very differently in different contexts, and without precision, nuance or even accuracy (Hall and Schwartz 2018). The use of the term may even be misused, which could have ethical and discriminatory implications (Ruberg 2020). This article seeks to contribute to this conversation by conducting a systematic review of peer-reviewed scholarship that use the terms empathy and games, and analysing how these terms are used.

The intersection of games and empathy is an emerging area of inquiry. There are a number of reasons why this new area is important to study, and further define. One, people are spending more time playing games (Entertainment Software Association 2019), and this has increased even further during the COVID-19 Pandemic (Schrier 2021). When playing any game, players may experience prosocial interactions, such as friend-making and mentorship, as well as antisocial interactions, such as harassment and bullying through online games (ADL 2019; ADL 2020). Understanding how to encourage people to practice empathy towards other players can better support further prosocial interactions, and reduce the antisocial ones. For instance, practicing empathy through games may help to reduce conflict and aggression towards others, including bullying (de Vos et al. 2013).

Second, games may be another type of experience, alongside others, including film, books and theatre, which help us understand more about ourselves, others and humanity (Schrier 2019), as well as support the practice of social and emotional skills and behaviours. For example, Bréjard et al. (2016) observed that those who self-report frequent game play as being more adept at regulating their emotions than those who report occasional play.

Third, because games may connect people from all over the world, or may represent different types of people, cultures, and/or perspectives, games may help players see others as more familiar and as part of their 'in-group', rather than an 'out-group', possibly enhancing empathy (Darvasi 2016; Farber and Schrier 2017). Understanding the mechanisms by which we can connect with others through experiences such as games can help to possibly reduce biases and support cultural awareness and understanding (Schrier 2019).

Finally, games are civic communities and public spheres (Schrier 2021). They are places where we practice ethical and civic decisions and learn about how we can engage with the world. They even may more directly pose moral choices, or enable the practice of ethics. Developing empathy through games

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may be useful for moral and civic education, as they may support the practice of ethics, alongside caring for others (Noddings 2010; Read 2019).

Thus, in this article, we seek to review the intersection among two fields of research: games and empathy. This intersection has been explored in a number of recent articles and books (Sampat 2017; Farber and Schrier 2017; Darvasi 2016; Schrier 2021), though it is still understudied. The area of empathy and games has been not well defined and there has been no systematic review of recent scholarship.

As such, we aim to explore the scholarship in this area, describe the disciplinary approaches, identify their definitions, and recommend next steps. We specifically want to understand the following:

- What are the types (definitions) of empathy that are discussed in research (peer-reviewed and scholarly) on games and empathy?
- What are the disciplinary approaches that are used?
- What are the themes that emerge in the articles on games and empathy?
- What types of games are they using?

We hope that this investigation will serve as an initial map to this emerging area and will help us to explore new questions within it, as well as help us in refining our usage of empathy as applied to games.

What is empathy and why study it?

What is empathy? Colloquially speaking, empathy is feeling how someone else feels or understanding what someone else has experienced (Gaesser 2013). Affective, cognitive and motivational components of empathy have been cited and debated (Gerdes et al. 2011; Bailenson 2018; Batson 1991; Zaki 2017).

There are a number of reasons why it is useful to study empathy. Researchers have connected empathy to prosocial behaviour, or behaviours that aim to help others and connect people (Gaesser 2013). Batson (1991) hypothesized that empathetic concern for an others' plight could lead to more altruistic, prosocial outcomes. Empathy and perspective-taking are key components of the Collaborative for Academic, Social, and Emotional Learning's (CASEL) Framework (Core SEL Competencies 2019), which describes the types of skills needed for SEL understanding. Empathy has also been seen as an integral component to moral education (Read 2019); to reducing conflict and bullying in educational settings and beyond (de Vos et al. 2013); and to developing a strong teacher-student relationship (Tomlinson and Murphy 2018). Finally, empathy may be related to reducing biases and enhancing respect for other cultures (Schrier 2019).

While some researchers have called for the need to teach empathy in schools and the workplace (Brown 2018; Sousa and Tomlinson 2017; Tomlinson and Murphy 2018), other researchers have criticized empathy as not being a useful concept, inconsistently applied, and that its use may even be problematic or harmful (Bloom 2017; Ruberg 2020; Hall and Schwartz 2018). Researchers have suggested that the societal value of being empathetic compared to other social emotional traits (e.g. compassion) may in fact be overstated (e.g. Bloom 2017; Marinova et al. 2018), as compassion often includes action, such as being nurturing, whereas empathy does not. Being empathetic can cause some people to become biased towards in-groups over out-groups (Bloom 2017; Field 2017).

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Empathy and digital games

Games can be defined as 'a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome' (Salen and Zimmerman 2003: 80). The boundaries of what a game is or is not – whether a walking simulator, VR experience, live-action role-playing game (LARP), or board game – is not the focus of this article. We included research on games and empathy based on what the researchers themselves defined as 'games' (by using the word, 'games', in our search).

