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Rubric and Metrics for Peer Reviewing Research Comics

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As comics-based research (CBR) gains wider use, methodological and practical guides have been developed to aid scholars in the creation of research comics. Similar support has not yet appeared for the other key element of scholarly publication: peer review. This article aims to build on the current best practices of CBR methodology to outline an easy-to-use tool which can bridge the gap between research comics and the non-CBR specialists who are called upon to evaluate them. While a peer reviewer may possess the expertise to evaluate the scientific validity of the research claims or results communicated logocentrically, they may feel unprepared to opine on the equally important visual plane due to the perceived subjectivity of graphics as pure art. The Form that Functions Rubric for Research Comics proposed in this article offers clear steps to move through the visual plane, neutral terminology to verbalize essential features of the visual plane, and several examples of the application of this rubric on existing research comics. By empowering reviewers and readers to approach the visual plane as a component of the scholarly argument rather than an aesthetic flourish, the peer review process of research comics can become more ethical and rigorous.

Introduction

A researcher reads Lydia Wysocki, Paul Fisher Davies, Nick Sousanis, Marcus Weaver-Hightower, Rachel Marie-Crane Williams and they decide to create a "research comic." They begin with character creation, as Davies recommends (Davies 2019), then they script the comic, as per Wysocki "applied comics" steps (Wysocki et al. 2021). They plan where to transmediate text into visual metaphor, inspired by Sousanis (Sousanis 2015), and they consider the ethical implications Williams warns about (Williams 2012), vowing to be truthful and unassuming in the presentation of their results, or honest about their own subjectivity. They provide a substantial methodological appendix, following the example set by Weaver-Hightower (Weaver-Hightower 2017), to explain their reasoning and choices, and to legitimize the methodology. The researcher draws in a realistic style, though wary of photorealism, with a sober color palette, and citations dangling off the edges of speech bubbles and captions, in the hopes that this evokes rigorous academic writing.

This researcher, dear reader, is me. And perhaps you as well, as we all move forward with comics-based research (CBR) as a field. As a discipline there is great enthusiasm for allowing scholars to experiment with formats to communicate their research results, and arts-based research methodological handbooks now include clear instructions on how to realize the aim of illustrating one's research results. It is no longer unusual to see a research comic in an academic journal, or to read the graphic edition of a popular non-fiction text, for example, Nora Krug's images made for Timothy Snyder's *On Tyranny* (Snyder and Krug 2021).

As a field, there are not yet clear guidelines on how to read and evaluate research comics. There have been many fabulous guides on how to read comics as literature, from the introductory level up to models of advanced critical analysis. There are also methodological guides on the creation of research comics within CBR and applied comics fields. More serious, technical questions arise there as well regarding rigor and best practice, both from the side of publishers providing guidelines and from the side of scholars using those guidelines while composing their research comics, and peer reviewers are expected to have the needed subject-matter expertise but may require extra orientation in the comics format. While journals accept graphic submissions, submission guidelines for research comics can often be unclear or irregular, with each proposal treated as a special case.

Considering the workflow of submitting research, if the final article will be in graphic form, it is strange to submit a traditional text proposal when the proposal and abstract could be graphic as well, but there are no conventions for how to correctly structure a graphic proposal. The author of a research comic often has to seek out extra information about image dimensions and resolution for the publication, not to mention

other issues such as an illustrated title and abstract, handwritten references, how to cite sources, and other labor-intensive details which are frustrating to change after the fact. Once submitted, despite being an expert in the relevant field, the peer reviewer may not feel prepared to criticize the graphics, will be hesitant to ask the author to redraw significant portions, or be unsure how to verbalize the issues they see with the graphics. Personally, with each research comic that I create, my greatest fear is that the graphics will be treated more as art than argument and skipped over in favor of providing feedback on the more comfortable textual plane. The most urgent issue in my eyes is peer review because it affects the ethics of the publishing process, thus that is what I will try to address most through this text and the proposed rubric.

This article is organized as follows. To provide a background of the issue, I will establish the need for a possible rubric which would focus the reader's attention not only on the text of the research comic, but on the images first and foremost. Then, I will review the current guidelines for submitting research comics for peer review, which are used by the prominent journals in comics studies. In the Methodology section, I will describe the criteria I used to establish the "Form that Functions Rubric for Research Comics" which is aimed at peer reviewers who have not previously evaluated research comics or students who are learning how to read research comics. The proposed rubric will be presented in full, and then I will give three case studies to represent a range of types of research comics which can be seen in the field: a traditional, narrative research comic, a non-narrative research comic, and a research comic with substantial visual abstraction. I will conclude with some considerations for the further development of such tools to optimize their utility in the field.

Background

Reading academic authors' reflections on their work process is rare, but when it appears it is very illuminating. The very first speech bubble in Rachel Marie-Crane Williams' "Can you picture this?" (Williams 2012: 87) spirals into worry if she can "make work that is congruent with the pressures of the academy?" The methodological appendix to "Losing Thomas and Ella: A Father's Story (A Research Comic)" (Weaver-Hightower 2017: 226–229) also immediately addresses the precarity of making a research comic, saying "a comic purporting to be 'research,' or research-based, resides in a sort of limbo [...]" (Weaver-Hightower 2017: 226) later elaborating in an echo of Williams' concerns:

> Can a comic be rigorous, informative research and be aesthetically pleasing or entertaining simultaneously? How might one best navigate tensions between producing comics and producing academic research (Weaver-Hightower 2017: 226)?

