5   Game-comics and comic-games

Against the concept of hybrids

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Comics and digital games have been among the most important arenas of popular culture throughout the past decades and have influenced each other in diverse ways. Comics based on computer games have become commonplace just as much as games based on comics, running the gamut from collaborations of high-profile artists released by major publishers to mass-produced glorified promotional material and fan-created or underground works. Besides these spin-offs, tie-ins, fan fictions, and other forms of engagement traditionally identified as adaptations, we also find a variety of cases of interrelation, from simple references to complex blended forms, all of which frequently reflect explicitly upon their expressive specificities. In other words, they are spread across the whole range of intermediality, broadly defined by Werner Wolf as "any transgression of boundaries between conventionally distinct media" (2011, 3). To Wolf (drawing on Marie-Laure Ryan [2005]), a medium is "a conventionally and culturally distinct means of communication," characterized by "the use of one or more semiotic systems," and pragmatically relevant because "media make a difference as to what kind of content can be evoked, how these contents are presented, and how they are experienced" (Wolf 2011, 2).

How are we to make sense of the overwhelming diversity of connections between comics and digital games? How do we arrive at an understanding of them as "conventionally distinct media," and how does this characterization impact the way we discuss their interrelation? Given the complexities at play—including the fact that comics in their own right pose a challenge to intermediality (Kukkonen 2011)—it is not surprising that only little research on these issues exists. In the authoritative text on the subject, Daniel Merlin Goodbrey describes the phenomenon as a process of digitalization and hybridization of comics, at the center of which exists "a hybrid of the two forms, a game comic [which] must exhibit some of the key characteristics of games and some of the key characteristics of the form of comics" (2017, 126). Goodbrey's work is invaluable for the study of the encounter between games and comics, and it deserves all the recognition usually bestowed upon such groundbreaking efforts. At the heart of Goodbrey's argument are, however, a number of ideas that warrant additional consideration. In the following,

I will raise a number of general issues of conceptual categorization in the humanities. That I use Goodbrey's research as a starting point for this discussion is not meant as a critique of his work. On the contrary, without its daring exploration of two notoriously undefinable forms of expression and its willingness to confront definitional and systematic problems, the phenomena discussed here would be much more difficult to take into focus.

Already the question of how to refer to the phenomena under scrutiny is far from trivial. Goodbrey approaches the subject matter as a scholar and creator of comics, and accordingly, his vision of an idealized hybrid would be a "game comic" and not a "comic game." While the necessity to settle for one of the two possible orders of the two terms is a linguistic inevitability, it still implicitly characterizes the object as something that is rather a comic than a game. This finer point of nomenclature seems to me indicative of general challenges we encounter wherever we observe a coincidence of traits we associate with comics and games. As W. J. T. Mitchell famously observed with regard to the relationship of image and text, typography carries enormous meaning in such cases, as different spellings—divided by a slash, compounded into one word, or hyphenated—signify, respectively, "[r]upture, synthesis, relationship" (2012, 1). According to Mitchell's logic, Goodbrey is searching for the *synthesis* of a "comicgame" that would best express the field of *relationships* of the "comic-game." But in the course of this search, he is trying to circumnavigate the *ruptures* of "comic/game" aporias. How do we make sense of this phenomenon, then, and how should we speak about it? Should we distinguish between "comic-game" and "game-comic," between "comicgame" and "gamecomic"? What character can these categories have—can they be definitional, descriptive, or heuristic? In other words, are they one thing or a class of things, a continuum of related examples, or an umbrella term for very different phenomena? Are general approaches of adaptation, transmediality, or intermediality sufficient to analyze them, or do we need a more medium-specific vocabulary?

In the following, I will address many of these questions and propose a specific terminology and a set of categories meant to clear up some of the categorical murkiness inevitable in a large and complicated field as the one discussed here. The overall train of thought is that the metaphor of the hybrid is a commonsensical but ultimately detrimental way of characterizing the relation between games and comics because it glosses over essential differences and because it carries biologistic and genealogic connotations. After discussing the central problems with applying the concept of hybridity to game-comics and comic-games, particularly because of the conflation of set theory and prototype theory, I will show that these arise from general challenges of classifying complex cultural phenomena. After this theoretical overview, I will use examples to demonstrate that for categorization and analysis, the concept of hybrid is unnecessary on both the generic and the individual level. Over the course of my argument, it will become apparent that attributing a privileged degree of importance of comics or digital games

for a group of examples or a particular example will always run the risk of over-emphasizing this dimension over other, equally important facets, while naturalizing and obscuring this heuristic act by resorting to a metaphor that insinuates biologic, hereditary clarity.

Hybridity and prototype theory

Research into the relationship between comics and games has been relatively limited. It speaks to the real-world relevance of the topic that practical guides for adaptation of games into comics (Goodman 2004) and manga (Cavallaro 2010) as well as for didactic uses of games and comics (Jost and Krommer 2011) are quite numerous. Some of these contain advanced theoretical (Vandermeersche 2011) and ethnographic (Jones 2018) research. Still, there are surprisingly few in-depth studies of individual examples (e.g., Corstorphine 2008) and even fewer systematic inquiries into particular aspects of the relationship between games and comics (e.g., Taylor 2004).

Within this research context, Goodbrey's aforementioned work stands out as the fundamental inquiry into the topic. His study connects theoretical considerations with his own practice as a comics artist and game designer, and he presents several prototypes of (not exclusively digital) games to demonstrate the artistic as well as academic breadth of the issue. He identifies four central challenges: digital technology, architectural spatiality, ludic structures, and audible soundtracks (Goodbrey 2017, 1). Especially the first and the last challenge are equally relevant for digital comics in general—a category that encompasses webcomics, eComics, and digitalized archives of existing comics (Wilde 2015, 2)—as well as for motion comics (Morton 2015). The architectural dimension refers to the spatiality generally attributed to digital narratives (Murray 1998), which Goodbrey primarily connects to hypertextual structures with their need for user navigation (Goodbrey 2017, 99). Goodbrey determines the ludic dimension based on Jesper Juul's classic game model, i.e., primarily on rules and a quantifiable outcome (Juul 2005, 36).

The four central challenges Goodbrey identifies interrelate with one another and influence, individually as well as together, other contemporary forms of culture in ways that make them appear less distinct than they are. For instance, the primate of spatiality to which Goodbrey refers is often taken as typical of digital games, but it is just as important for electronic literature and nonludic virtual environments (including their origins, amusement parks). Goodbrey resolves this problem through a hierarchical structure of the criteria: Digitality is to him the precondition of the whole phenomenon, whereas audible soundtracks are a surface phenomenon of secondary importance. Primarily, he engages with spatiality and ludic elements, and with the question of how they work independently as well as in conjunction. The basic nontraditional comics form in this respect is the hypercomic, "a comic with a multicursal narrative structure" (Goodbrey 2017, 87).

This multicursal structure is not dependent on digital technology; it can be created by distributing comics panels in a physical space, e.g., an art gallery. It does not need to have ludic goals or quantifiable outcomes, either, but can be completely based on choice (or randomness) and focused on storytelling, not success or failure. Goodbrey's narrower category of "game comics" is a special type of hypercomics: "A game comic is a type of hypercomic that exhibits some of the key characteristics of a game and uses some of the key characteristics of the form of comics as the basis for its gameplay" (2017, 123)—it is, Goodbrey stresses, "a hybrid of the two forms" (2017, 126).

There are two major issues with Goodbrey's definition. The first issue concerns his characterization of game comics as hybrids, while the second one is the combination of the idea of "key characteristics" with definitions that build on family resemblance or prototypical thinking.

