

# Framing attention in American and Japanese comics

Neil Cohn (neilcohn@emaki.net), Amaro Taylor-Weiner, Suzanne Grossman

Department of Psychology, 490 Boston Ave  
Medford, MA 02155 USA

## Abstract

Research has shown that Americans focus more on focal objects of a scene while East Asians attend to the surrounding environment (Nisbett, 2003; Nisbett & Miyamoto, 2005). The panels of comic books—the sequential frames of images—highlight aspects of a scene comparably to how attention focuses on parts of a spatial array. Thus, comparison of American and Japanese comics can inform cross-cultural cognition by looking at the expressive mediums produced by these cultures. We compared the framing of figures and scenes in the panels of two genres of American comics (Independent and Mainstream) with mainstream Japanese “manga.” Both genres of American comics focused on whole scenes as much as individual characters, while Japanese manga individuated characters and parts of scenes. We argue that this framing of space in comics simulates a viewer’s integration of a visual scene, and is consistent with cross-cultural differences in the direction of attention.

**Keywords:** Cultural Psychology; attention; comics; Japan; manga.

## Introduction

Cross-cultural research shows that East Asians and Westerners differ in their direction of attention (Nisbett, 2003; Nisbett & Miyamoto, 2005). Beyond studying attention through perception, cognition can also be compared through cultural production (Morling & Lamoreaux, 2008), as in artistic expression (Masuda, Gonzalez, Kwan, & Nisbett, 2008). Comic books provide an ideal place to analyze the direction of attention, because panels act like windows onto a scene (Cohn, 2007). Thus, analysis of panels in Asian and American comics provides a place to look for cultural differences in cognition through creative expression.

## Attention across Cultures

Over the past decade, various research has shown that Asians and Americans direct their perception to aspects of visual scenes in different ways (Nisbett, 2003; Nisbett & Miyamoto, 2005). On the whole, Americans focus more on focal objects and characters with agency than on aspects of the background, while Asians attend to aspects of the whole environment or to characters’ relationship to the contextual environment.

These findings have been consistent across numerous behavioral paradigms. After viewing video scenes, Americans mostly describe the salient objects, while Asians

describe significantly more aspects of the surrounding context (Masuda & Nisbett, 2001). Americans also tend to notice changes to focal objects in animations that feature slight changes to a single scene, while Asians pick up on changes to the broader environment and relations between objects (Masuda & Nisbett, 2006). When recalling scenes where the background is changed from its original context, Americans are unaffected while Asians’ memory appears impaired (Masuda & Nisbett, 2001), and Americans’ eye movements fixate sooner and longer on focal objects, while Asians make more saccades to elements of the background (Chua, Boland, & Nisbett, 2005). Additionally, when viewing photographs of objects, fMRI studies show that Americans have stronger activation than Asians in brain regions associated with the storing of semantic information about object properties (Gutchess, Welsh, Boduroglu, & Park, 2006). All of this work supports that Americans focus more on focal objects while Asians attend more to aspects of environments and relationships.

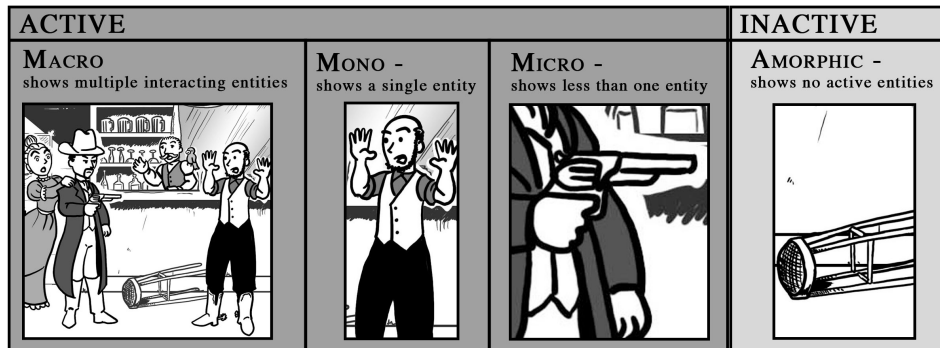
Research has also suggested that preferences for attention permeate into artistic representations. Masuda, Gonzalez, Kwan, and Nisbett (2008) looked at a corpus of artwork, and found that Western paintings emphasized the focal objects and figures, while East Asian paintings emphasized the broader context and environment. This trend was reinforced in drawings and photographs of figures and scenes produced by individuals from these cultures. Thus, these cognitive preferences for attention extend into artistic expression, and other contemporary media produced by these cultures might be expected to show further evidence of these trends.