In these cases, the author-illustrators are solely responsible for creating a work which is acceptable by the academy, while the academy has not stated what the guidelines for acceptability are. Paul Kuttner, Nick Sousanis, and Marcus Weaver-Hightower note this issue in "How to Draw Comics the Scholarly Way," questioning "Who are the appropriate 'peers' to review CBR articles" (Kuttner et al. 2017: 412)? However, I would argue that the more essential question is how the peer review process for comic-format research can be accessible to scholars outside of the CBR field, because "peers" need to be able to step into the role, not pre-exist as a hypothetical. Kuttner, Sousanis, and Weaver-Hightower note the dual demands of credibility and authentic representation of the research in tandem with the "standards of aesthetic quality" (Kuttner et al. 2017: 412) suggesting that a reviewer or reader must also be ready to judge the artistic merit of the work, again without further guidance on what are acceptable graphic norms. Their chapter is not, however, focused on the peer review process, or on how to bridge gaps between experts in a field and the research comics they are asked to read. They conclude that:

> Whatever their paradigm, CBR practitioners should be able to explain their approach (whether visually or textually), helping readers understand how to interpret the relationship between the comic and the studies phenomenon (Kuttner et al. 2017: 412).

This again redirects the burden creating functional peer review to the author-illustrator, who is provided only some examples of research comics which have been accepted in the past, though popular wisdom cautions that each research comic is different, so these models may not apply to their work. In the approach suggested by this chapter, the author-illustrator must not only communicate their research, but also prepare a process for the peer reviewers to handle and judge their work. Weaver-Hightower tries to do with a four-page methodological appendix (Weaver-Hightower 2017, pp. 226–229), while other CBR scholars like Paul Fisher Davies decline from performing this step and provide no paratextual explanations of the graphic work (Davies 2019). With some scholars providing explanations, and others leaving the reader to decide, a peer reviewer who gives feedback on one research comic is not necessarily any better prepared to give feedback on another, creating a cycle where each new research comic is "peerless."

The aim of this article is to poke and prod at how we read and evaluate research comics. I hope to see more research comics published, read more responses to research comics, and watch heated graphic debates arise with full-color rebuttals. I would like to propose a simple rubric, inspired by Michael Pagliaro's rubric for assessing the literary quality of graphic novels (Pagliaro 2014: 41–42), which could be used as a framework for evaluating research comics in such a way that gives equal weight to

the academic rigor of the visual plane. The "Form that Functions Rubric for Research Comics" combines aspects seen in the 'best practice' models presented in "How to Draw the Scholarly Way" (Kuttner et al. 2017) and elements adapted from Davies' "New Choices for the Comics Creator" (Davies 2019) to direct the readers' attention, while creating clear "form that functions" metrics for readers to consider how the visual plane contributes to the veracity, authenticity, and argument of the research. Such a rubric could be a starting point for peer reviewers or students who are evaluating a graphic proposal for the first time, or for new scholars who know how to work critically with literary comics and would like to expand to non-fictional and research comics.

Across the majority of journals dedicated to comics studies, there is a lack of clarity on how to submit a research comic – I would like to separate these from the 'visual essay' format which is more likely to contain reflections rather than formal research – how it will be peer reviewed, or what a peer reviewer should consider when looking at such a proposed article. I do not mean this in an accusatory fashion, but rather I am trying to connect data to my own anecdotal experience and anxieties about the publication process. When deciding where to send my first research comic, I chose to submit it to *Comics Grid: Journal of Comics Scholarship* because there was a clear framework for submitting, whereas I had no way of knowing how other journals, with no stated parameters or guidelines, would handle such a submission. It is understandable why some editorial boards do not create guidelines, perhaps citing that they do not get so many graphic submissions to merit the extra guidelines, but I loosely hypothesize that this could be a vicious cycle where would-be authors do not see a pathway to submit graphic contributions, and thus it seems too risky for such a time-intensive project. Colleagues in the field, who I will quote anonymously, have had similar experiences, stating that it seemed a journal "kind of waved [the research] through," or more depressingly that they do not try to submit research comics "to be honest as there is no point." What the editors may see as a system which works for them may be a system which discourages submissions.

A survey of current guidelines yielded the following overview. Among the major comics studies journals in the field, I have found that *Comics Grid* has the strongest guidelines for submissions, which include additional materials for authors who may be illustrating for the first time. ("Submissions" n.d.) The peer review note states that the editors "will make sure that reviewers are aware of these submission processes," noting also that the special nature of graphic research "does not guarantee that submissions will go through the peer-review process successfully." ("Submissions" n.d.) The peer review process has an additional filter, in that all graphic submissions must first gain approval by the graphic editor Nicolas Labarre, which is also an opportunity for Dr. Labarre to provide specific feedback and direction on these submissions before the final

project is submitted to anonymous peer review. As a past contributor to this journal, it was my personal experience that the peer review feedback did include extensive notes about the graphic content from one reviewer who seemed especially prepared to analyze graphic submissions, which was separate from the standard system form used to organize peer review feedback on the journal's online submission management service.

The *Journal of Graphic Novels and Comics* states submission guidelines for an optional "graphical abstract:"

> This is an image to give readers a clear idea of the content of your article. For the optimal online display, your image should be supplied in landscape format with a 2:1 aspect ratio (2 length x 1 height). Graphical abstracts will often be displayed online at a width of 525px, therefore please ensure your image is legible at this size. Save the graphical abstract as a .jpg, .png, or .tiff. Please do not embed it in the manuscript file but save it as a separate file, labelled GraphicalAbstract1 ("Submit Your Article to the *Journal of Graphic Novels and Comics*" n.d.).