Theoretical problems of concepts of hybridity

Hybridity is a well-established, widely-used concept, which beyond its home domain of biology has come to indicate a blend of otherwise rather distinct yet hard to define concepts.[1] Some applications of this conceptual metaphor have become indispensable in humanistic scholarship, such as referring to the clash between identity politics and ideas of national, ethnic, or other normalization strategies as cultural hybridity (Bhabha 2004). In other cases, especially outside of culture and media studies—think of the idea of new hybrid professions in economy (Colley and Guéry 2015)—it is often an unreflected shorthand formula. In media studies, it is a technical term introduced by Marshall McLuhan, even if a broad and affirmative one: To him, a media hybrid is something ubiquitous, namely "the interpenetration of one medium by another" (1964, 51). In other words, every encounter between two media produces a hybrid, a process McLuhan likens to a moment of fusion or fission in that it sets free immense energies: "The hybrid or the meeting of two media is a moment of truth and revelation from which new form is born" (1964, 55).

In this tradition, hybridity has become a rather indiscriminate figure of thought. What this results in is the recursive use of the concept: In media theory and, by extension, comics studies, phenomena tend to become (implicitly) characterized as hybrids of hybrids. Goodbrey speaks of "the hybrid hypercomic format" (2017, 26), just as he identifies gallery comics "as a hybrid format that combines the form of comics with the qualities typical to many examples of installation art" (2017, 98). He explicitly draws on Thon's observation that "digital media with their characteristically hybrid nature […] do not obliterate the notion of conventionally distinct media" (2014, 336), and he refers to Thierry Smolderen (2014), Hannah Miodrag (2013), and Robert C. Harvey (2001), who all speak of the general hybridity of comics (Goodbrey 2017, 19)—as do other theorists, including Charles Hatfield (2009, 133) and Thierry Groensteen (2009, 7). The use of "hybrid"

in this fashion is indeed widespread. Neil Cohn (2013, 88) characterizes storyboards as hybrids of comics and film, while Craig Smith (2015) sees motion comics as a hybrid of comics and animation. Drew Morton not only affirms that motion comics are a "truly equal hybrid of animation and the comic" (2015, 364), he attests to them the ability to further hybridize into "motion comic/motion book hybrids" (2015, 350).

The rhetoric of the hybrid has found prominent use with regard to digital games, as well. Espen Aarseth, one of the leading figures in the field of game studies, has characterized digital games as hybrids in more than one respect. A narrative digital game is, according to him, neither simply a game or a (hyper)text, but instead a "story-game hybrid" (Aarseth 2004, 50), negotiating the openness of play with the (multi)linearity of an authored narrative. Going even further, he outlines that a digital game is in general "a piece of software that does contain, among other things, a game" (Aarseth 2012, 130), similarly evoking the idea of a hybrid or container.

By this line of reasoning, game comics would be hybrids of, on the one side, hybrids (hypercomics) of hybrids (comics) of hybrids (digital media), and, on the other, hybrids (story-games) of hybrids (games in software artifacts).[2] This raises, at least to me, both the question of the usefulness of such a categorization as a hybrid of hybrids and of the general applicability of biologistic metaphors for categorizing complex cultural artifacts. Does our understanding of how these two forms coincide benefit from the label of a hybrid? If we wanted to operationalize this kind of thinking, would we not need to be able to distinguish categorically between different forms of hybridization, thus creating categories that would be rather clearly defined instead of indistinct hybrids?

Key characteristics of a family resemblance?

The second issue with considering game comics a hybrid form is the criteria for forming this categorization. Goodbrey delimits the concept very strictly. He eventually only identifies a small handful of (mostly older) examples that "meet the criteria of game comics, operating both as comics and as games of progression. But in both cases the mechanics of gameplay and the characteristics of the form of comics remain relatively separate" (Goodbrey 2017, 126). He arrives at this strictly delimited corpus of examples by setting explicitly formulated qualitative boundaries: "The resulting game comics are not just games that are also comics, but games that make specific use of some of the key characteristics of the form of comics in the mechanics of their gameplay" (Goodbrey 2017, 127). The seven key characteristics of comics he identifies (based on an extensive literature review of well-regarded definitions) are: space as time, simultaneous juxtaposition of images, closure between images, spatial networks, reader control of pacing, tablodic images, and word and image blending (Goodbrey 2017, 44). For digital games, Goodbrey adopts Juul's classic game model, which operates with six

characteristics: rules, quantifiable outcome, valorization of outcome, player effort, player attachment to outcome, and negotiable consequences (Juul 2005, 36). The criteria themselves are not of primary importance here, but rather the way in which they are applied. Goodbrey admits, as mentioned, very few existing games into the category of game comics because he applies the seven comics characteristics and six game characteristics very stringently. At the same time, he stresses with regard to his definition of comics that the "resulting model is not intended as an exclusory summation of the form and as such it allows for the study of comic formats that do not demonstrate all seven characteristics" (Goodbrey 2017, 162).

There are two problems with this unequal treatment of game comics and comics in general. First, it implies that while game comics are supposed to be a finite and clearly delimited phenomenon, a much less strict delimitation is accepted for comics. By this logic, game comics are expected to be more prototypical of the form than non-game-related comics. Secondly, it calls into question the nature of the characteristics: When applied as a means of rigorous exclusion of most examples, they would seem to stand for necessary and sufficient conditions; when treated as nonexclusory, they describe family resemblances (in the Wittgensteinian sense).

Again, it is not Goodbrey who is at fault here; the definition of comics is notoriously difficult and contested. The viewpoint of comics as a hybrid of words and images has already been discussed, but approaches that try to identify comics as a distinct medium are similarly problematic:

> Despite the constitutive vagueness inherent in the fundamental question of how comics can be conceptualised as a medium, the fact remains that they are generally treated "as conventionally distinct means of communicating cultural content" and, hence, can be considered to be media that are "conventionally perceived as distinct," even though—or, rather, precisely because—their mediality is "not entirely predictable from semiotic type and technological support."
>
> (Thon and Wilde 2016, 234)

As a result, there are at least three distinct and not always compatible lines of argumentation for the existence of comics as a medium (Holbo 2014; Thon and Wilde 2016): semiotic-communicative formalism in the vein of Scott McCloud (1993), conventional-institutional historicism as practiced by Aaron Meskin (2014), and material-technological approaches such as Christian Bachmann's (2016). The two latter scholars trace the problems with defining comics to even more foundational media-ontological questions when they problematize the difference between an issue of a comic and one individual copy of the same issue (Meskin 2014) or the aesthetic dependence of comics on the specificities of their technical media (Elleström 2010, 30–33).

These different approaches "let 'comics' be ambiguous between *genus* (McCloud's medium) and *species* (Meskin's history)" (Holbo 2014, 4,

original emphasis). And this pluralism makes it all but inevitable to err on the side of inclusivity when determining criteria for the form. Taking Neil Cohn's definition as an example,

> a "comic" can use any combination of writing and images: single images, sequential images, some writing, no writing, dominated by writing, etc. In fact, all permutations of these combinations appear in objects we call "comics." Ultimately, the definition of comics includes a network of ideas composed of their subject matter, format, readership, history, industry, the specific visual languages they use, and other cultural characteristics.
>
> (Cohn 2013, 2)

That Cohn's "network of ideas" echoes, intentionally or not, Wittgenstein's "complicated network of similarities" (Wittgenstein 1958, 32) is not surprising at all. Cohn's method operates, after all, not with hard criteria assumed to be shared by all members of a group, but with a much fuzzier set of parameters—i.e., aforementioned Wittgensteinian family resemblances.