An overriding research question is whether digital games can support the practice of empathy, and related skills and behaviours, such as perspective-taking, empathic concern, and prosocial behaviour. Related questions posited by researchers include: whether a game can spur participants to practice empathy outside of the game, similarly to within the game; whether empathy practice can lead to prosocial attitudes and behaviours; and whether designing games, as well as playing them, can support the practice of empathy-related skills, like thinking about views or evidence from another's perspective (Schrier and Farber 2019). For example, research has considered whether games can stimulate imagination and episodic memory in ways that may induce empathy (Addis and Schacter 2008; Gaesser 2013; Szpunar and Schacter 2012). Research has also considered whether some games can mentally transport players into fictional worlds (Gerrig 1993; Gerrig and Prentice 1991; Green and Brock 2000; Murphy et al. 2011), and whether this immersion also requires a strong narrative context (Bowman 2010; Cragoe 2016). Research has also investigated how players who are immersed in a fictional world may feel empathetic towards experience as a whole, as well as with virtual characters that populate the worlds (Schrier 2017; Belman and Flanagan 2010; Greitemeyer and Osswald 2010; Flanagan and Nissenbaum 2014; Mahood and Hanus 2017). For instance, in some digital games, players navigate a digital on-screen persona, projecting their identity onto an avatar. The extent to which players can perspective-take using a projective identity onto a digital avatar, choice-making as another persona, may (or may not) evoke feelings of empathy (Belman and Flanagan 2010). Players may also feel empathy towards nonplayable (computer-controlled) characters, as well as other players, in online multiplayer game worlds (Greitemeyer et al. 2010; Harth 2017; Isbister 2016; Lepron et al. 2015; Mahood and Hanus 2017; Turkle 2011). Researchers have also explored whether the interactions in game worlds can support (or limit) the practice of empathy-building skills, as well as ethics and morality (e.g. Schrier 2021; Schrier 2015; Belman and Flanagan 2010; Macfagan 2003; Noddings 2010). Finally, researchers have also considered the ethical implications of using games for empathy, and have noted instances where games may backfire, and spur misconceptions or even harm (Ruberg 2020; Schrier 2021).

Need a space

Why conduct a systematic literature review on empathy and games?

The application of empathy to gaming is a new area of study. As this area continues to be studied, we argue that it is a useful moment to understand how researchers are investigating it – thus motivating this investigation. There are two main reasons that justify our pursuits in describing the research in this nascent area.

First, empathy itself is an 'umbrella term' (Zaki 2017: 60), and can have different nuanced meanings, based on the context in which it is used. In the

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field of service design, empathy can mean the imagined potential experience of a client or customer or patient (Hess and Fila 2016), while historical empathy purports to engage people in the reconstruction of 'others' beliefs, values and goals, any or all of which are not necessarily those of the historical investigator' (Riley 1998: 33). As we discuss later, a number of different types of empathy have been identified and described by researchers. Cognitive empathy describes 'intentionally taking another person's point of view' (Belman and Flanagan 2010: 6), and affective empathy defines empathy as connected to emotions and feeling what others feel (Oswald 1996). Being able to appropriately define empathy will help us to better understand it in relation to gaming, will help to resolve any inconsistencies, will help to further establish this area of inquiry, and will help to better foster dialogue across researchers.

Second, empathy is a complex concept that is challenging to measure and assess, and the methodologies used to assess it may vary across different fields. Researchers have pointed to investigating specific skills, actions, behaviours, attitudes and practices, such as perspective-taking, empathic concern, personal distress, and fantasy involvement (Davis 1983), as well as the ability to express, identify and regulate one's emotions (Batson 1991; Baron-Cohen and Wheelwright 2004). For example, the ability to take on other perspectives may be fundamental to being an empathetic person, as it describes those who: (1) see the world as others see it, (2) are non-judgmental, (3) understand another's feelings (4) and can communicate this understanding (Wiseman 1996: 1165). Being able to appropriately measure and assess it will help us to accurately understand how games may (or may not) support the development of empathy, and will further define and refine this new area.

Current research on empathy often asks more questions than answers them. Thus, an impetus for this study is also to review the current research that exists around empathy, particularly in relation to games and gaming, and to identify gaps and themes, and to describe and further define its terms and metrics.

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METHODOLOGY

In this section, we describe the methodology for conducting the systematic literature review of published peer-reviewed research on empathy and games.

Use of a systematic literature review

Systematic literature reviews are form[illegible]s standalone research review[illegible]here constructs such as search terms and databases are predetermined by researcher(s) (Adroher et al. 2018; Fink 2019; Okoli 2015). Similar to other forms of literature reviews, researcher(s) take the following steps: (1) decide upon research questions, (2) develop an agreed-upon review protocol, (3) search literature databases, (4) rescreen for inclusion of all search terms, (5) assess quality of search results, (6) extract data, (7) analyse and synthesize data and finally (8) report the findings (Xiao and Watson 2019: 102). Systematic literature reviews have methodological roots in the health sciences (e.g. Okoli 2015), but increasingly this approach is also conducted in other fields such as information sciences, learning sciences, and in game-based learning (Fink 2019; Hainey et al. 2016; Papamitsiou and Economides 2014). For instance, Hainey et al. (2016) conducted an extensive systematic literature review on game-based learning in primary education over a thirteen-year period. In this

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review, Hainey et al. (2016) sought to understand efficacy through analysis and synthesis of empirical evidence of outcomes found in literature. As with Boyle et al. (2016) and Connolly et al. (2012), we hypothesized that search terms 'empathy' and 'games' may be used differently in different contexts depending of fields of study (empathy may mean something different in an historic-set educational game than in a nursing student training game). Unlike Boyle et al. (2016) and Connolly et al. (2012), we agreed upon the use of Boolean logic, which enabled us to combine search terms (i.e. search: 'empathy and games' rather than each term on its own).

Databases searched

We used a systematic literature review in which we searched and reviewed literature with specific keywords using inclusion and exclusion criteria, and relevant databases (see, for instance, Androher et al. 2018; Noyes et al. 2020). To conduct our review and analysis of relevant literature, we looked at six different major databases, ACM Digital Library, ProQuest, Academic Search Elite (EBSCO), Google Scholar, Sage and DOAJ, during March and April of 2018. We chose these databases as they were available through our libraries and have been previously used to conduct literature reviews related to the intersection of gaming and games with SEL (Schrier 2015). Systematic literature reviews can use a sample of databases rather than being exhaustive of all databases that exist (Okoli 2015; Xiao and Watson 2019).