This could be extrapolated to technical guidelines for a whole research comic, but full guidelines are not stated, and there is no public information about the peer review process for graphic submissions. *Studies in Comics* has a similar approach, where the technical parameters of images are specified, and graphic submissions are identified as "creative work" rather than being research-related, stating:

> Creative work should be relevant to some aspect of comics, although there are no other thematic or stylistic restrictions. Metafictional submissions that deal with the processes and theories of comics creation are encouraged ("*Studies in Comics*" n.d.).

The peer review guidelines are those of Intellect Books, which are based on the COPE framework which I also use in this article. Neither the Intellect Books peer review instructions nor the COPE framework provide specifics for how to approach the graphic plane as anything more than a fringe element or space for visual examples (i.e., a photo or other single image).

Inquiries about the peer review process to editors of other major journals showed a strong willingness and interest to receive more graphics submissions, but these journals had not yet developed any systematic guidelines for submitting or peer review, as an anonymous editor confirmed: "As the graphic contributions to our journal have been few so far (though they are always welcome), we have not yet created official submission guidelines for them." Regarding peer review guidelines, I will begin with journals which state that they accept graphic submissions. One anonymous editor of

such a journal, who I will quote anonymously, stated that their journal currently has no special guidelines for graphic submissions, but is currently looking into creating separate submission criteria. Regarding the peer review of graphic submissions, they:

> seek out peer reviewers who have demonstrated experience in publishing both comics essays and academic writing. We ask for feedback on the content, design, and clarity of the piece, and the suitability of the subject for [the journal's] readers.

This was echoed by two other journals, who seemed confident that they were able to find peer reviewers who are both subject-matter experts and comfortable with reviewing comics-format submissions. Another anonymous editor noted that the peer review guidelines are the same for all types of submissions, however, they offer definitions of different review decisions to cover "accept," "minor revision," "major revision," "reject and resubmit," and "reject." Other journals related to comics-based research do not mention graphic submissions at all in their instructions for authors and did not provide any statement about peer reviewing graphic submissions publicly. Some journals did not respond to private inquiry about the process, and in the case of a lack of response, this cannot be understood as a sign that they have no process, I am only noting the failed attempt to gain that information for the sake of transparency. The experiences between editors willing to receive research comics and scholars seeking to submit them seems to differ in satisfaction with the peer review process.

The field of comics-based research is not yet large, but it is growing. The discrepancy that I would like to address here is the imbalance between the surge of instructions on how to make research comics, and the lack of clarity on how these submissions will be received and reviewed. It is possible that authors are making a similar choice to the one I made, preferring to submit where there is a clear pathway, leading a journal such as *Comics Grid* to amass a small collection of research comics. I would like to focus only on the issue of reviewing the visual elements of the graphic submissions, because I believe that is the factor which has received the least attention, and the present moment is the best time to initiate wider conversation about how graphic submissions should be processed both by readers and by peer reviewers. Some journals will surely be content with their current process, as one anonymous editor noted that even without guidelines they have "always received high-quality, specific, actionable feedback from these reviewers on both the text and image components of the submissions." I intend this rubric to be useful also in a pedagogical environment, but it will not be a useful tool for all instructors in all contexts, nor should it ever be. Most importantly, I warmly welcome any other extensions to this conversation, including and not limited to discussions about the submission process itself, clarifications about technical parameters for print and digital journals, debates about redrawing as quotation, considerations for the use of animated gifs, and so on.

Methodology

Michael Pagliaro created his rubric in response to the need for "visual literacy instruction" required by the National Council of Teachers (Pagliaro 2014: 34) and aimed to develop an "easy-to-use" visual literacy education tool to compliment Cooper, Nesmith, and Schwarz's work directed at educators (Pagliaro 2014: 37), to evaluate the educational value and literary merit of graphic novels. This allows educators to hand-pick comics and graphic novels for purpose and relevance to a course rather than waiting for a prescribed canon to be approved. Pagliaro based his rubric on W. James Popham's five rules for creating rubrics (2008), which Pagliaro adapted for comics as:

- Make sure the criterion to be assessed is significant;
- make sure all of the rubric's evaluative criteria can be addressed while reading;
- provide as few evaluative criteria as possible;
- Provide a succinct label for each evaluative criterion;
- Match the length of the rubric to your own tolerance for detail (Pagliaro 2014: 38).

Pagliaro does his own evaluation of a corpus of award-winning comics and graphic novels to develop his criteria and labels. The adaptation of these core rules to the creation of a peer review rubric for research comics will draw on the scholarly authority of the existing methodological publications mentioned in the introduction. The evaluative criteria will be drawn from "How to Draw Comics the Scholarly Way," the language of the labels will be drawn from the elements presented in "New Choices for the Comics Creators," and my own in-classroom experiences testing prototype versions of the Form that Functions Rubric for Research Comics with bachelor and master's level students in an Introduction to American Comics and Graphic Novels course.[1] The limiting of the evaluative criteria and length of the rubric will aim to fulfill the recommended guidelines provided by the Committee of Publication Ethics (COPE) for ethical peer review (COPE Council 2017).

COPE's recommendations for accepting a role as a reviewer clearly state that an appropriate reviewer will have subject-matter expertise to match the manuscript content, and ought to alert the editor to any gaps in their expertise (COPE Council 2017: 6). With research comics, a peer reviewer may find that they have no gaps in their subject expertise, but may not feel fully comfortable with the format. Should they alert the editor of this issue, this does not entirely render the reviewer unsuitable for the task. However, the editor and reviewer must remedy this gap and aid the reviewer in

[1] The courses are one-semester long, consisting of twelve 90-minute sessions, with 20–30 students per semester. They are part of the degree program for British and American Philology.

their obligation to provide "appropriate feedback" (COPE Council 2017: 6) with a clear, shared vocabulary. This is a challenge if the content of the research comic is within the reviewer's own field, but they must comment on a format used by another field with markedly different and likely unfamiliar terminology. Subject-matter expertise may not overlap with format expertise. I argue that the creation of an easy-to-use evaluative tool can provide a pathway to evaluate the visual plane and a framework for determining key criteria and supply a manageable range of terminology to bridge different fields of expertise with the comics format.