Definitions of games are equally difficult and multifaceted (Arjoranta 2015; Stenros 2015), with family resemblance as a consensual middle ground (Arjoranta 2019), comparable to the definitional situation in comics studies. Taking Brenda Brathwaite and Ian Schreiber's definition as an example, the similarities to Cohn's argument are unmistakable:

> A game is an activity with rules. It is a form of play often but not always involving conflict, either with other players, with the game system itself, or with randomness/fate/luck. Most games have goals, but not all (for example, *The Sims* and *SimCity*). Most games have defined start and end points, but not all (for example, *World of Warcraft* and *Dungeons & Dragons*). Most games involve decision making on the part of the players, but not all (for example, *Candy Land* and *Chutes and Ladders*).
> (Brathwaite and Schreiber 2009, 28)

This approach seems almost inevitable given the wide range of phenomena discursivized as games and the ongoing diversification of digital games in particular. The publication of independent games like *Dear Esther* (2012) and *Proteus* (2013) has led to the emergence of the (sometimes pejoratively used) category of "walking simulator" for artifacts that use the formal language of first-person shooter games yet remove both combat elements and ludic goals. The question of whether or not walking simulators are games continues to be debated, especially among fans. Yet the existence of a shared identity is not only doubtful for (digital) games in general. Even within a series of digital games, we might not find any shared "gameness": The top-down action-adventure *Castle Wolfenstein* (1981), the original first-person shooter *Wolfenstein 3D* (1992), its most recent sequel *Wolfenstein II: The*

New Colossus (2017), and its promotional browser game *Du Hast Strife* (2016) share virtually no common elements.

Even Juul's model, chosen by Goodbrey for its strong claims and clear categories, emerges as less than rigid upon closer inspection. Juul's model only claims to encompass "the way games have traditionally been constructed" (Juul 2005, 23), which means that it is "no longer all there is to games. With the appearance of role-playing games, where a game can have rules interpreted by a game master, and with the appearance of video games, the game model is being modified in many ways" (Juul 2005, 53). While the "vast majority of things called 'games' are found in the intersection of the six features of the game model" (Juul 2005, 52), Juul includes a wide range of "borderline cases"—otherwise, the vast majority of digital games would not qualify as "games."

Prototype theory and knowledge organization

By formulating a definition for a core concept of games while allowing for a grey area of borderline phenomena, Juul uses prototype theory in all but name. Other game scholars, particularly those working on the Game Ontology Project throughout the late 2000s, explicitly identified prototype theory as ideally suited for the discussion of digital games (Zagal et al. 2008). Prototype theory is a systematized and empirically validated version of Wittgenstein's family resemblance, developed by Eleanor Rosch in the 1970s through a series of anthropological experiments (Andersen et al. 1996, 351–353). Historically speaking, it is a reaction against linguistic and cognitive formalism, which its proponents see as "an attempt to impose formal syntax and formal semantics on the study of language and human reason in a particular way, which, as we have seen, is empirically inadequate" (Lakoff 1987, 219). Against that rigid logocentrism, prototype theory formulates the "idea that members of a category may be related to one another without all members having any properties in common that define the category" (Lakoff 1987, 12).

This way of forming categories is exactly what we find in much of game studies and comics studies, with prominent examples quoted above. A widespread methodical mistake—found in Goodbrey's as well as Juul's arguments—is a combination of prototype theory and thinking in key characteristics as they are used in set theory. As Rosch's experiments show, a category of objects is cognitively constructed not based on "some set of defining features, but a sufficient degree of resemblance to each other" (Hampton 2006, 80). Dissimilarity is, however, as important for categorization as similarity. Attempting to rely on similarity alone "would fail for the very same reasons that necessary and sufficient conditions fail. Categories may exist where different pairs of members have different things in common, and some members may even have some of these things in common with members of other categories" (Andersen et al. 1996, 351). While it is true

that from this process a prototype emerges, this does not mean that some examples are absolute prototypes of a category: "[T]he prototype should better be considered as a more abstract, generic concept, that was constituted from the different ways in which the category members resembled each other, and differed from non-members" (Hampton 2006, 80).

That scholars nonetheless mix prototype theory with more traditional methods of knowledge organization seems to be rooted in a fear of anti-theoretical iconoclasm. It might not be immediately apparent how much of a provocation to traditions of categorization prototype theory entails. As linguists and philosophers regularly point out, prototype theory has a strong anti-definitionist implication in that it is based not on an epistemological but on an ontological assumption about the undefinability of objects and object classes by traditional means—it does not proclaim that no generally shared traits can be found, but that they do not exist. This is felt by (especially analytic) philosophers to be an imposition of psychologist epistemologies and to stand in the way of precise scholarly discourse (Adajian 2005, 234), and their critiques of prototype theory go very far in presenting it as unscientific.

Much of the philosophical criticism is based on the same subconscious combination or conflation of prototype theory and traditional categorization methods we can observe in applications of the concept. One of the most vocal critics, Thomas Adajian, observes that

> because the prototypes of complex concepts are usually not a function of their constituent concepts' prototypes, [prototype theory] lacks an adequate account of conceptual combination. Standard example: the prototype associated with the concept PET FISH is goldfish. The prototype associated with PET is cats and dogs, and the prototype associated with the concept FISH is something more like a trout. So it is hard to see how PET FISH could be a function of the prototypes associated with its component concepts.
>
> (Adajian 2005, 234)

Adajian's criticism might seem reasonable, but it stems from expecting prototype theory to adhere to traditional paradigms of categorization. He approaches the formulation of prototypes in terms of set theory and statistics, assuming that a composite concept must be a subset of its component concepts, and that it must necessarily be a combination of the most common specimen. In other words, he misinterprets prototypes for reified objects instead of generic concepts derived from complex networks of (dis)-similarity. The concept of "pet fish" is not the intersection of "pet" and "fish" (which would be set theory), and neither is it based on the most common house animals and their shared traits (which would be a statistical approach). It is an original concept that draws on the two related (yet not hierarchically superior) concepts, not by recombination, but by its own set of (dis) similarities.[3]

To fully understand the critiques of prototype theory and the problems resulting from combining it with other forms of categorization, we need to take one further step back and consider knowledge organization in itself. In the most general terms, distrust against prototype theory stems from the distinction between conceptual classification and systematic classification. The former is "the process of distinguishing and distribution kinds of 'things' into different groups" (Hjørland 2017, n.p.)—a quotidian task every human being performs countless times a day. The latter is based on this yet strives to establish a classification system, essentially making systematic classification the academic specialization of the everyday practice of conceptual classification. Systematic classification has, in the Aristotelian tradition, been based on the notion that an entity either is or is not a member of a particular class, the basis of mathematical set theory. If only one aspect is considered in distinguishing a higher-order "concept (*genus*) into several extensions corresponding to as many concepts of lower generality (*species*)" (Marradi 1990, 129, original emphasis), the result is a classification scheme; if several aspects are considered simultaneously, the result is a typology; and if several aspects are considered in succession, the result is a taxonomy.

Birger Hjørland identifies four approaches to classification in the *Encyclopedia of Knowledge Organization* (2017): rationalism, where subjects can be constructed logically based on fundamental attributes, as is possible for mathematical objects; empiricism, where groups are formed based on statistically derived common properties of elements, as practiced in Mendelian biology; historicism, where groups are formed based on common genealogy, dominant in contemporary biology; and pragmaticism, where groups are formed based on critical reflection of the purpose of the classification, acknowledging the value-laden and inevitably reductive nature of all classification. The different approaches have their distinct limitations. As Hjørland discusses, rationalism only is applicable to logical or synthetic concepts, not the contradicting complexity of real-world objects. Historicism implies a natural order and thus depends on actual genetic relations because it otherwise runs the risk of establishing revisionist "grand récits" that (intentionally or not) mistake an ideology for natural order. Empiricism produces blunt distinctions because "similarity" can be ambiguous beyond the capabilities of statistical criteria: If a black square, a white square, and a black triangle are to be categorized based on their similarity, the precedence of color or shape is not given a priori or deducible from the objects themselves, but is based on the purpose of the categorization. Thus, the categorization of such objects is inherently pragmatist. It follows that pragmatism is the only adequate approach to classification of complex cultural products, and that these classifications depend on an acute awareness of their purpose and application.