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Search terms and inclusion criteria

Using these databases, we systematically searched for all relevant studies and scholarly research literature using the following search terms: empathy AND games and empathy AND videogames. We used the following criteria to find the set of articles: (1) published in the previous ten and a half years from our search start date (2) appeared in scholarly, peer-reviewed journals or proceedings and (3) were related to videogames and empathy as a primary focus of the study, rather than just having those two words appearing in the article, as determined in part by the 'relevance' of being in the first 100 search results and by a review of the article by the reviewers (e.g. an article with the idiom 'blame game' in the title may fit the search criteria but is not relevant to the area of inquiry). Our search took place during Winter 2018; we set the publication date criteria to begin on July 2007 and to go up through December 2017, as 2007 and 2008 are when studies on empathy and games started to appear more frequently. Our search using these criteria resulted in 49 total articles (see Appendix 1 for a list of all the articles).

Coding strategies and interrater reliability

We coded 49 articles on six different categories: (1) discipline(s) of the article, (2) the database used to find the article, (3) keyword(s) used to find the article (Empathy AND games or Empathy AND videogames), (4) types and definition(s) of empathy used, (5) types of games used or researched and (6) whether fifteen specific terms or phrases were used in the article (in other words, whether the exact term or phrase was found in the article). Other categories were coded but were not included in this particular article. The discipline areas were defined based on both a top-down and bottom-up approach. We first looked at the common groupings of disciplines, based on the list of

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subject guides in an institution's (anonymized) database. Then, we also looked at the fields typically represented in the study of games, and how these disciplines are grouped (Coavoux et al. 2016). Finally, we looked at the tags and keywords in the articles we found to narrow down the list of fields we used to categorize. We omitted any disciplines that were not represented in the articles.

To elicit the codes we used and create a coding scheme (including the list of fifteen themes), we first reviewed 10 per cent of the articles and generated codes using an inductive thematic analysis (Corbin and Strauss 2014). A list of possible codes was generated from the key terms and phrases that emerged from an inductive, qualitative approach, conducted done by the researchers, which involved in vivo (labelling significant words) and thematic coding (Saldana 2015) of the articles. Overlapping and similar codes were omitted or revised. After the researchers individually created a set of possible codes, they collaboratively compared the codes, refining the list iteratively. The researchers coded an additional 10 per cent of the articles and then compared the codes used, further refining the coding scheme.

Finally, the researchers coded all of the remaining articles. Individually, they first achieved 89 per cent agreement for the codes in the six categories. They then re-reviewed all of the articles together until they achieved 100 per cent agreement on the codes used. The full coding scheme can be viewed in Appendix 2. The list of 49 articles can be viewed in Appendix 1.

Methodological limitations

Systematic literature reviews are not intended to be exhaustive, but rather snapshots of empirical research in a specified field of study (Xiao and Watson 2019). As with literature reviews in general, there are always limitations such as search terms used, time windows for searches, and databases selected. In our review, we omitted any article that was (1) not peer-reviewed, (2) was only an abstract (and not a full article) or (3) was not in English, due to our inability to otherwise read and interpret the article. We also selected databases that were available through our university libraries, and have been previously used to conduct literature reviews related to the areas of inquiry (e.g. Boyle et al. 2016; Connolly et al. 2012; Hainey et al. 2016). These are all limitations to our study.

RESULTS AND ANALYSIS

The total number of articles included in this study were 49 (N=49, or 49 cases). A full list of articles by database (including duplicates) is found in Table 1.

Disciplines used

Disciplinary approaches used in each article were also coded. Overall, the most frequently coded discipline was psychology (including psychological effects; social; behavioural aspects of games) with 25 articles being coded as relating to this discipline, or 51 per cent of the total articles. Additionally, communication/media effects and education/learning were coded for thirteen different articles each. Table 2 shows the disciplines that were coded for the 49 articles. To decide which discipline(s) to ascribe to an article, we used the following methods. One, we looked at the key terms of the article and title of the article. Two, we looked at the journal, and what subjects it is categorized

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Database	N	Percent of cases
ACM Digital Library	16	32.7
ProQuest	16	32.7
Sage	4	8.2
EBSCO (Academic Elite)	17	34.7
DOAJ	6	12.2
Google Scholar	20	40.8

Note: The total is greater than 49 because some articles show up in multiple databases.

Table 1: The number of articles that fit the criteria for this study, found in each database searched.

Discipline	N	Percent of cases with this
Psychology	25	51
Nursing/health	6	12.2
Economics/social science	6	12.2
Gaming/gaming studies	9	18.4
Communication/media effects	13	26.5
Design (HCI/user experience design)	10	20.4
Philosophy/ethics	4	8.2
Computer science	3	6.1
Civics	4	8.2
Art/performing arts	3	6.1
Education/learning	13	26.9
Humanities/media studies	5	10.2

Note: The total is greater than 49 because some articles were coded as being multiple different disciplines.

Table 2: The number of articles coded with the twelve different disciplinary approaches.

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under. Three, we looked at the text of the article, and which types of literature and methodologies were used and cited in the article. For instance, an article such as 'Determining reactive and proactive aggression and empathy levels of middle school students regarding their video game preferences', was coded as being from the disciplines: psychology, communications and education.

The wide range of disciplines represented in the 49 articles reflects the multidisciplinary nature of empathy and games, as well as their intersection. Many articles were coded with multiple disciplines, suggesting that research in this area may benefit from having researchers or approaches from multiple different disciplines. Some journals appeared more than once (Computers in Human Behaviour, PLoS One and Frontiers in Psychology).

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However, there was a wide range of journal types and disciplines of journals (for instance, journals and proceedings as diverse as the Theatre Journal and the PervasiveHealth'17: Proceedings of the 11th EAI International Conference on Pervasive Computing Technologies for Healthcare). This further suggests a diversity of approaches, uses and contexts for empathy and games. The highest frequency of articles, in sum, comes from the social science fields (e.g. psychology, economics/social science, education/learning).