While Pagliaro established a corpus for his rubric, Kuttner, Sousanis, and Weaver-Hightower have already done this work in order to create their recommendations of best practice for research comics creators in "How to Draw Comics the Scholarly Way," so I will follow their lead and use the "affordances" they identify to determine basic evaluative criteria for the rubric. The affordances they identify are (listed without an intended hierarchy and with my paraphrasing):

- Unification and equality of word and image (Kuttner et al. 2017: 398);
- Highly and consciously multimodal communication, utilizing a range of semiotic resources (Kuttner et al. 2017: 399);
- Facility with narrative and process, though not excluding intentionally non-narrative comics (Kuttner et al. 2017: 399);
- Simultaneity, or the "braided" quality of the fragmented elements (Kuttner et al. 2017: 400);
- Expression of style (Kuttner et al. 2017: 401).

Kuttner, Sousanis, and Weaver-Hightower supply model research comics of each of these affordances, but for the purpose of the rubric these concepts need to be simplified to evaluative scales which can be understood by scholars who are not CBR practitioners. Additionally, correctly point out that "CBR practitioners should be able to explain their approach" (Kuttner et al. 2017: 413) to aid the reader in interpreting the comic, but the reality is that many research comics are published without lengthy methodological appendices. These appendices sometimes, as in Weaver-Hightower's "Losing Thomas and Ella: A Father's Story," explain the creation of the comic extensively, but it is unclear if validating an approach is the same thing as aiding in the process of interpretation.

Selecting concrete terminology is difficult, as different publications have chosen a range of terms, or freely utilize a range of synonyms within a single publication. Kuttner, Sousanis, and Weaver-Hightower define 'comics-based research' is "a broad set of practices that use the comics to collect, analyze, and/or disseminate scholarly

research" (Kuttner et al. 2017: 397). But they do not specify research-based comics, allowing confusion between graphic medicine, graphic journalism, applied comics, and narrativized infographics. They try to cast the widest possible net in their section of the guidebook, addressing comics-formatted works ranging from anthropological notes to qualitative interview data. I would like to take a narrower scope, looking only at comics which represent the final form of communication of research results, a term which has been established more or less as "research comics." "Research comics" is what Marcus Weaver-Hightower defines his own work in the full title of the graphic medicine piece "Losing Thomas & Ella: A Father's Story (A Research Comic)," (2017) to capture his purpose of communicating research originating in the academic sphere, rather than use a term tied to a specific field (such as graphic medicine or comics journalism), or a single element of the overall comics (such as an occurrence of data visualization). The term is also adopted by Monica Sassatelli as "research comics" over the choice of "research-based comics" when describing methodologies and considerations for comics to be used in communicating sociological research (Sassatelli 2021: 315). I will be using the term "research comics" in this study to differentiate from 'creative works' or 'visual essays' addressed by some journals, or other non-fiction comics which do not go through blind peer review.

Kuttner, Sousanis, and Weaver-Hightower work with the terms "word" and "image" (Kuttner et al. 2017: 398) but also freely use "text" and "pictures" within the same paragraph, switching between several synonyms throughout their chapter. I will also allow for synonyms in this article. They caution, as I would like to echo here as well, that CBR is an emerging field of practice, however while they choose to highlight that "some of the strongest examples of CBR come from outside of what would traditionally be considered scholarship (Kuttner et al. 2017: 401), while I have to limit my study to comics published in peer reviewed journals. I would like to focus on the image, and I will use the "visual plane" as delineated in Victor Fei Lim's model of multimodal discourse, which allows the text and visual planes to stand individually, with a "space of integration" merging the two (Lim 2007: 198).

"How to Draw Comics the Scholarly Way" rightly rejects the narrow evaluative scale of "good" to "bad," and instead emphasizes validity or credibility alongside aesthetic quality (Kuttner et al. 2017: 412). The term "aesthetic" is quite subjective and could be misinterpreted, so adaptations of the rubric may choose to refine this word choice, but for the sake of this article I will use the term used by Weaver-Hightower, Sousanis, and Kuttner. In the case of research comics, aesthetic quality is subservient to science communication, which is neatly expressed in Pagliaro's criterion of "form that functions" (Pagliaro 2014: 37). In Pagliaro this is "formatting that delivers narrative information" and for the sake of research comics this can be adapted to "formatting that delivers

study information." I have adapted the affordances outlined by Kuttner, Sousanis, and Weaver-Hightower to simplified evaluative criteria in the following paragraphs. Because these affordances are subjective and, in some ways, ambiguous, I offer the user of the rubric several opportunities to consider the afforances, each taking a slightly different tact, in order to make them accessible. The "Form that Functions Rubric for Research Comics" does not offer any evaluative framework for the validity of the study content or the scientific quality of the research – that must be judged by the peer reviewer's own subject expertise. The rubric aims, however, to guide the reviewer through the visual plane and its integration with the text using the "form that functions" principle.