Based on this, both the misrepresentation of prototype theory by rationalist, empiricist, and historicist scholars as well as its subversion by methods from these areas become explicable. The significant departure from

philosophical traditions as well as the difference in subject matter create hurdles that are not immediately apparent and that produce either resistance or confusion.[4] Prototype theory is not applicable to every domain but lends itself to pragmatic categorization especially with regard to natural language, complex social or artistic concepts, as well as other domains characterized by four general traits: vagueness (fuzziness of borders and uncertainty about exact categorization criteria), typicality (differing degrees to which examples represent the concept), genericity (traits identified as typical of a class of objects are not found in all members), and opacity (categorization based on implicit, tacit rules instead of explicit, formalized ones) (Hampton 2006, 84). It is, in other words, the systematic classification method that is closest to simple conceptual classification, which makes it simultaneously commensurate for the analysis of domains with the highest complexity and less rigid and formalized than traditional methods.

Examples and discussion

To sum up my (admittedly long-winded) theoretical argument: Soft definitions based on family resemblance or prototype theory are incompatible with "key element" arguments. If both comics and digital games are defined based on prototypicality, there can be no universally identifiable key components or traits. If those existed, we would be able to define games unequivocally (necessary and sufficient criteria). By a similar token, treating game-comics and comic-games as hybrids implies a certain degree of media essentialism by assuming that they are "distinct" or "conventionally considered distinct" media with some core properties.

After demonstrating the pitfalls of this line of reasoning on a theoretical basis, I want to use a variety of examples to illustrate its practical implications, as well as alternatives. I will break down the discussion into two segments: First, I will deal with the use of "hybrid" for the field of game-comics and comic-games; second, I move on to a narrower use of the term for a specific type of example, much like Goodbrey does.

Game-comics and comic-games as a hybrid genre?

As a figure of speech, every example that bears traces of digital games and comics might be referred to as a hybrid, in the sense that its analysis would tend to draw on knowledge and methods from the study of both forms. Obviously, even a less strict use of a concept cannot be all-encompassing, so that it makes sense to identify two closely related concepts that serve as conceptual borders: animation and hypertext.

Comics are static texts that do not necessarily have to originate in a print medium but can be reproduced in print without any loss because they only insinuate movement. Animation, on the other hand, "is not a making move of what lies beneath the surface, but a making move that is evident in and

through the movement of surfaces" (Malpas 2014, 74). Whereas comics are fundamentally an arrangement of individual, distinct images, "animation is based not in the image as such, but in the movement between otherwise static images" (Malpas 2014, 75). As the discussion surrounding motion comics shows (Morton 2015; Smith 2015), the addition of movement (and sound) to comics images calls into question the categorization of an object as a comic, so that it seems reasonable to consider digital games that have strong and obvious ties to animated film (and not comics) as a separate matter. One canonical game example would be the arcade classic *Dragon's Lair* (1983), which prominently uses animation created by Don Bluth's studio. At the other end of the spectrum, the two comic book series (Johnston and Shy 2010; Johnston and Templesmith 2013) based on the game franchise *Dead Space* (2008–2013) would be more immediately relevant than the two animated feature films based on the games, *Dead Space: Downfall* (2008) and *Dead Space: Aftermath* (2011)—even though the latter were written by the game's story author Antony Johnston. In a study of digital games and graphic arts, visual storytelling, animation, or franchised storytelling, these examples should be centrally included. When discussing the interrelation of digital games and comics, however, phenomena that are unquestionably animated films would be considered peripheral.

According to this logic, it is heuristically beneficial not to equate hypertexts with digital games. Because the latter often present multilinear narratives, the distinction is sometimes blurred, but the brief reminder that hypertextual structures underlie all websites illustrates the need for upholding the distinction: Shopping on Amazon or navigating through *YouTube* is not the same as playing games, not even in a less prototypical sense. For the digital version of Jason Shiga's *Meanwhile* (2013) or the award-winning issue #17 of *The Unwritten* (Carey and Gross 2010) with its nonlinear structure, the context of games might be less meaningful than that of experimental hypertext narratives. This becomes more apparent when comparing them with an actual game book containing not only plot-level decision-making but diverse ludic challenges and fail states like *Sherlock Holmes & Moriarty associés* (CED and Boultanox 2015), or pen-and-paper role-playing games illustrated and distributed in the format of comics like *Rolled and Told* (Thomas 2019).

Both distinctions are, however, hard to uphold. Nearly every digital game animates the on-screen representation of characters and objects to convey their movement when they are used as game objects. At the same time, many nonprototypical digital games and even whole genres are little more than hypertexts. The visual novel, a game genre particularly popular in Japan, "consists largely of text [and] elements that do not appear on the computer screen at all" (Cavallaro 2010, 11), with little to no ludic elements, yet is nonetheless produced and distributed as digital games. A categorical delimitation of comic-games and game-comics as a genre of its own will therefore have to remain very tentative.

Using the terminology of hybrids for more particular groups of examples within this larger field is similarly problematic, not the least because what we encounter there can often be productively framed in the more specific and well-established terms of intermedia or transmedia research. For example, Irina Rajewsky's (2005) distinction between media combination, media transposition, and intermedia references is directly applicable to specimens from the game-comic and comic-game continuum.

Intermedia references are most obvious in games that cite a well-known comics series without actually adapting any specifics of the referenced work, e.g., *Corto Maltese: Secrets of Venice* (2014). *Max Payne* (2001) contains references to a fictional comic strip to thematize the discourse of comics collectors and consequence-less cartoon violence. Comic books have their characters play and discuss digital games as a means of characterization, e.g., in *Runaways* #1 (Vaughan and Alphona 2003), or as a metaphorical counterpoint to the main narrative, as in *Top 10* #8 (Moore and Ha 2000). Some examples, notably *Scott Pilgrim's Precious Little Life* (O'Malley 2004), take a more systemic approach and refer less to individual digital games than to digital games and nerd culture as a whole.

Media combination is prototypically found in *Max Payne*, which integrates complete comics sequences within the mixed-media arrangement of the software to replace or complement narrative passages executed as live action or animated cutscenes. The opposite case, the inclusion of digital games in comics, is obviously more complicated, especially when dealing with print comics. However, some major publications, e.g., the Italian *Topolino* (1932–), have distributed physical media like CD-ROMs or provided internet portals with games since the 1990s.

Media transposition, Rajewsky's term for different kinds of adaptation, is especially wide-spread and generally encompasses some elements of intermedia reference and media combination. Successful game series like *Tomb Raider* (1996–) have been adapted by major publishing houses and have inspired countless fan-made adaptations. *World of Warcraft* (2004) fan comics are hosted and moderated exclusively by game publisher Blizzard (Jones 2018, 131–171). Blizzard's somewhat restrictive regulations of content have led creators to experiment formally and treat much wider topics than those found in the game, which is why "*WoW* fan-comics can potentially represent a plethora of game genres" (Jones 2018, 133). Digital games not only adapt the iconography and narrative of comics but often strive to translate their characteristics into gameplay. The game *Batman: Arkham Asylum* (2009) is a very liberal adaptation of the plot of its source material (Morrison and McKean 2004), but it includes gadgets, investigation, and unarmed combat that together implement a gameplay commensurate to the myth, iconography, and narrative conventions of the "system Batman" (Brooker 2012). Even more system-oriented adaptations, such as *X-Men Legends II: Rise of Apocalypse* (2005), may be based on a limited run of issues, yet they constantly reference the much greater context of their

narrative universes, even in explicit form such as trivia challenges about the history of the X-Men. From there, it is only a small step to *Freedom Force* (2002) or *City of Heroes* (2004), which use the genre of superhero comics and its conventions without direct genetic relations to any existing comics.