## Comic Panels as Units of Attention

Comic books are an ideal place to examine attention in artistic expression. Because comic panels act as windows on a visual story, they can serve as graphic equivalents of a “spotlight of attention” for the fictitious scene. To this end, Cohn (2007) has described comic panels as “attention units” that highlight parts of a scene in different ways. Within a sequence of images, a scene may have two types of elements: *Active entities* are those that repeat across panels by engaging in the actions and events of the sequence, while *inactive entities* are elements of the background. Panels can be categorized related to these elements (and depicted in Figure 1):

1. *Macro* – depict multiple active entities
2. *Mono* – depict single active entities
3. *Micro* – depict less than one active entity (as in a close up)
4. *Amorphic* – depict no active entities (i.e., only inactive entities)

In one of the first comparisons of American and Japanese comics, McCloud (1993, pp. 77-81) coded types semantic relationships between juxtaposed panels. He found that American and European authors primarily used transitions showing actions with clear temporal change, followed by shifts between characters and locations. Manga similarly showed shifts in actions, characters, and locations.



However, unlike American and European books, manga also transitioned to different aspects of the environment of a scene. McCloud attributed these differences to an “artistic culture” of Japan that focused on “being there over getting there.”

This hypothesis extended McCloud’s (1993, pp. 77-81; 1996) larger proposal that

Figure 1: Framing of attention in visual narrative.

These categories are distinguished by the amount of information they contain, which decreases successively: Macros contain more active information than Monos, which show more than Micros, which show more than Amorphic panels. These ways of highlighting attention are similar to, though not the same as, types of film shots. For example, a Macro may involve a long shot to capture the most information possible, but a panel showing only the hands of individuals exchanging a piece of paper would be a Macro (because they involve multiple characters) that uses a close up shot. In this way, close ups are also not always Micros, but they vary based on how much information they window.

### Cross-cultural Comparison of Comics

With the growing influx of Japanese manga (“comics”) into America over the past several decades, many comparisons have been made between the techniques of Japanese and American authors (Cohn, 2010, 2011; McCloud, 1993, 1996). Japanese manga come from a different cultural context than that of American comics. While comics in America have historically appealed to a particular subculture, manga in Japan are treated much the same as movies, television, or textual books. Manga are widely read by all ages, have many genres, and, in fact, are so popular that they constitute nearly one-third of all printed material (Gravett, 2004; Schodt, 1983). Though Japanese manga were influenced by American authors early in their historical development (Gravett, 2004), they developed largely in isolation over the past 60 years. With increased importation of manga into America starting in the 1980s, the differences between narrative techniques that emerged from these separate traditions have become quite salient to readers, authors, and scholars of comics in America.

manga allow a reader to take more of a subjective viewpoint on a story than American and European comics. He based this on the greater focus on environmental aspects in storytelling, more “subjective” types of motion lines (where a reader appears to move at the same pace as a moving object, as opposed to seeing it move in front of them), and subjective viewpoints in panels, which show the viewpoint of a character in the narrative. In order to test this broad claim directly, Cohn (2011) coded a corpus of comics and manga for this last type of subjectivity, where panels depict the viewpoint of a character in the narrative. More subjective panels were used in Japanese manga than American comics. This provided evidence that manga do indeed use more subjective viewpoints, at least across one measurable dimension.

Cohn’s (2011) study also examined the attentional types of panels described above. Nearly 60% of American panels were Macros, with only 35% Monos and 5% Micros (Amorphics were not yet theorized as a category, and were likely mixed in Monos and Micros). However, Japanese manga used almost as many Macros (57%) as Monos (43%), and more Micros (10%) than American comics. Because manga featured less than the whole scene in over half of all panels, it implies that the Japanese are as interested in the component parts of a scene as much as the whole scene. These results also suggest that the narrative structure of manga demands the inferential construction of whole scenes more than American comics (Cohn, 2010). These findings of more Micros in Japanese manga are also consistent with claims by Toku (2001, 2002) that manga influences Japanese children’s drawings. She found that Japanese children draw far more variable viewpoints than American children, particularly “exaggerated” close-ups.

While these studies have indicated that comic panels differ between cultures, variability may exist by looking within cultures. Obvious variability can be found in the diversity of American graphic styles compared to the far more uniform drawing style in manga. Graphic styles are

particularly pronounced between genres, which in America differ greatly between the more “serious” graphic novels and mainstream comics. Styles in genres of Japanese comics also vary, but mostly conform to a stereotypical style of big eyes, pointy chins and noses, and big hair. The diverse styles used in American comics have been likened to types of “dialects”, compared with “accents” in manga genres, which vary on a common schema (Cohn, 2010).