Weaver-Hightower, Sousanis, and Kuttner's issue of unification (Kuttner et al. 2017: 398) is framed in the rubric as a type of subjective balance, wherein research results are communicated equally on both the visual and textual plane. Regarding "consciously multimodal communication" (Kuttner et al. 2017: 399), the rubric asks the reader to look for color, style, visual metaphor, and artistic elements within their first read of the manuscript and implies they should seek out links between these graphic elements and the text, as is assessed in the Before Reading process, question C. This aims to prime readers to continue to look out for links between the semiotic elements in the comic and the text as they continue to read. The affordance "facility with narrative and process" (Kuttner et al. 2017: 399) is phrased here as "execution of the graphics" as being supportive or disruptive to the comprehension of the research, in order to leave space for both narrative and non-narrative research comics, appearing in the Durning Reading section, question A, as the comic as a whole must be taken into consideration. The variability of the artistic execution of the graphics will be inevitably a subjective measurement, as are assessments about the fluidity of composition in a traditional article. In the rubric, this is further measured by how easy and clear it is to "follow" the presentation of the research in the first to criteria, which adds an extra measure to determine form that functions, outside from artistic tastes.

The simultaneity, or the "braided" quality of the fragmented elements (Kuttner et al. 2017: 400) is addressed in two steps – the first one established by the first impression in Before Reading section and the second confirmed at the end of the reading process, After Reading. I have chosen to phrase this as "integration" and "support" of the visual and textual planes. "Multiple subjectivities expressed simultaneously," and a definition of thick description in research comic form appears as "surface images but also the layered meanings behind them" (Kuttner et al. 2017: 409) is addressed throughout the "During Reading" section of the rubric. By asking the reader to pay attention to their first impressions then revisit these impressions after reading, ideally the rubric will put them on alert for "braiding" and multi-layered meanings throughout the reading process. To address Kuttner, Sousanis, and Weaver-Hightower discussion on the quality of this

braiding, I have redirected it here as a question of "balance" and relevance between the visual and textual planes, assuming that the peer reviewer familiar with their field's writing norms will be judging if the format and the graphics are fitting for the text.

For the sake of academic composition, I have also included a question about the citation apparatus used in the research comic as part of the expression of style (Kuttner et al. 2017: 401). Since there are no concrete guidelines about approved citation styles in comics and graphic novels, the reader may come across unusual innovations. Here I frame it as a measure of integrated citations or disruptive citations, assuming that the citations become a part of the image and layout just as the rest of the text does. While avoiding subjective questions of aesthetic appeal (though "How to Draw Comics the Scholarly Way" does not shy from aesthetics) the expression of style is wrapped into questions about how the visual plane successfully reaches communication objectives, assuming that the style must serve the function of the manuscript.

The language of the labels in the rubric are also drawn from "New Choices for the Comics Creators" (Davies 2019). Paul Fisher Davies draws on M.A.K. Halliday's systemic functional grammar to outline key elements of comics creation. I have tried to make the terminology here more accessible for a general audience, because in his research comic Davies dedicates substantial space to translating linguistics terms to the comics format. For the choices he identifies – character design, verb style, density, framing, metonymy – the two most accessible to a general, academic audience are character design and density. "Framing" and "verb-style" could be misinterpreted in a way that undermines Davies' intentions, and "metonymy" in a comic requires description and examples to grasp, which would make the rubric a much more difficult tool to use. The rubric is footnotes with a citation for Davies' research comic, for peer reviewers or students who would like to access some more complex metrics. Despite rephrasing and simplifying the elements proposed by Davies, they dovetail nicely into the affordances outlined by Kuttner, Sousanis, and Weaver-Hightower, as I will explain now.

"Character design" is named explicitly in the rubric, but to make it relevant to a review of the scientific validity of a research comic, I chose to focus this on the illustration of characters as an expression of researcher or research subject positionality. There is evidence that CBR practitioners understand the character design as an ethical issue of positionality in Weaver-Hightower's methodological appendix, where he describes member checking the graphics with the research subject for accuracy and acceptability of the depiction (Weaver-Hightower 2017: 228). I have explored the issue of embodying the researcher-author-illustrator in a research comic in greater detail in "Visualizing the Author" (2023a), and once a researcher has decided to include themselves, character design becomes a highly impactful choice.

While the term "verb style" is not used in the rubric, the reader is asked to record their impression of the clarity of the flow between panels. Davies means the representation of the processes that move the text forward, and the reviewer could provide a deeper analysis of this factor, however the function of this authorial choice can be measured most simply by the clarity achieved. Density is used as a variable related to the readability of the visual plane. In order to serve the principle of form that functions, this is framed as a range between the graphics being "too dense" or "well laid out."

Davies presents "framing" as a choice, and though "framing" itself is a common term, Davies complicates this in a way that is very useful to CBR practitioners, but may overwhelm a reader from another field. Rather than asking the reader to measure hypotactic relationships, parataxis, sequence, nesting, trimming, or projection, the rubric asks readers to focus on the level of disruption or integration of the citation apparatus, which is a necessary element in academic writing. A higher-level rubric which addresses the finer points made by Davies would be very welcome in the future.

Davies' final element of "metonymy" is again reframed within the context of a form that functions in the measurement of images that contribute meaning, in contrast to graphic elements which are redundant or decorative. Metonymy in graphic narrative allows for repetition, exclusion, ellipsis, or redundancy as a tool of visual storytelling, so it will depend on the reader's interpretation of these graphics to determine if they are an asset to the scientific validity and quality of the research comic or not. While the goal of this rubric is to offer a gateway for non-CBR readers of research comics, a more advanced framework which takes full advantage of the nuances of Davies' five criteria would be useful for peer review within CBR journals or for advanced comics studies courses.