A comparable systemic adaptation of style instead of content can be observed, as well: *XIII* (2003), the digital game based on William Vance und Jean Van Hamme's comics series of the same name (1984–2009), evokes its comic book roots by using flat colors and strong outlines for its game world, as well as comics panels and sound words as part of the interface—none of which is typical of Vance and Van Hamme's books but is doubtlessly meant to evoke a certain "comicness." Again, there is an even more system-oriented transposition to be found, which might be called a pastiche in Genette's (1997, 78) use of the term (i.e., a nonsatirical imitation of style). Some digital games evoke the aesthetics of comics without having any content that originates in comic books or making any explicit reference to comics or their culture. *Borderlands* (2009) is a particularly successful example of using three-dimensional graphics with textures and post-processing that evoke drawings.

Particular examples as hybrids in a narrow sense?

The previous section has demonstrated that examples that bear traits of or refer to comics and digital games are too diverse to be classified, altogether, as one hybrid genre or type, but that they can be productively categorized and thus functionally distinguished through established concepts of intermediality. Goodbrey's idea of hybrids is, however, formulated as a narrower category. To qualify, an example needs to exhibit "some of the key characteristics of a game and use […] some of the key characteristics of the form of comics as the basis for its gameplay" (Goodbrey 2017, 123). Goodbrey employs this as an artistic constraint in the creation of comics, and his research operates with several prototypes by which he approximates the ideal formulated in this definition of game-comic hybrids. The final prototype, which comes closest to the envisioned goals, is *The Empty Kingdom* (2014). Animation is kept minimal, sound is used mostly to increase the usability of the software, panel structures are formative for the overall aesthetic, and there is certainly some gameplay (including world navigation, light puzzle solving, basic inventory management, and item use). It is easy to see why the result satisfies Goodbrey's definition, but if we want to identify *The Empty Kingdom* as a hybrid of digital games and comics, then it is one of very atypical forms of both: a silent comic walking simulator, so to speak.

This is not necessarily a problem when keeping prototype theory in mind, as there the question anyway is not "Is this a game?" or "Is this a comic?" but "How (a)typical a game or a comic is this, and how does it adhere to or depart from our prototypical understanding?" It calls into question, in yet another way, the usefulness of the metaphor of hybrids for analytical

purposes. Taking the idea of Goodbrey's ideal hybrid literally, it would mean that the artifact in question would have all the "necessary properties" of a comic and a digital game. Given that "digital games" is, as shown before, an inevitably inclusive and wide concept, including many forms that even by Juul's standards are not games in the narrow sense, this raises a logical conundrum. Speaking of hybrids implies, in an epistemological irony central to Bruno Latour's theories (Blok and Jensen 2012), the idea of distinct, pure forms that in turn hybridize. If we process artifacts that merely use navigational, distributional, techno-infrastructural, or other peripheral factors associated with "digital games proper" as "digital games," then any hybrid—i.e., any phenomenon considered a candidate for this hybridization between "digital games" and "comics"—already bears enough resemblance to a "digital game proper" to be a "digital game" and not a hybrid with anything else. The other way around: What would a nonhybrid "digital game" look like? What would its "purity" manifest in?

In terms of analytical process, one dimension of an artifact will always be foregrounded by studying it in relative isolation—which is what focusing on the traditions of comics in analyzing a digital game (and vice versa) amounts to. There is, however, nothing that would essentially, ontologically make a "game comic hybrid" any different from any other digital game, especially when following through on the logic of hybridization. Simply put: Goodbrey's reflections and conclusions are absolutely successful in the context of his research-through-design. Yet while the hybrid concept is a powerful asset for creation, as an analytical category, it is rather fraught, if not downright misleading.

At best, the concept is a meaningful starting point for the few examples that might be surmised to have been created with this particular idea in mind. *Comix Zone* (1995) is one of the earliest and best-known digital games to strongly and explicitly embrace comics in visuals, discourse, and gameplay logic. The game's premise is that a comic book artist swaps places with the arch villain of his stories and has to fight his way through the hordes of mutants that would otherwise have faced the protagonist of his comics. *Comix Zone*'s game mechanics are those of a side-scrolling fighting game with some puzzle-solving elements, but its game environments consequently adhere to the premise of being (inside) a comic book. Instead of rooms, the game has panels, and instead of levels, the player has to finish pages. The physicality of the printed page is essential to movement through the game world and to some game mechanics. The avatar has to forcefully jump or climb across the gutters separating individual panels, while the other comic book characters cannot cross them at all and the avatar can hurt them by throwing them into these virtual walls. Some gutters are even destructible, bursting into shreds of paper that rain across the page, the same way vanquished opponents do. Similarly, the villain paints opponents into the game world, his (black-and-white) hand hovering above the page. When

the avatar reaches the very final panel of the game, it remains unfinished because the villain-cum-artist has to abandon his or her work and re-enter the comic book world. Apart from all these references to and transpositions of comic book materiality, narrative conventions of comics are a formative influence, as evidenced by the game progress being measured in a "superhero meter." *Comix Zone* unquestionably invites its players to think of it as a liminal space of digital game and comic book, yet it is, for all intents and purposes, a digital game as much as any other fighting game of its generation. If its creators had perceived it as an actual hybrid or even a comic book in its own right, there would hardly have been the need to create an additional promotional comic that turns the comics-based game into a game-based comic (Foster 2012).

Similar observations could be made about the few other games that explicitly embrace the logic and aesthetic of comics to a degree that suggests they are conceived as hybrids. The independent browser games *Treadsylvania* (2011) and *Strip 'Em All* (2013) as well as the perpetually in-development *Storyteller* (2013; see Benmergui 2013) are explicitly about comics and digital games, and they leave little doubt about their experimental nature. The only truly commercially successful pertinent example, the mobile game *Framed* (2014), blends comics and games in an equally interesting way but without foregrounding comics materiality or narrative traditions, drawing instead on film noir for stylistic inspiration while employing the spatio-temporal logic of closure through frame transition as a puzzle-solving mechanic. This strategy can be equally observed in *Lovecraft Quest: A Comix Game* (2018), which uses comics panels as an interface for a remake of the text-adventure *Hunt the Wumpus* (1973) and recontextualizes the narrative within Lovecraftian mythology. Approaching these examples with the a priori assumption that comics are of elevated importance for them is legitimate insofar as they often encourage such a reading through their titles or other paratexts. At the same time, this can distract from other, potentially more promising avenues of inquiry. During its development, the connection of *Lovecraft Quest: A Comix Game* to *Hunt the Wumpus* was made explicit, yet with its publication, the developers no longer referenced the inspiration (potentially because of copyright concerns), thus obscuring a crucial influence.

This is all the more true for examples where even the creators might not be aware of traditions into which they inscribe their products. Both Goodbrey's *A Duck Has an Adventure* (2012) and Jason Shiga's *Meanwhile* have been identified by their creators as hypercomics, yet their branching movement along paths of panels bears just as much resemblance to the century-old tradition of goose games in Europe (Ryan 2007) and the game of knowledge in India (Schmidt-Madsen 2019). Interpreting *Gorogoa* (2017) as alluding to comics is similarly not wrong yet still obscures the equally strong legacy of physical puzzles, from slide puzzles to Rubik's Cube. And discussing the

obvious indebtedness of *Sentinels of the Multiverse* (2014) to superhero comics runs the risk of ignoring that it is, just as importantly, a digital game based on an analogue game.