Themes that emerged

Fifteen different themes associated with research on empathy and games were identified and coded by identifying the terms and phrases used in the articles (see Table 3). In analysing the associated themes that were most frequently used overall by all 49 articles, 'Feelings/emotional understanding/emotion/empathetic concern' was by far the most frequently discussed, with 41 instances and 83.7 per cent of the articles including this theme. After that, 'Perspective-taking/perspective/put self in other's shoes' showed up in 75.5 per cent of the articles analysed. Other terms 'Narrative/storytelling', 'Identification with others/relate to others', and 'Immersion/engagement' showed up in almost half the articles. Less frequently coded were themes such

Theme	N	Percent of cases with this
Reflection	9	18.4
Communication	11	22.4
Perspective-taking/perspective/put self in other's shoes	37	75.5
Prosocial	19	38.8
Critical thinking	3	6.1
Cultural awareness/global/cultural understanding	14	28.6
Agency	12	24.5
Narrative/storytelling	21	42.9
Feelings/emotional understanding/emotion/empathetic concern	41	83.7
Civics/civic engagement	6	12.2
Identification with others/relate to others	23	46.9
Immersion/engagement	22	44.9
Violence/violent	15	30.6
Altruism	3	6.1
Ethics/values/fairness/justice	4	8.2

Note: Often, multiple different terms appeared in the same article.

Table 3: The fifteen themes that were coded, and how frequently they appeared in the 49 articles analysed.

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as those related to ethics and fairness; critical thinking; empathy as integral to altruism; or civics and civic engagement.

A common misperception is that research on games and empathy is focused more on the cognitive aspects of empathy rather than the more affective, feeling-focused ones (Pavliscak 2018). However, our research suggests that emotions, feelings and care were also investigated, as themes associated with emotion were frequently identified in the articles reviewed (83.7 per cent).

The themes that more frequently emerged in relation to empathy and games suggest how games are being used to elicit the practice of empathy. Many of the more frequently identified themes are ones related to skills that a player may perform through a game or behaviours that the game may help elicit (perspective-taking, communication, reflection, identification with others, concern for others), as well as game design principles that may connect to an immersive, engaging environment where empathy can be practiced (storytelling, engagement). Thus, these themes may suggest possible goals and design patterns for future empathy games (Björk and Holopainen 2005). Or, the themes may help us to further refine how and when we use the term empathy in relation to games. Do we need to use the term 'empathy', or could we instead use the more specific skill or behaviour we want to elicit, such as reflection or concern for others?

'Violence' was a frequently used term and was used in almost a third of the articles reviewed. However, the themes that emerged suggest that the research on this topic is not just related to the limitations of games (e.g. aggression, violence), but also on the beneficial aspects (e.g. to support perspective-taking, cultural awareness, feelings). This is important to note, as media reports often cite the antisocial aspects of games, rather than the prosocial aspects (Schrier 2019).

Finally, the lower frequency of the themes of equity and ethics among the data set we studied suggest a gap in the scholarship. We should be considering not only how games may be supporting prosocial change, but the ethics of that transformation. What are the equity-related and ethical implications of the use of empathy games? (Ruberg 2020; Rusch 2017; Rusch 2019; Schrier 2021).

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Types of empathy

Many different types of empathy were described in the research articles analysed. Thirteen kinds of empathy emerged (see Table 4), including a general term for 'empathy'. Shin and Ahn (2013) describe cognitive empathy as a social behaviour that involves reading and interpreting the thoughts of others. Dodge (2011) describes cognitive empathy as including four different processes: 'perspective taking (understand another's point of view) and fantasy identification (imagining oneself in the place of another), as well as […] empathy reflection (recollecting one's response) and empathy projection (hypothesizing response in another context)' (288). Edele et al. (2013) distinguish between cognitive and affective empathy, and explain that cognitive involves 'understanding what another person is thinking or feeling' and relates to actions like 'metalizing, perspective-taking, social cognition, mindreading or theory of mind'. Affective empathy focuses on experiencing or sharing another's feelings or emotional state, and relates to activities such as 'emotional contagion, affect matching, empathic concern' or sympathy (Edele et al. 2013).

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Definitions	N	Percent of cases with this
Cognitive empathy	18	36.7
Emotional/affective empathy	19	38.
Psychological/psychoanalytic empathy	1	2
Reactive empathy	4	8.2
Global empathy	2	4.1
Other (auto, player-specific)	12	24.5
General empathy also (general term of empathy)	44	89.8
Parallel empathy	3	6.1
Fantasy empathy	1	2
Cultural empathy	3	6.1
Trait empathy	3	6.1
Game/gameplay empathy	2	4.1
Critical empathy	2	4.1

Note: The total is greater than 49 because some articles included more than one type of empathy in the research.

Table 4: The types of empathy that were identified and/or defined in the articles.

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Edele et al. (2013) argue that these two types of empathy comprise both the cognitive and affective aspects. Cognitive empathy and affective empathy were used somewhat frequently, in about one-third of the cases. Likewise, these two types of empathy are often found together in the same article, with eighteen articles mentioning both cognitive and affective empathy. Overall, the most frequently used definition type was a general use of the word 'empathy', which was used in 89.8 per cent of the articles, rather than a specific type of empathy. Other types of empathy were used, though less frequently, such as reactive (8.2 per cent), parallel (6.1 per cent), and cultural empathy (6.1 per cent). Types of empathy that were coded as 'other types of empathy' included player-specific empathy and auto-empathy. Three additional types of empathy (historical empathy, motivational empathy, and literary empathy) were found in research outside the criteria for this study. Researchers may want to consider them in future research.

The use of so many different types of empathy-related terms suggests that there is little consistency across disciplines in how they are defining, applying and measuring empathy. This has implications for how empathy is operationalized in a game, or researched and measured through a game environment. Moreover, the majority of articles use the term 'empathy' in a general sense, rather than focus on a specific type of empathy, suggesting that many of the articles are using this complex concept as a stand-in for a number of skills, behaviours and practices, rather than using previously defined models, standards or measurements.