The proposed phrasing in the rubric is in no way intended to be the final word on accessible evaluative criteria. Further development of the rubric would be welcome to include corrected language to better accommodate users of English as a second language. It would also be desirable to modify the rubric metrics for the specific purposes and norms of each journal or course which may employ it, refining the technical terminology to better reflect the field a particular journal or course serves. As clearer style guides are developed for graphic submissions, the rubric could help editors decide what needs to be clarified in their own style guide, and in turn the rubric can be modified so that a style guide and rubric work together as a suite of tools for the submission and review processes. If the aim of creating a rubric is to provide an "easy-to-use tool," then the CBR scholarly community and fields which produce research comics could consider designing a range of specialized tools for their particular needs, as one size will not fit all. The current form of the rubric appears on the following page (Woock 2023b).

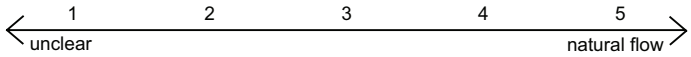
Form that Functions Rubric for Research Comics 1.0

Title of Research Comic:_____ Author:_____

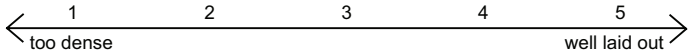
I. Before reading

First read the abstract (if there is one) and then pre-read by skimming through the research comic, and answer the following questions:

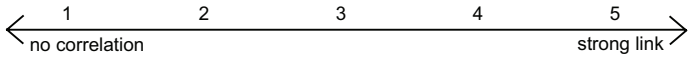
a. Opening to a random page, can you tell how the panels flow together?



b. Is it easy to tell at a glance what is happening in the images, or do they require more time to figure out?[1]



c. Based on first impressions, do the colors, art style, visual metaphors or other artistic elements contribute to the topic presented in the abstract?



d. Initial notes on the graphic elements and multimodal quality:

_____

_____

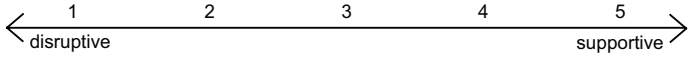
_____

_____

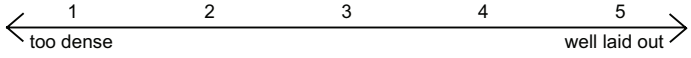
II. During reading

Now read through the research comic. Multiple readings may be needed.

a. Is the execution of the graphics, including the font of the text, supportive or disruptive to the comprehension of the research?



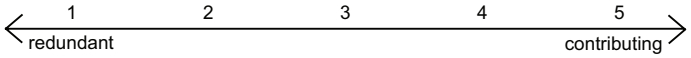
b. Is the research presented in a way that is clear and easy to follow over multiple pages?



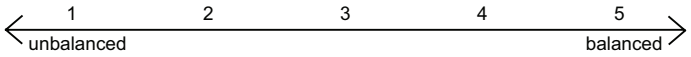
[1] See P.F. Davies 2019 New Choices of the Comics Creator, The Comics Grid: Journal of Comics Scholarship 9(1), 3. Davies provides richer definitions and examples for discussing issues of verb style, density, framing, and metonymy, all which contribute to clarity of composition.

Form that Functions Rubric for Research Comics 1.0

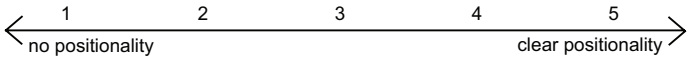
c. Do the images included contribute meaning and information, or do they rather repeat the text or play a decorative role?



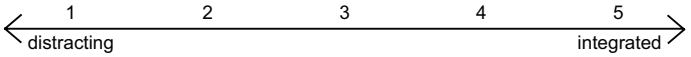
d. Are the research results well communicated on *both* the visual plane and textual planes?



e. Is the positionality of author or subjects implied or expressed explicitly through the character design?



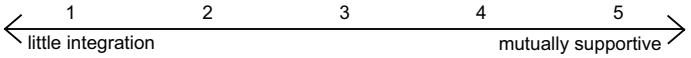
f. Does the citation formatting fit with the graphic plane or is it distracting?



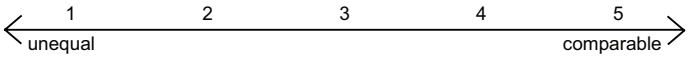
III. After reading

Make a traditional review of the text and any accompanying appendices or paratext and consider your evaluation of the illustrated sections in this context to create an overall impression.

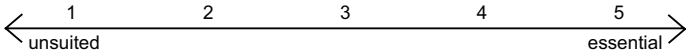
a. Reflect on the integration of the visual and textual planes. Do both planes support each other to the degree you anticipated in pre-reading?



b. Is the level of the graphic presentation at a comparable level to the quality of the text?



c. Overall, how well suited are the text, layout, and graphics for the presentation of the research?



This rubric is intended as a supplementary framework for reading research comics. The format of this worksheet and question sections I. and II. are adapted from Michael Pagliaro's Rubric of Literary Merit in Graphic Novels. 2.0 in "Is a Picture Worth a Thousand Words? Determining the Criteria for Graphic Novels with Literary Merit." The English Journal 103(4): 31–45.

Case studies

I would now like to present short summaries of published research comics which make use of the "Form that Functions Rubric for Research Comics" criteria and evaluative scales. The initial responses on the form have been synthesized to text for readability and to create the sort of text which may be used in peer review feedback. The purpose of the rubric, again, is to provide a reviewer from a non-CBR field with useful language and steps to approach the visual plane a research comic, from the assumption that a non-CBR scholar will naturally favor the textual plane and may avoid a deeper analysis of the graphics without this tool. The technical content of the research comic, and the validity of the research results, are not addressed by the rubric and are at the discretion of the reviewer and their expertise.

Accordingly, the sample research comics here were chosen because they represent a wide range of variables which influence the graphic plane. This includes number of authors, distribution of illustration work, interdisciplinary perspectives, subject matter, audience, visual style, differing layouts, different publication formats, and a range of communication strategies. A single image has been reproduced here for illustration and analysis, but I would like to clarify that the summaries take into consideration the whole comic, not just the excerpt shown here (**Figure 1**; Kara, Medley, & Mutard 2021).