The nexus of comics and digital games is such an accepted factor in popular culture at this point that it is easy to see comics everywhere, even if the reference is far from clear. *Darkest Dungeon* (2016) uses minimally animated characters in an animation style clearly inspired by motion comics, but its supernatural horror themes and its art style point just as much toward woodcut and stained-glass windows as influences. In the case of *What Remains of Edith Finch* (2017), the "Barbara" episode unambiguously references horror comics in content and style, while the ludic aesthetic of its context—an episodic walking simulator with varied game mechanics—appears at least as essential for its interpretation. An analogous case in which not the mere structure, but the level of material media needs to come into focus, is *Metal Gear Solid: Digital Graphic Novel* (2006). Interpreting this example as merely a software adaptation of the (game-based) print comic (Oprisko and Wood 2006) would exclude the motion comic's platform-dependence, as it was released exclusively on Sony's PlayStation Portable, making it a game-based comic that can only be read on gaming hardware by using an interface closely resembling that of the adapted game. All these factors combine when approaching the complex constellation of influences and sources in LEGO digital games: Attempting to analyze a self-conscious meta-game like *LEGO Batman 2: DC Super Heroes* (2012) as an adaptation of Batman comics without taking into account the material and cultural significance of the building block toys would be to drastically misread these games (Nørgård and Toft-Nielsen 2014; Wolf 2014).

This brief overview should show that a categorization of examples as game-comic hybrids is facile because the surface-level presence of both forms is easily spotted, more so than many other noteworthy influences. Instead of assuming that hybridization between digital games and comics is a stable category that constitutes the basis for a specific approach to these phenomena, the coincidence of perceived traits of both forms should prompt the granular analysis of artifacts as complex objects in their own right, reserving judgement on the significance of games or comics until a thorough analysis has been conducted.

Conclusion

This chapter has taken Goodbrey's exploration of the intersection of games and comics as a starting point to argue against the usefulness of "media hybrids" for analytical purposes. It bears stressing again that this in no way is meant to critique the quality or value of Goodbrey's work; his practice-driven approach simply has different goals, needs, and priorities than a purely analytical one.

The core argument presented here is that, when keeping in mind that both digital games and comics are always already hybridized, there is nothing to be gained by analyzing complex media artifacts based on an a priori classification as a "hybrid of hybrids." When used conscientiously for a very specific, clearly delimited phenomenon—as Goodbrey does in his own creative work, or as others have done with regard to other phenomena such as the "Comicfilm" (Sina 2016)—this strategy can be successful. Less method-aware research will, however, run the risk of mistaking a conceptual classification—heuristically identifying comics and digital games, two undefinable objects, by taking recourse to their prototypical understanding—as a systematic category with its own identity. There would be ample opportunity to explore related yet essentially different concepts like cognitive blends (Kankainen et al. 2017) as alternatives to hybrids, and one could obviously take completely different approaches to the issue, e.g., a discourse-historical one of analyzing self-statements of creators, descriptions of distributors, and characterizations of critics, as Philippe Gauthier (2011) does in an investigation of early animated drawings. What I tried here was to demonstrate where the concept of hybrids creates logical friction, to pinpoint potential analytical blind spots, and to show how both issues can be avoided through prototype theory and bias-aware analyses.

What this comes down to is a radicalization of Hayles's (2004) call for even more pervasively media-specific analysis. There is definitely the need to pay "increased attention to materiality" wherever "the specificity of the medium comes into play as its characteristics are flaunted, suppressed, subverted, reimagined" (Hayles 2004, 87). As this study of game-comic phenomena has shown, they cannot comfortably be identified either as a medium in their own right or as a hybrid of other media. They can be commensurately approached only by paying close attention to their particularity—not that of a genus or species, but that of an individual that might elude stable, meaningful categorization. Given how diverse the phenomena discussed here are—let alone the countless additional examples that already exist and will surely emerge in the years to come—Hayles's concluding observation rings equally true on a less generic and more individual level: "In the tangled web of medial ecology, change anywhere in the system stimulates change everywhere in the system" (2004, 87). Every new "hybrid" recombines the vast expressive repositories of its two alluded domains in new ways while situating itself in a far bigger context of potentially even more important influences.

Ultimately, the argument presented here is not without a certain irony because the insistence on the status of individual, highly specific examples instead of subsuming them under an ill-fitting umbrella term is, in spirit, very close to Bhabha's highly influential humanistic use of the hybrid-concept as "the empty third space, the other space of symbolic representation, at once bar and bearer of difference" (2004, 101). This abstract idea of hybridity

is radical, revolutionary, and empowering—and maybe something that we should hold on to even if we abandon the idea of the comic-game hybrid.

Notes

1 This has created a tradition in which "hybrid" becomes a default categorization. One prominent example is Bolter and Grusin's mischaracterization of Mitchell's "imagetext" as a hybrid (Bolter and Grusin 1999, 30), a phenomenon for which he explicitly uses the term synthesis (Mitchell 2012, 1).
2 I'm indebted to Andreas Rauscher for pointing out another complicating factor: What McLuhan describes is the process of hybridization, out of which new singular and individual forms emerge. McLuhan and most other theorists, however, use hybrid as a noun, which solidifies the idea of a derivative, unoriginal form.
3 Adajian's critique is just as easily defused, though, by following his own logic: That cats and dogs are more prototypical of the concept of "pet" than lizards and snakes is surely correct, but particularly the types of dogs prototypical of the concept of "pet" will be rather terriers than shepherds (which might be pets, but more prototypical of working animals). As such, "pet dog" implies such attributes as small to medium size and a compatibility with an urban lifestyle—attributes that when applied to fish certainly don't suggest prototypical big fish like trouts or sharks.
4 There is, however, also a political component to the different understandings of conceptualization connected to different subject matters: The philosophical practice of establishing a framework for categorization is an abstract, objective, detached, and value-neutral process. For scholars of cultural products, the case is less abstract because including or excluding a particular specimen from a socially shared concept of diverse creators and recipients is tantamount to proclaiming authority over this discourse. In operations with abstract values and formulas, clear definitions are as essential as they are unproblematic. In discussions of socioculturally formed discursive categories, things are less simple.

Works cited

Aarseth, Espen J. 2004. "Genre Trouble: Narrativism and the Art of Simulation." In *First Person: New Media as Story, Performance, and Game*, edited by Noah Wardrip-Fruin and Pat Harrigan, 45–55. Cambridge, MA: MIT Press.

Aarseth, Espen J. 2012. "A Narrative Theory of Games." In *Proceedings of the International Conference on the Foundations of Digital Games*, edited by Magy S. El-Nasr, 129–133. New York: ACM.

Adajian, Thomas. 2005. "On the Prototype Theory of Concepts and the Definition of Art." *Journal of Aesthetics and Art Criticism* 63 (3): 231–236.

Andersen, Hanne, Peter Barker, and Xiang Chen. 1996. "Kuhn's Mature Philosophy of Science and Cognitive Psychology." *Philosophical Psychology* 9 (3): 347–363.

Arjoranta, Jonne. 2015. "Real-Time Hermeneutics: Meaning-Making in Ludonarrative Digital Games." PhD thesis, University of Jyväskylä, Finland. https://jonne.arjoranta.fi/repository/Arjoranta2015d.pdf (accessed 31 January 2020).

Arjoranta, Jonne. 2019. "How to Define Games and Why We Need To." *The Computer Games Journal* 8 (3–4): 109–120.

Bachmann, Christian A. 2016. *Metamedialität und Materialität im Comic: Zeitungscomic – Comicheft – Comicbuch*. Berlin: Ch. A. Bachmann Verlag.

Backe, Hans-Joachim. 2012. "Vom Yellow Kid zu Super Mario: Zum Verhältnis von Comics und Computerspielen." In *Comics Intermedial*, edited by Christian Bachmann, Véronique Sina, and Lars Banhold, 147–157. Essen: Ch. A. Bachmann Verlag.

Batman: Arkham Asylum. 2009. Developed by Rocksteady Studios. Published by Eidos Interactive and Warner Bros. Interactive Entertainment. Windows.

Benmergui, Daniel. 2013. "Storyteller: A Game about Building Stories." www.storyteller-game.com/p/about-storyteller.html (accessed 20 June 2019).

Bhabha, Homi K. 2004. *The Location of Culture*. Abingdon: Routledge.