Variation between genres may apply to the level of panels as well, and can thereby inform about the framing of attention. In an early study, Neff (1977) found that panels use types of film shots differently between various genres of American comics. Wide shots (Long and Medium) far outnumbered Close shots (Close and Close ups) in panels for all genres. However, there were far less Close shots in Adventure and Romance comic panels than in Mystery and Alien Beings comics. These findings imply that different genres of American books do highlight different aspects of a visual scene. However, the sample size in this study was somewhat limited in scope—only two pamphlet-sized comics were analyzed per genre—making the results hard to generalize.

Given these precedents, the present study examined comic panels both within and between cultures by manipulating country of origin and genre. We compared the panels of “mainstream” Japanese manga with the two major populations of American comics: Mainstream and Independent (“Indy”) books. Mainstream books from both America and Japan were chosen because they are the most popular and most stereotypical instances of their respective comic cultures. American Indy books were chosen because they feature a different artistic movement in America that contrasts the Mainstream genres (discussed below). Thus, if variation occurs between the structures of comics from America, we may expect it between Mainstream and Indy comics.

If panel types of all three populations differ, it would imply sub-cultural “artistic” contexts vary related to narrative techniques of particular traditions. If Japanese panel types are similar to Mainstream comics yet different from Indy comics, it would imply that the framing of a scene differs based on genre, even cross-culturally. In contrast, if American genres do not differ from each other, yet both differ from Japanese manga, it would imply cultural differences beyond the contexts of genre.

To this end, if both American genres do differ from Japanese panels, we would predict the results to reflect the findings of Masuda et al. (2008) for art and photographs by Asians and Americans. Similar results would expect American comics to focus more on focal objects through Monos and Amorphics. Meanwhile, Japanese panels should show the opposite: here we would predict more Macros to focus on the relationships between characters in whole scenes.

## Methods

### Materials

Thirty graphic books were chosen at random from a corpus of over 200 comics donated from various comic companies. We coded 300 panels in each book for the properties of attentional panel type and shot type. 10 books were chosen from each of three populations: “mainstream” Japanese Manga, Mainstream American comics, and Indy American comics. In order to operationalize how these populations are identified, it is useful to discuss their differences.

Mainstream and Indy books differ greatly in graphic styles, genres, formats, publishers, and often readership. Mainstream comics primarily feature drawing styles common to superhero comics (dynamic linework, muscular figures, brighter colors), and focus on the genres of superheroes, horror, and science fiction. Mainstream books are also often produced by specific publishers and are serialized in pamphlet style formats that are only sometimes afterwards collected into books. Mainstream comics are sold primarily through specialty comic books stores. In contrast, Indy books use more variable graphic styles (particularly more cartoony and “artistic” styles) with more “serious” or dramatic genres (such as memoir, drama, etc.). Different publishers are known for producing Indy books and Mainstream comics, and they appear mostly in book formats (“graphic novels”). Indy books are often sold in comic books stores, but also have a much higher distribution into regular bookstores.

While some overlap in readership does exist between Mainstream and Indy comics, they largely appeal to different groups of people. Readers of Mainstream comics often read serializations that appear each month. They often are very devoted to their favorite comics, and American comics often target the writing with this consistent readership in mind, evident through frequent references to previous storylines. Indy comics have more varied readership because they are not serialized volumes. Often, Indy books are produced in single editions, and thus do not have consistent readership (though readers may follow particular authors’ works). Readers of Japanese manga are often more similar to Mainstream American comics—they have their favorite comics which are released weekly in large anthologies. While readership of manga is larger on the whole in Japan than America, there is no reason to believe that comics in either country are explicitly made with any expectation that readers will be more or less proficient in understanding them.

Additionally, while some crossover exists in readership between American genres, most authors of Mainstream and Indy books remain independent to their genres. Mainstream and Indy books are also created with a slightly different process. Mainstream comics are largely made by an industry-line style committee (Duncan & Smith, 2009) consisting of a writer, penciler, inker, colorist, etc. While an editor coordinates their efforts and oversees the plotline, for the most part these creators are free to follow their own

styles of writing and artwork. In contrast, Indy comics are more often drawn and written by individual authors. Japanese manga typically combine these methods. They are usually attributed to a sole author, who then employs a team of uncredited assistants who complete the more menial aspects of the drawings, like shading or drawing backgrounds (Schodt, 1983). While these creative processes may vary between countries/genres, the finished products largely reflect the intuitions of the authors or creative teams.

In this study, we distinguished American Mainstream and Indy books by criteria of graphic style, genre, and publishers. Mainstream books ranged in publication date from 1992 to 2005 with a mean of 2002, while Indy comics were published between 1991 to 2008, with a mean at 2003. Japanese books featured more consistent visual styles, following the stereotypical “standard graphic dialect” of Japanese comics (Cohn, 2010). However, since genres in Japan do not align neatly with those in America (Shonen “boys comics,” Shojo “girls comics,” and Gekiga “serious comics”), books were chosen that reflected the genre closest to Mainstream American comics—those focusing primarily on action/adventure themes (Shonen “boys comics”). Only English translations of manga were analyzed in the study due to their availability in our donated corpus, though manga were attributed to their original Japanese publication dates, from 1984 to 2005 with a mean of 1999.