Usage with a 'classic' comic format

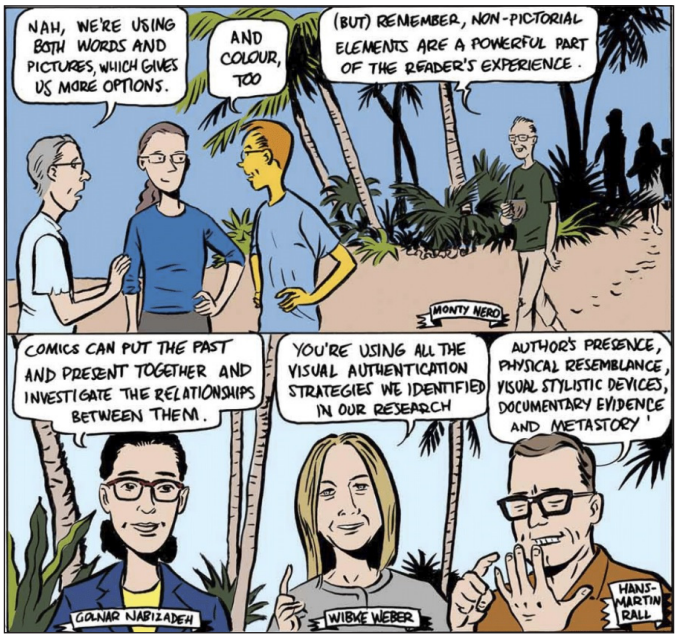


Figure 1: Helen Kara, Stuart Medley, and Bruce Mutard, 2021, "Scholarship in Action," *Journal of Graphic Novels and Comics* 13: 319. Image used with permission.

The first research comic (Kara et al. 2021) is an interdisciplinary collaboration with a clear division of labor between the authors, and formatted for print in a traditional A4 paper size. Helen Kara, who specializes in research ethics and methodologies, composed the text, Bruce Mutard contributed layout and pencils, and Stuart Medley finished the inks and colors. The content is co-authored by all and comprises a summary of one day at a conference. The content was composed "in real time" (Kara et al. 2021: 310), and centers around the question: "Is history fiction" (Kara et al. 2021: 311)?

Judging by first impressions, the comic has a very clear flow between panels on the page and follows a regular pattern of presenting a narrative caption and a contextualizing image in most frames. The images are clear and uncluttered, and it is easy to read. At a first glance through the comic, the subdued color palette appears appropriate and neutral for a research comic, but the images include visual metaphors and occasional comedic abstractions which lighten the tone of the work – for example, the boat "S.S. Panel" and an octopus with a scholar's head (Kara et al. 2021: 316) – and strengthen the subjective appeal of the text. The comic is fluid and multimodal, making use of a wide range of semiotic tools.

The artistic execution of the work is clear and pleasant, and the argument develops over the course of the comic in a way that is easy to follow. The images contribute meaning through contextualizing ideas in visual metaphors or offering lively examples of ideas, or by visualizing statements from authors by depicting the quoted scholars themselves. Neither text nor image dominate the page, and they are well balanced. The depiction of the "characters" are realistic illustrations of actual scholars (for example with Golnar Nabizadeh, Wibke Weber, and Hans-Martin Rall), and state positionality only implicitly. The citations are inserted as numeric superscript, but the numbers are slightly too large for the font, and the actual endnotes are not embedded in the comic, so if the research comic is downloaded or read out of the context of the journal issue, the endnotes are lost.

The overall impression is that the visual and textual planes are well integrated, presented in a traditional comic book layout which will be comfortable for most readers. The organization of the comic is loosely narrative, representing the flow of thought over the course of the day as ideas develop. The graphics and text are both of a high quality, and the visual plan significantly contributes to the presentation of the research – the effectivity of the research communication would be significantly diminished if this were presented as a text-only article.

Usage with a non-narrative comic

Figure 2: Paul Fisher Davies, 2019 "New Choices of the Comics Creator," *The Comics Grid: Journal of Comics Scholarship* 9(1): 3. Image used with permission.

The second research comic presents a completely different trajectory. The aforementioned "New Choices of the Comics Creator" (**Figure 2**; Davies 2019) is made by a single author-illustrator and presents a non-narrative comic which is however navigated by the author's avatar, and reflects the typical organizational layout of an academic article. The research comic's structure implies that it may have been composed on separate pages, but the presentation in the digital journal is as a single image of limited width but continuous length. The flow of the panels can be confusing to my eyes, as the comic is not explicitly divided into pages, and the panels are both densely packed and irregular, as the panel sections regularly jump between macro- and micro-layouts, one embedded into the other without a predictable pattern. The handwritten text is aesthetically pleasing but may take some readers more time to decipher. The

colors are subdued and tasteful, mostly acting to highlight text or images, which helps clarify the layout. Davies uses the visual plane to physically organize his argument, to present example graphics from his research, and to include visual metaphors and visualization of his ideas.

While reading the research comic, it is clear that while the visual plane contributes an abundance of useful information and context for the communication of the research, the density of the panels can sometimes be disruptive or obscure the flow of the argument. The comics places slightly more weight on written communication, but the graphics are essential for meaning making. The citations are noted through narrative captions, which are sometimes lost due to the use of small narrative captions for a variety of purposes: side comments, explanations, bibliographic information, or labelling. In some cases, the text is too small to read, and it is unclear if it is essential information, or only parenthetical gloss.