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Part of the reason for this may be because empathy itself has been understudied, misunderstood and used differently depending on the context (Zaki 2017; Hall and Schwartz 2018). There is no empathy 'discipline', and, as discussed earlier, multiple disciplines may approach this concept differently, which then affects how it is further applied to games. The wide range of how empathy is used in the 49 articles, and the fact that there are so many different types of empathy that emerged in such a small sample, suggest the need for standardizing the definitions of the term 'empathy' and how it is measured and used. Researchers should consider whether it is empathy they are studying and whether there is another term, skills, behaviour, concept, or process that would be more relevant, precise or accurate.

Types of games

The type of game(s) that were described, researched and interpreted in the research articles were also coded (e.g. digital games, analogue games) (see Table 5). Digital games, generally, were the most frequently coded type of game used in the study (87.8 per cent of all articles include at least one digital game in their research). Commercial off-the-shelf (CoTS) games were also used frequently, with 44.9 per cent of the cases.

Around a quarter of all the articles included a game that was created by the researchers, and was used to conduct the research. For instance, Tong et al. (2017) researched a game As If, which aims to help players understand what it is like to have chronic pain and experience body limitations. This game was coded as being their own game, and a digital game. Likewise, Kors et al. (2016) researched A Breathtaking Journey, which is a mixed reality game that the researchers created, which helps to share the perspective of a refugee. This was coded as a digital game, as a game made by the researchers, and as a game for change.

Italicize this game

We chose a maximum of three game categories that best described the games used in each of the articles. While some of the categories are not overlapping (analogue vs. digital game), many of the categories can be overlapping (CoTS game and digital game).

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Game categories	N	Percent of cases with this
Commercial off-the-shelf (CoTS)	22	44.9
Educational game	8	16.3
Analog (non-digital) game	6	12.2
Games for change/social impact	16	32.7
Digital games	43	87.8
Role-playing games	4	8.2
Their own game used for testing	13	26.5
Economics/game theory game	5	10.2

Note: The total is greater than 49 because some articles included more than one type of game in their research, or the game was coded with multiple categories.

Table 5: The types of games used or researched in the articles.

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These results suggest that practicing empathy is not the domain of just one type of game (such as a game for social change or educational game) but that it may be part of the experience of many different types of games, including ones that are solely focused on entertainment. Participating in empathy is part of the human experience, and not just the domain of games intentionally created for prosocial goals.

The results also showed that about a quarter of the research included a researcher-created game. This suggests the interest on the part of researchers to create games for empathy, the possible lack of models to use to answer research questions about empathy, and the need for supporting research in this field by funding both the creation of game experiences alongside the research of those experiences. However, an open question is why these researchers sought to label their game using the term 'empathy', rather than using other terms.

NEXT STEPS AND RECOMMENDATIONS

This research describes and analyses scholarship around the intersection of empathy and games. This area is characterized by being diverse in terms of disciplines used to approach the topic, where this scholarship is found, and the ways in which empathy is used and defined in the articles.

Taking a step back, we start to see how the different disciplines approach the intersection of empathy and games. Not surprisingly, the disciplines from the social sciences (e.g. psychology, economics, civics, education) look at the affective and emotional aspects of games, as well as the cognitive aspects. The economics discipline more regularly created and used their own games to help better understand human behaviour, such as around altruism. However, it may be surprising that other disciplines, such as computer science and HCI, also considered the affective aspects of empathy. It suggests that researchers studying interactions among computers and human beings are not just thinking about technical and usability questions, but are also considering the affective aspects of these interactions. The humanistic pursuits – such as game studies, arts and media studies – have themes related to emotions, but also perspective-taking, narrative/storytelling, and identifying with others, suggesting that these disciplines consider games a type of text, where story, characters and other elements draw in a player, and help them to empathize with others, just as they might with good literature or film.

Finally, certain disciplines were more likely to use certain types of games. As mentioned before, economics researchers used their own games, while nursing and HCI did as well, which suggests that these fields could benefit from vetted design frameworks, principles and patterns. We should also encourage other fields to develop their own games so that we can see the full range of what games can do, and not just limit their use to certain fields (such as testing for usability and human interactions as in the case of HCI, or addressing healthcare needs or nursing education). As suggested by this research, researchers from some fields have focused more on analysing others' digital and commercial games, such as those from computer science, psychology, philosophy and humanities. We may want to encourage these disciplines to consider applying analyses to non-digital games, games for social change, and games for education. This will help to further the area of empathy and games, as it will benefit both from a consistent taxonomy of terms

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and methodologies, as well as a diverse range of questions being asked and answered, and perspectives being applied (Zaki 2017).

We make the following recommendations for researchers.

Define and interpret how to use the term empathy

This study identified at least thirteen different 'types of empathy' in the literature. Rather than continuing to generate new definitions of empathy or new ways of describing empathy (e.g. affective empathy, critical empathy, motivational empathy), researchers should consider devising a shared set of standardized, clearly defined, specific and measurable terms. Researchers need a shared language and taxonomy to be able to build on each other's studies and replicate results. Researchers should continue to consider whether the term 'empathy' is the correct term to use, or whether there are other more precise or accurate terms (Hall and Schwartz 2018), such as allyship, civic engagement or cultural humility.

Establish norms around measurement and assessment

This study suggested that there are a number of different disciplinary approaches taken when studying empathy (twelve distinct disciplines emerged), each with their own standards, metrics and terminology. Rather than just finding novel ways to measure empathy, researchers should first consider how to establish norms and standards for assessing and comparing empathy across disciplinary boundaries, while also still encouraging a diversity of analyses from a variety of disciplinary approaches.

Partner or collaborate with researchers from other disciplines

This study has suggested that a wide range of disciplinary approaches are being used to study empathy and games. Given the complexity of empathy and games, researchers may want to connect with researchers from other fields. This will help to share best practices across fields while also enhancing multiple perspectives on the area.