Blok, Anders, and Torben E. Jensen. 2012. *Bruno Latour: Hybrid Thoughts in a Hybrid World*. Abingdon: Routledge.

Bolter, J. David, and Richard A. Grusin. 1999. *Remediation: Understanding New Media*. Cambridge, MA: MIT Press.

Borderlands. 2009. Developed by Gearbox. Published by 2K Games. Windows.

Brathwaite, Brenda, and Ian Schreiber. 2009. *Challenges for Game Designers*. Boston: Course Technology PTR.

Brooker, Will. 2012. *Hunting the Dark Knight: Twenty-First Century Batman*. London: I. B. Tauris.

Carey, Mike, and Peter Gross. 2010. *The Unwritten* #17: *The Many Lives of Lizzie Hexam: A Choose-a-Story Adventure*. New York: Vertigo.

Castle Wolfenstein. 1981. Developed and published by Muse Software. Apple II.

Cavallaro, Dani. 2010. *Anime and the Visual Novel: Narrative Structure, Design and Play at the Crossroads of Animation and Computer Games*. Jefferson: McFarland.

CED, and Boultanox. 2015. *Sherlock Holmes & Moriarty associés*. Pont-à-Mousson: Makaka Éditions.

City of Heroes. 2004. Developed by Cryptic Studios. Published by NCSOFT. Windows.

Cohn, Neil. 2013. *The Visual Language of Comics: Introduction to the Structure and Cognition of Sequential Images*. London: Bloomsbury.

Colley, Helen, and Frédérique Guéry. 2015. "Understanding New Hybrid Professions: Bourdieu, Illusio and the Case of Public Service Interpreters." *Cambridge Journal of Education* 45 (1): 113–131.

Comix Zone. 1995. Developed and published by Sega. Sega Genesis.

Corstorphine, Kevin. 2008. "'Killer7' and Comic Book Aesthetics in Contemporary Video Games." *International Journal of Comic Art* 10 (1): 68–73.

Corto Maltese: Secrets of Venice. 2014. Developed by Kids Up Hill. Published by BulkyPix. Windows.

Darkest Dungeon. 2016. Developed by Red Hook. Published by Merge Games. Windows.

Dead Space: Aftermath. 2011. Dir. Mike Disa. USA: Anchor Bay Entertainment.

Dead Space: Downfall. 2008. Dir. Chuck Patton. USA: Anchor Bay Entertainment.

Dear Esther. 2012. Developed and published by The Chinese Room. Windows.

Dragon's Lair. 1983. Developed and published by Cinematronics. Arcade Game.

A Duck Has an Adventure. 2012. Developed by Daniel M. Goodbrey. Published by E-merl.com. Android.

Du Hast Strife. 2016. Developed and published by Midnight Oil. Browser game.

Elleström, Lars. 2010. "Modalities of Media: A Model for Understanding Intermedial Relations." In *Media Borders, Multimodality and Intermediality*, edited by Lars Elleström, 11–48. Basingstoke: Palgrave Macmillan.

The Empty Kingdom. 2014. Developed by Daniel M. Goodbrey. Published by Kongregate. Browser. www.kongregate.com/games/stillmerlin/the-empty-kingdom (accessed 31 January 2020).

Foster, Aaron. 2012. "Comix Zone Promotional Comic Strip." http://sega-memories. blogspot.de/2012/02/comix-zone-promotional-comic-strip.html (accessed 20 June 2019).

Framed. 2014. Developed and published by Loveshack Games. iOS.

Freedom Force. 2002. Developed by Irrational Games. Published by Crave Entertainment. Windows.

Gauthier, Philippe. 2011. "A Trick Question: Are Early Animated Drawings a Film Genre or a Special Effect?" *Animation* 6 (2): 163–175.

Genette, Gérard. 1997. *Palimpsests: Literature in the Second Degree*. Lincoln: University of Nebraska Press.

Goodbrey, Daniel M. 2017. "The Impact of Digital Mediation and Hybridisation on the Form of Comics." PhD thesis, University of Hertfordshire, UK. http://e-merl. com/thesis/DMGthesis2017web.pdf (accessed 31 January 2020).

Goodman, Jonah. 2004. "Video Games to Comics: How to Make the Perfect Transition." *Sequential Tart* 7 (9). www.sequentialart.com/archive/sept04/rdm_ 0904.shtml (accessed 14 February 2012).

Gorogoa. 2017. Developed by Jason Roberts. Published by Annapurna Interactive. Windows.

Groensteen, Thierry. 2009. "Why Are Comics Still in Search of Cultural Legitimization?" In *A Comics Studies Reader*, edited by Jeet Heer and Kent Worcester, 3–11. Jackson: University Press of Mississippi.

Hampton, James A. 2006. "Concepts as Prototypes." In *Psychology of Learning and Motivation* 46: 79–113.

Harvey, Robert C. 2001. "Comedy at the Juncture of Word and Image: The Emergence of the Modern Magazine Gag Cartoon Reveals the Vital Blend." In *The Language of Comics: Word and Image*, edited by Robin Varnum and Christina T. Gibbons, 75–96. Jackson: University Press of Mississippi.

Hatfield, Charles. 2009. "An Art of Tensions." In *A Comics Studies Reader*, edited by Jeet Heer and Kent Worcester, 132–148. Jackson: University Press of Mississippi.

Hayles, N. Katherine 2004. "Print Is Flat, Code Is Deep: The Importance of Media-Specific Analysis." *Poetics Today* 25 (1): 67–90.

Hjørland, Birger. 2017. "Classification." In *Encylopedia of Knowledge Organization*, edited by Birger Hjørland and Claudio Gnoli, n.p. Toronto: International Society for Knowledge Organization. www.isko.org/cyclo/classification (accessed 31 January 2020).

Holbo, John. 2014. "Redefining Comics." In *The Art of Comics: A Philosophical Approach*, edited by Aaron Meskin and Roy T. Cook, 3–30. Chichester: Wiley-Blackwell.

Hunt the Wumpus. 1973. Developed by Gregory Yob. Published by People's Computer Company. Basic.

Johnston, Antony, and Christopher Shy. 2010. *Dead Space: Salvage*. San Diego: IDW.

Johnston, Antony, and Ben Templesmith. 2013. *Dead Space*. London: Titan Books.

Jones, Roger D. 2018. *Developing Video Game Literacy in the EFL Classroom: A Qualitative Analysis of 10th Grade Classroom Game Discourse*. Tübingen: Narr.

Jost, Roland, and Axel Krommer, eds. 2011. *Comics und Computerspiele im Deutschunterricht: Fachwissenschaftliche und fachdidaktische Aspekte*. Baltmannsweiler: Schneider Hohengehren.

Juul, Jesper. 2005. *Half-Real: Video Games between Real Rules and Fictional Worlds*. Cambridge, MA: MIT Press.

Kankainen, Ville, Jonne Arjoranta, and Timo Nummenmaa. 2017. "Games as Blends: Understanding Hybrid Games." *Journal of Virtual Reality and Broadcasting* 14 (4): n.p. www.jvrb.org/past-issues/14.2017/4694 (accessed 31 January 2020).

Kukkonen, Karin. 2011. "Comics as a Test Case for Transmedial Narratology." *SubStance* 40 (124): 34–52.

Lakoff, George. 1987. *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind*. Chicago: University of Chicago Press.

LEGO Batman 2: DC Super Heroes. 2012. Developed by Traveller's Tales. Published by Warner Bros. Interactive Entertainment. Windows.

Lovecraft Quest: A Comix Game. 2018. Developed and published by Ogurec Apps. Windows.

Malpas, Jeff. 2014. "With a Philosopher's Eye: A 'Naive' View on Animation." *Animation* 9 (1): 65–79.

Marradi, Alberto. 1990. "Classification, Typology, Taxonomy." *Quality and Quantity* 24 (2): 129–157.