The overall impression after reading is that the visual and textual planes do support each other, and the visual density of the graphics forces integration. The comic is aesthetically cohesive, but for my eyes I would wish for more clarity in the text and less density. The graphic plane is essential for the presentation of the research and is well executed overall.

Usage with a comic including visual abstraction

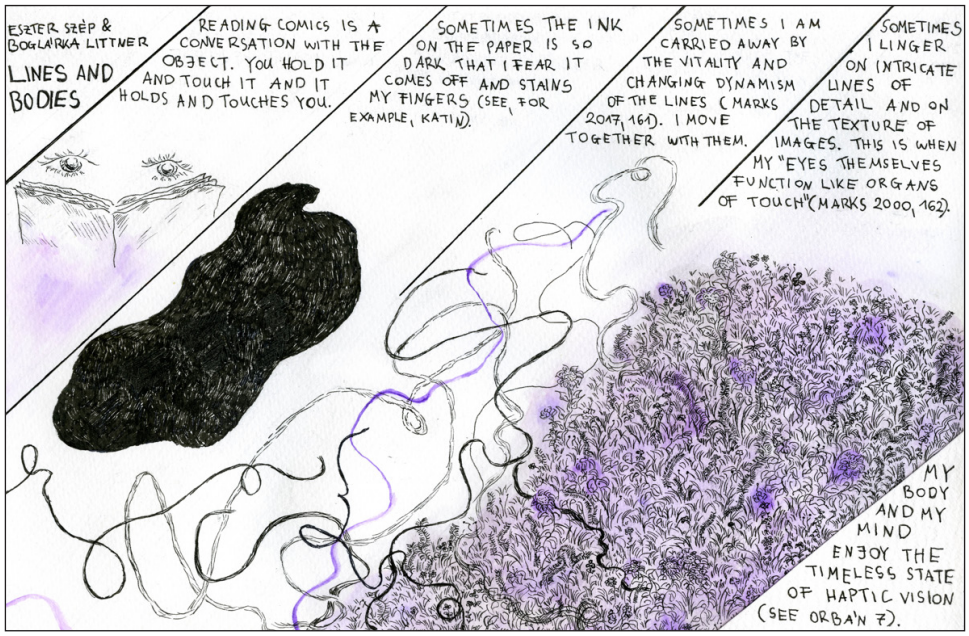


Figure 3: Boglárka Littner and Eszter Szép, 2020 "Lines and Bodies," *Sequentials* 1(4): n.p. Image used with permission.

The final comic is another multi-authored piece, this time without clear divisions of work credits between composition of text and graphics (**Figure 3**; Littner and Szép 2020). Both Eszter Szép and Boglárka Littner are known to both illustrate and write research, so I can only guess that they contributed equally to all parts of the research comic. This comic is easy to take in at a first read, the panels are clearly structured and divided, and the layout is a regular pattern of narrative caption at the top of the panel and a corresponding image within. The graphic style is clear and uncluttered, done in black and white line drawing with a violet watercolor wash for accenting. The authors make use of visual metaphors and abstractions, as well as standard multimodal elements such as speech bubbles.

The handwritten text is clear and easy to read, and the graphics support the text, though through affect rather than explicitly contributing new information, and there is a balance between the text and images. The idea flows easily over the pages and panels. There are realistic figures in the graphics, but these do not state an author's positionality. Citations are included as parentheticals to the narrative captions, in a Chicago style author-date in-text citation format. The references are embedded into the final page of the comic.

The graphics and the text support each other, but they are not always fully integrated, rather the graphics add context to the text, but would not be able to stand alone. The art is aesthetic and of good quality, but the text is in many ways richer and denser. The graphic plane is a welcome source of additional context and due to the subject matter – it is a research comic about reading comics – and the graphics are essential for the overall presentation of the research.

Conclusions

The "Form that Functions Rubric for Research Comics" comes with the caveat that it will not be appropriate for all situations. As seen in the examples of the rubric applied to specific research comics, a certain field may find that the visual plane dramatically influences the communication of the research results, or even generates a second level of data, and a higher level of description and scrutiny would be merited. The rubric references back to Davies' "New Choices for the Comics Creator" article which offers more elements to consider and supplies linguistics-derived terminology, which could be comfortable for non-CBR fields as it focuses on the effectivity of the communication rather than the quality of the aesthetics. However, for some journals the aesthetic quality of a research comic may be the most important metric and will be underserved by the rubric. The rubric presented here is only a proposal and is intended to be a

starting point for discussion while journals and researchers refine tools to aid in the publication process.

To sum up, while CBR methodological research has provided substantial insight into the creation of research comics, and there are many useful guides to support researchers wishing to communicate their results in a comics format, there is little guidance for the other parts of the publication workflow. This article outlined the diverse metrics for evaluating research comics, adapted the language of these metrics into an "easy-to-use" tool intended to support reviewers in describing the visual plane, modelled the types of evaluations which could arise from using this tool, and contributes a final proposal for a rubric which could be used within peer-review or a pedagogical environment. Hopefully, this will help peer reviewers from outside CRB-related fields fulfill their ethical obligations to provide a full evaluation of the visual plane at an equivalent level to their capacity to evaluate the field-specific results and textual composition.

This process has shown that specific metrics for evaluating research comics are diverse and fluid, which I argue is a strength and should encourage different fields to solidify clear metrics and style guides which serve the same purpose as style guides for traditionally formatted publications. As research comics gain popularity, clear style guides and evaluative frameworks would support the existing literature which provides methodological advice on the creation and project management issues of authoring a research comic. The growing interest in CBR is exciting, and research comics will continue to generate interesting debates over aesthetics, communication, rigor, and validity in the years to come.

Acknowledgements

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Competing Interests

The author has no competing interests to declare.

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