Generate more research and games in this area

The area of empathy and games is still nascent and has few peer-reviewed journal articles published on the topic. Yet, many open questions remain (Schrier and Farber 2019). Researchers may want to explore themes associated with empathy and games (such as those fifteen themes identified in this study), with full consideration to the limits and benefits of games. In particular, some areas of empathy and games may be understudied, such as the ethics of empathy games, or critiques of using games to cultivate empathy (Ruberg 2020). Finally, we should encourage researchers to analyse and create the full range of gaming experiences, such as games that are non-digital or non-commercial. Currently, games are being more frequently created and analysed in the disciplines of HCI, nursing and economics. We should also encourage other disciplines to create games as part of their scholarship.

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REFERENCES

Addis, D. R. and Schacter, D. L. (2008), 'Constructive episodic simulation: Temporal distance and detail of past and future events modulate hippocampal engagement', *Hippocampus*, 18:2, pp. 227–37.

ADL (2019), 'Free to play? Hate, harassment, and positive social experiences in online games', December, https://www.adl.org/free-to-play. Accessed 1 July 2021.

ADL (2020), 'Free to play? Hate, harassment, and positive social experiences in online games 2020', December, https://www.adl.org/free-to-play-2020. Accessed 1 July 2021.

Adroher, N. D., Prodinger, B., Fellinghauer, C. S. and Tennant, A. (2018), 'All metrics are equal, but some metrics are more equal than others: A systematic search and review on the use of the term "metric"', *PLoS One*, 13:3, p. e0193861.

Bachen, C. M., Hernández-Ramos, P. F. and Raphael, C. (2012), 'Simulating REAL LIVES: Promoting global empathy and interest in learning through simulation games', *Simulation & Gaming*, 43:4, pp. 437–60.

Bailenson, J. (2018), *Experience on Demand: What Virtual Reality Is*, New York: Norton, 2018.

Baron-Cohen, S. and Wheelwright, S. (2004), 'The empathy quotient: an investigation of adults with Asperger syndrome or high functioning autism, and normal sex differences', *Journal of Autism and Developmental Disorders*, 34:2, pp. 163–75.

Batson, C. D. (1991), *The Altruism Question: Toward a Social-Psychological Answer*, Hillsdale, NJ: Erlbaum.

Belman, J. and Flanagan, M. (2010), 'Designing games to foster empathy', *Cognitive Technology*, 14:2, pp. 5–15.

Björk, S. and Holopainen, J. (2005), *Patterns in Game Design*, Hingham, MA: Charles River Media.

Bloom, P. (2017), 'Empathy and its discontents', *Trends in Cognitive Sciences*, 21:*1*, pp. 24–31.

Bowman, S. (2010), *The Functions of Role-Playing Games: How Participants Create Community, Solve Problems and Explore Identity*, New York, NY: McFarland.

Boyle, E. A., Hainey, T., Connolly, T. M., Gray, G., Earp, J., Ott, M., Lim, T., Ninaus, M., Ribeiro, C. And Pereira, J. (2016), 'An update to the systematic literature review of empirical evidence of the impacts and outcomes of computer games and serious games', *Computers & Education*, 94, pp. 178–92.

Bréjard, V., Bonnet, A. and Gaetan, S. (2016), 'Video games in adolescence and emotional functioning: Emotion regulation, emotion intensity, emotion expression, and alexithymia', *Computers in Human Behavior*, 61:C, pp. 344–49.

Brown, B. (2018), *Dare to Lead: Brave Work. Tough Conversations. Whole Hearts*, New York, NY: Penguin.

Chen, A. M. H., Kiersma, M. E., Yehle, K. S. and Plake, K. S. (2015), 'Impact of the geriatric medication game on nursing students' empathy and attitudes toward older adults', *Nurse Education Today*, 35:1, pp. 38–43.

Coavoux, S., Boutet, M. and Zabban, V. (2016), 'What we know about games: A scientometric approach to game studies in the 2000s', *Games and Culture*, 12:6, pp. 563–84, doi:10.1177/1555412016676661.

Copyright Intellect Ltd 2021
Not for distribution

JGVWV13N2_Text.indb 209 26-Jul-21 14:19:24

Coeckelbergh, M. (2007), 'Violent computer games, empathy, and cosmopolitanism', *Ethics and Information Technology*, 9:3, pp. 219–31.

Connolly, T. M., Boyle, E. A., MacArthur, E., Hainey, T. and Boyle, J. M. (2012), 'A systematic literature review of empirical evidence on computer games and serious games', *Computers & Education*, 59:2, pp. 661–86.

Corbin, J. and Strauss, A. (2014), *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 4th ed., Thousand Oaks, CA: Sage.

Core SEL Competencies (2019), https://casel.org/core-competencies/. Accessed on July 1, 2021.

Cragoe, N. G. (2016), 'RPG mythos: Narrative gaming as modern mythmaking', *Games and Culture*, 11:6, pp. 583–607.

Darvasi, P. (2016), 'Empathy, perspective and complicity: How digital games can support peace education and conflict resolution', *UNESCO MGIEP Working Paper 2016-03*, November, https://www.gcedclearinghouse.org/sites/default/files/resources/170025eng.pdf. Accessed 1 July 2021.

Davis M. (1983), 'Measuring individual differences in empathy: Evidence for a multidimensional approach', *Journal of Personality and Social Psychology*, 44:1, pp. 113–26.

Decety, J. and Jackson, P. L. (2004), 'The functional architecture of human empathy', *Behavioral Cognitive Neuroscience Review*, 3:2, pp. 71–100.

Decety, J. and Moriguchi, Y. (2007), 'The empathic brain and its dysfunction in psychiatric populations: Implications for intervention across different clinical conditions', *BioPsychoSocial Medicine*, 1, p. 22.

Dodge, T. (2011), 'Effects of interactivity on children's cognitive empathy toward narrative characters', *International Journal of Instructional Media*, 38:3, p. 287.

Edele, A., Dziobek, I. and Keller, M. (2013), 'Explaining altruistic sharing in the dictator game: The role of affective empathy, cognitive empathy, and justice sensitivity', *Learning and Individual Differences*, 24, pp. 96–102.