Max Payne. 2001. Developed by Remedy. Published by Rockstar Games/Gathering of Developers. Windows.

McCloud, Scott. 1993. *Understanding Comics*. New York: Harper Collins

McLuhan, Marshall. 1964. *Understanding Media: The Extensions of Man*. New York: McGraw-Hill.

Meanwhile. 2013. Developed by Jason Shiga. Published by Zarfhome. iOS.

Meskin, Aaron. 2014. "The Ontology of Comics." In *The Art of Comics: A Philosophical Approach*, edited by Aaron Meskin and Roy T. Cook, 31–46. Chichester: Wiley-Blackwell.

Metal Gear Solid: Digital Graphic Novel. 2006. Developed by Kojima Productions. Published by Konami. PlayStation Portable.

Miodrag, Hannah. 2013. *Comics and Language: Reimagining Critical Discourse on the Form*. Jackson: University Press of Mississippi.

Mitchell, W. J. T. 2012. "Image X Text." In *The Future of Text and Image: Collected Essays on Literary and Visual Conjunctures*, edited by Ofra Amihay and Lauren Walsh, 1–11. Newcastle upon Tyne: Cambridge Scholars Publishing.

Moore, Alan, and Gene Ha. 2000. *Top 10* #8. La Jolla: Wildstorm.

Morrison, Grant, and Dave McKean. 2004. *Arkham Asylum: A Serious House on Serious Earth*. London: Titan Books.

Morton, Drew. 2015. "The Unfortunates: Towards a History and Definition of the Motion Comic." *Journal of Graphic Novels and Comics* 6 (4): 347–366.

Murray, Janet H. 1998. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. Cambridge, MA: MIT Press.

Nørgård, Rikke T., and Claus Toft-Nielsen. 2014. "Gandalf on the Death Star: Levels of Seriality between Bricks, Bits, and Blockbusters." *Eludamos: Journal for Computer Game Culture* 8 (1): 171–198. www.eludamos.org/index.php/eludamos/article/view/vol8no1-11 (accessed 6 December 2015).

O'Malley, Bryan L. 2004. *Scott Pilgrim's Precious Little Life*. Portland: Oni Press.

Oprisko, Kris, and Ashley Wood. 2006. *The Complete Metal Gear Solid*. San Diego: IDW.

Proteus. 2013. Developed and published by Ed Key and David Kanaga. Windows.

Rajewsky, Irina O. 2005. "Intermediality, Intertextuality, and Remediation: A Literary Perspective on Intermediality." *Intermédialités* 6: 43–64.

Ryan, Marie-Laure. 2005. "Media and Narrative." In *The Routledge Encyclopedia of Narrative Theory*, edited by David Herman, Manfred Jahn, and Marie-Laure Ryan, 288–292. Abingdon: Routledge.

Ryan, Marie-Laure. 2007. "Jeux narratifs, fictions ludiques." *Intermédialités* 9: 15–34.

Schmidt-Madsen, Jacob. 2019. "The Game of Knowledge: Playing the Spiritual Liberation in 18th- and 19th-Century Western India." PhD thesis, University of Copenhagen, Denmark. https://static-curis.ku.dk/portal/files/221758034/Ph.d._afhandling_2019_Schmidt_Madsen_bd.1.pdf (accessed 31 January 2020).

Sentinels of the Multiverse. 2014. Developed by Handelabra and Greater Than Games. Published by Handelabra. Windows.

Sina, Véronique. 2016. *Comic – Film – Gender: Zur (Re-)Medialisierung von Geschlecht im Comicfilm*. Bielefeld: transcript.

Smith, Craig. 2015. "Motion Comics: The Emergence of a Hybrid Medium." *Writing Visual Culture* 7: n.p. www.herts.ac.uk/__data/assets/pdf_file/0018/100791/wvc-dc7-smith.pdf (accessed 31 January 2020).

Smolderen, Thierry. 2014. "Graphic Hybridization, the Crucible of Comics." In *The French Comics Theory Reader*, edited by Ann Miller and Bart Beaty, 47–61. Leuven: Leuven University Press.

Stenros, Jaakko. 2015. "Playfulness, Play, and Games: A Constructionist Ludology Approach." PhD thesis, Tampere University, Finland. https://trepo.tuni.fi/handle/10024/96986 (accessed 31 January 2020).

Storyteller. 2013. Developed by Daniel Benmergui. Unpublished [Alpha]. iOS.

Strip 'Em All. 2013. Developed by Ola Hansson. Published by Athletic Design. Browser. www.athleticarcade.com/stripemall/index.html (accessed 20 June 2019).

Taylor, Laurie N. 2004. "Compromised Divisions: Thresholds in Comic Books and Video Games." *ImageTexT: Interdisciplinary Comics Studies* 1 (1): n.p. www.english.ufl.edu/imagetext/archives/v1_1/taylor/index.shtml (accessed 20 June 2019).

Thomas, Eric. 2019. *Rolled and Told* Vol. 1. St. Louis, MO: Lion Forge.

Thon, Jan-Noël. 2014. "Mediality." In *The Johns Hopkins Guide to Digital Media*, edited by Marie-Laure Ryan, Lori Emerson, and Benjamin J. Robertson, 334–337. Baltimore: Johns Hopkins University Press.

Thon, Jan-Noël, and Lukas R. A. Wilde. 2016. "Mediality and Materiality of Contemporary Comics." *Journal of Graphic Novels and Comics* 7 (3): 233–241.

Treadsylvania. 2011. Developed by NMSUCC. Published by Kongregate. Browser. www.kongregate.com/games/NMSUCC/treadsylvania?acomplete=treadsyl (accessed 20 February 2012).

Vandermeersche, G. 2011. "Intermediality as Cultural Literacy and Teaching the Graphic Novel." *CLCWeb: Comparative Literature and Culture* 13 (3): n.p. https://docs.lib.purdue.edu/clcweb/vol13/iss3/20/ (accessed 31 January 2020).

Vaughan, Brian K., and Adrian Alphona. 2003. *Runaways* #1. New York: Marvel Comics.

What Remains of Edith Finch. 2017. Developed by Giant Sparrow. Published by Annapurna Interactive. Windows.

Wilde, Lukas R. A. 2015. "Distinguishing Mediality: The Problem of Identifying Forms and Functions of Digital Comics." *Networking Knowledge* 8 (4): 1–15. https://ojs.meccsa.org.uk/index.php/netknow/article/view/386 (accessed 31 January 2020).

Wittgenstein, Ludwig. 1958. *Philosophical Investigations*. 3rd edition. Oxford: Blackwell.

Wolf, Mark J. P., ed. 2014. *LEGO Studies: Examining the Building Blocks of a Transmedial Phenomenon*. New York: Routledge.

Wolf, Werner 2011. "(Inter)Mediality and the Study of Literature." *CLCWeb: Comparative Literature and Culture* 13 (3): n.p. https://docs.lib.purdue.edu/clcweb/vol13/iss3/2/ (accessed 31 January 2020).

Wolfenstein II: The New Colossus. 2017. Developed by MachineGames. Published by Bethesda Softworks. Windows.

Wolfenstein 3D. 1992. Developed by id Software. Published by Apogee Software. MS-DOS.

World of Warcraft. 2004. Developed and published by Blizzard Entertainment. Windows.

XIII. 2003. Developed and published by Ubisoft. Windows.

X-Men Legends II: Rise of Apocalypse. 2005. Developed by Raven Software. Published by Activision. Windows.

Zagal, José P., Michael Mateas, Clara Fernández-Vara, and Brian Hochhalter. 2008. "Towards an Ontological Language for Game Analysis." *Proceedings of DiGRA 2005 Conference: Changing Views—Worlds in Play*: n.p. www.digra.org/dl/db/06276.09313.pdf (accessed 30 January 2012).