Entertainment Software Association (2019), 'Essential facts about the computer and video game industry', https://www.theesa.com/esa-research/2019-essential-facts-about-the-computer-and-video-game-industry. Accessed 20 July 2020 (link no longer available).

Farber, M. and Schrier, K. (2017), *The Strengths and Limitations of Using Digital Games as 'Empathy' Machines*, New Delhi: UNESCO Mahatma Gandhi Institute of Education for Peace and Sustainable Development.

Field, S. (2017), 'Critical empathy through oral histories after apartheid', *Continuum*, 31:5, pp. 660–70.

Fink, A. (2019), *Conducting Research Literature Reviews: From the Internet to Paper*, 5th ed., Thousand Oaks, CA: Sage.

Flanagan, N. and Nissenbaum, H. (2014), *Values at Play in Digital Games*, Cambridge, MA: MIT Press.

Gaesser, B. (2013), 'Constructing memory, imagination, and empathy: A cognitive neuroscience perspective', *Frontiers in Psychology*, 3, doi:10.3389/fpsyg.2012.00576.

Gerdes, K. E., Segal, E. A., Jackson, K. F. and Mullins, J. L. (2011), 'Teaching empathy: A framework rooted in social cognitive neuroscience and social justice', *Journal of Social Work Education*, 47:1, pp. 109–31.

Gerrig, R. J. (1993), *Experiencing Narrative Worlds: On the Psychological Activities of Reading*, New Haven, CT: Yale University Press.

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Not for distribution

JGVWV13N2_Text.indb 210 26-Jul-21 14:19:24

1. Gerrig, R. J. and Prentice, D. A. (1991), 'The representation of fictional information', *Psychological Science*, 2:5, pp. 336–40.
2. Green, M. C. and Brock, T. C. (2000), 'The role of transportation in the persuasiveness of public narratives', *Journal of Personality and Social Psychology*, 79:5, pp. 701–21.
3. Greitemeyer, T. and Osswald, S. (2010), 'Effects of prosocial video games on prosocial behavior', *Journal of Personality and Social Psychology*, 98:2, pp. 211–21.
4. Greitemeyer, T., Osswald, S. and Brauer, M. (2010), 'Playing prosocial video games increases empathy and decreases schadenfreude', *Emotion*, 10:6, pp. 796–802.
5. Guo, Q. and Feng, L. (2017), 'The associations between perceived parenting styles, empathy, and altruistic choices in economic games: A study of Chinese children', *Frontiers in Psychology*, 8, p. 1843.
6. Hainey, T., Connolly, T. M., Boyle, E. A., Wilson, A. and Razak, A. (2016), 'A systematic literature review of games-based learning empirical evidence in primary education', *Computers & Education*, 102, pp. 202–23.
7. Hall, J. A. and Schwartz, R. (2018), 'Empathy present and future', *The Journal of Social Psychology*, 159:3, pp. 225–43.
8. Harth, J. (2017), 'Empathy with non-player characters? An empirical approach to the foundations of human/non-human relationships', *Journal of Virtual Worlds Research*, 10:2, pp. 1–25.
9. Hess, J. L. and Fila, N. D. (2016), 'The manifestation of empathy within design: Findings from a service-learning course', *Codesign*, 12:1&2, pp. 93–111.
10. Huizinga, J. ([1938] 1955), *Homo Ludens: A Study of the Play-Element in Culture*, Boston, MA: Beacon Press.
11. Isbister, K. (2016), *How Games Move Us: Emotion by Design*, Cambridge, MA: MIT Press.
12. Kors, M. J. L., Ferri, G., van der Spek, E. D., Ketel, C. and Schouten, B. A. M. (2016), 'A breathtaking journey: On the design of an empathy-arousing mixed-reality game', in *Proceedings of the 2016 Annual Symposium on Computer-Human Interaction in Play – CHI PLAY '16*, Austin, Texas, October 2016, Association for Computing Machinery, Inc, pp. 91–104, doi.org/10.1145/2967934.2968110.
13. Lepron, E., Causse, M. and Farrer, C. (2015), 'Responsibility and the sense of agency enhance empathy for pain', *Proceedings: Biological Sciences*, 282:1799, pp. 20142288.
14. Maclagan, P. (2003), 'Varieties of moral issue and dilemma: A framework for the analysis of case material in business ethics education', *Journal of Business Ethics*, 48:1, pp. 21–32.
15. Mahood, C. and Hanus, M. (2017), 'Role-playing video games and emotion: How transportation into the narrative mediates the relationship between immoral actions and feelings of guilt', *Psychology of Popular Media Culture*, 6:1, pp. 61–73.
16. Marinova, D., Singh, S. K. and Singh, J. (2018), 'Frontline problem-solving effectiveness: A dynamic analysis of verbal and nonverbal cues', *Journal of Marketing Research*, 55:2, pp. 178–92.
17. Martin, V. S. (2008), 'Online videogames in an online history class', *Proceedings of the 2008 Second IEEE International Conference on Digital Game and Intelligent Toy Enhanced Learning (DIGITEL '08)*, IEEE Computer Society, Banff, Canada, November 2008, pp. 146–48, doi:10.1109/DIGITEL.2008.46.

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JGVWV13N2_Text.indb 211 26-Jul-21 14:19:24

Murphy, S. T., Frank, L. B., Moran, M. B. and Patnoe-Woodley, P. (2011), 'Involved, transported, or emotional? Exploring the determinants of change in knowledge, attitudes, and behavior in entertainment-education', *Journal of Communication*, 61:3, pp. 407–31.

Noddings. N. (2010), 'Moral education and caring', *Theory and Research in Education*, 8:2, pp. 145–51.

Noyes, J. A., Welch, P. M., Johnson, J. W. and Carbonneau, K. J. (2020), 'A systematic review of digital badges in healthcare education', *Medical Education*, 54:7, pp. 600–15.

Okoli, C. (2015), 'A guide to conducting a standalone systematic literature review', *Communications of the Association for Information Systems*, 37:43, pp. 879–910.

Oswald, P. (1996), 'The effects of cognitive and affective perspective taking on empathic concern and altruistic helping', *The Journal of Social Psychology*, 136:5, pp. 613–23.

Papamitsiou, Z. and Economides, A. A. (2014), 'Learning analytics and educational data mining in practice: A systematic literature review of empirical evidence', *Journal of Educational Technology & Society*, 17:4, pp. 49–64.

Pavliscak, P. (2018), *Emotionally Intelligent Design: Rethinking How We Create Products*, New York, NY: O'Reilly Media.

Plewe, C. and Fürsich, E. (2018), 'Are newsgames better journalism?: Empathy, information and representation in games on refugees and migrants', *Journalism Studies*, 19:16, pp. 2470–87.

Read, H. (2019), 'A typology of empathy and its many moral forms', *Philosophy Compass*, 14:10, n.pag., doi:10.1111/phc3.12623.

Riley, K. L. (1998), 'Historical empathy and the holocaust: Theory into practice', *International Journal of Social Education*, 13:1, pp. 32.

Roxworthy, E. (2014), 'Revitalizing Japanese-American internment: Critical empathy and role-play in the musical "Allegiance" and the video game "Drama in the Delta"', *Theatre Journal*, 66:1, pp. 93–115.

Ruberg, B. (2020), 'Empathy and its alternatives: Deconstructing 'empathy' in video games', *Communication, Culture, Critique*, 13:1, pp. 54–71.

Rusch, D. (2017), *Making Deep Games: Designing Games with Meaning and Purpose*, Boca Raton, FL: CRC Press/Taylor & Francis.

Rusch, D. (2019), Personal interview with the authors.

Saldana, J. (2015), *The Coding Manual for Qualitative Researchers*, 3rd ed., New York, NY: SAGE.

Salen, K. and Zimmerman, E. (2003), *Rules of Play: Game Design Fundamentals*, Cambridge, MA: MIT Press.

Sampat, E. (2017), *Empathy Engines: Design Games That Are Personal, Political, and Profound*, Seattle, WA: CreateSpace.

Schrier, K. (2015), 'EPIC: A framework for using video games for ethics education', *Journal of Moral Education*, 44:4, pp. 393–424.

Schrier, K. (2017), 'Designing role-playing video games for ethical thinking', *Educational Technology Research and Development*, 65:4, pp. 831–68.

Schrier, K. (June 2019), 'Designing ourselves: Identity, bias, empathy, and game design', ADL Whitepaper, https://www.adl.org/designing-ourselves. Accessed on June 30, 2021.

Schrier, K. (2021), *We the Gamers: How Games Teach Ethics and Civics*, New York, NY: Oxford University Press.

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JGVWV13N2_Text.indb 212 26-Jul-21 14:19:24

Schrier, K. and Farber, M. (2019), 'Open questions for games and empathy', *Connected Learning Summit 2018 Conference Proceedings*, August, 2018, Boston, MA; Pittsburgh, PA: ETC Press (Carnegie Mellon), doi:10.1184/R1/7793804.v1.

Shin, D. and Ahn, D. (2013), 'Associations between game use and cognitive empathy: A cross-generational study', *Cyberpsychology, Behavior and Social Networking*, 16:8, p. 599.

Sousa, D. and Tomlinson, C. A. (2017), *Differentiation and the Brain: How Neuroscience Supports a Learner-Friendly Classroom*, 2nd ed., Bloomington, IN: Solution Tree.

Suits, B. (1978), *The Grasshopper: Games, Life and Utopia*, Ontario, CA: Broadview Press.

Szpunar, K. K. and Schacter, D. L. (2012), 'Get real: Effects of repeated simulation and emotion on the perceived plausibility of future experiences', *Journal of Experimental Psychology: General*, 142:2, pp. 323–7.

Tomlinson, C. A. and Murphy, M. (2018), 'The empathetic school', *ASCD Educational Leadership*, 75:2, pp. 20–27.

Tong, X., Ulas, S., Jin, W., Gromala, D. and Shaw, C. (2017), 'The design and evaluation of a body-sensing video game to foster empathy towards chronic pain patients', in *Proceedings of the 11th EAI International Conference on Pervasive Computing Technologies for Healthcare (PervasiveHealth '17)*, May 2017, Barcelona, Spain, Association for Computing Machinery, pp. 244–50, doi:10.1145/3154862.3154869.

Turkle, S. (2011), *Alone Together: Why We Expect More from Technology and Less from Each Other*, New York, NY: Basic Books.

de Vos, B., van Zomeren, M., Gordijn, E. H. and Postmes, T. (2013), 'The communication of "pure" group-based anger reduces tendencies toward intergroup conflict because it increases out-group empathy', *Personality and Social Psychology Bulletin*, 39:8, pp. 1043–52.

Wang, W., Singh, K., Chu, Y. and Huber, A. (2016), 'Educating bicycle safety and fostering empathy for cyclists with an affordable and game-based VR app', in *Proceedings of the 18th International Conference on Human-Computer Interaction with Mobile Devices and Services Adjunct (MobileHCI '16)*, September 2016, Florence, Italy, Association for Computing Machinery, pp. 883–90, doi:10.1145/2957265.2961846.

Wilde, P. and Evans, A. (2019), 'Empathy at play: Embodying posthuman subjectivities in gaming', *Convergence: The International Journal of Research into New Media Technologies*, 25:5&6, pp. 791–806.

Wiseman, T. (1996), 'A concept analysis of empathy', *Journal of Advanced Nursing*, 23:6, p. 1162.

Xiao, Y. and Watson, M. (2019), 'Guidance on conducting a systematic literature review', *Journal of Planning Education and Research*, 39:1, pp. 93–112.

Zaki, J. (2017), 'Moving beyond stereotypes of empathy', *Trends in Cognitive Sciences*, 21:2, pp. 59–60.

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