Thus, our analysis contrasted either genre or country of origin. American Mainstream books shared a similar overall genre (action/adventure) with Japanese manga, though they came from the same country of origin as American Indy comics. All of the chosen books were widely read and popularly distributed throughout comic readership, and from major publishers—i.e., none of the books were obscure or minimally distributed. Books analyzed are provided online at [http://www.emaki.net/CTG\\_FramingAppendix.html](http://www.emaki.net/CTG_FramingAppendix.html).

### Areas of analysis

All books were coded for their attentional Panel Type—the way in which panels highlight attention in the various types of attentional categories previously discussed (Macro, Mono, Micro, Amorphic). Panels that could not be recognizably coded into these categories were identified as “Ambiguous.” Two researchers independently coded each book’s properties, and were consistent in their codings ( $Kappa=.785$ ,  $p<.01$ ). Final analyses used the mean between coders’ scores for each book.

Populations were fairly similar in the number of pages/book and panels/page analyzed. Indy comics averaged

56.6 pages/book and 5.99 panels/page, while Mainstream comics averaged 62.6 pages with 5.12 panels/page. Manga used 65.2 pages/book with 4.75 panels/page.

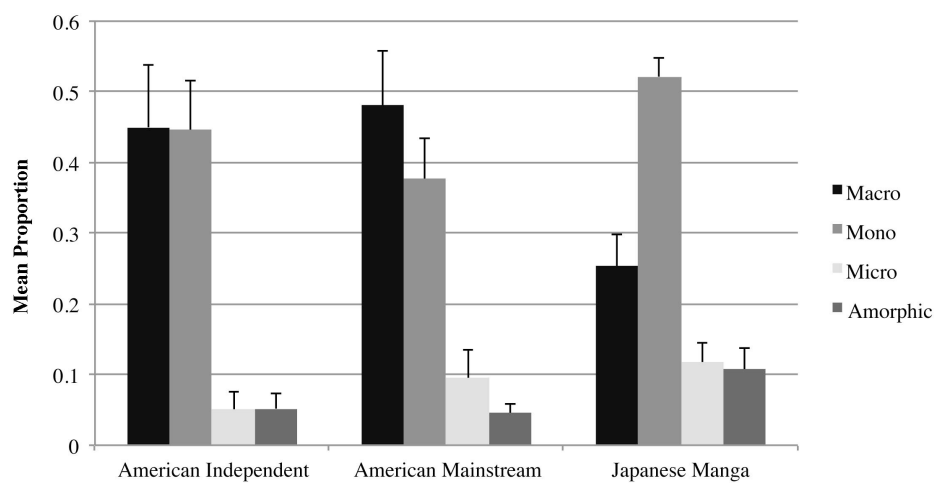


Figure 2: Relative proportion of panel types across American Mainstream comics, American Indy comics, and Japanese Manga.

## Results

### Panel Type

The analysis of attentional framing of panels found main effects for Panel Type,  $F(3,81)=89.71$ ,  $p<.001$ , with a Panel Type by Group interaction,  $F(6,81)=5.68$ ,  $p<.001$ . Main effects between Groups were not significant,  $F(2,27)=1.37$ ,  $p=.269$ .

As depicted in Figure 2, Indy and Mainstream comics used many Macros and Monos, with minimal Micros and Amorphics. Within Indy comics, overall differences were found between panel types,  $F(3, 27)=27.34$ ,  $p<.001$ , as well as between each pair of types (all  $t>5.81$ , all  $p<.001$ ), except the near equal means for Macros with Monos, and Micros with Amorphics. Mainstream panels also differed between all types,  $F(3,27)=30.05$ ,  $p<.001$ . These books featured only slightly more Macros than Monos, which was not statistically significant. Micros and Amorphics numbered far fewer overall, though there were almost twice as many Micros as Amorphics,  $t(9)=2.14$ ,  $p=.06$ . All other panel types featured significant contrasts (all  $t>5.55$ , all  $p<.001$ ).

Finally, Manga also showed main effects between panel types,  $F(3,27)=64.00$ ,  $p<.001$ . Monos far outnumbered other types, with roughly half as many Macros, and far fewer Micros and Amorphics. All types differed from each other, (all  $t>3.16$  or  $<-7.3$ , all  $p<.05$ ), except Micros and Amorphics.

Across the three populations, differences were found between each Panel Type (all  $F_s>2.8$ , all  $p_s<.01$ ). Indy and Mainstream comics showed no differences for any of the panel types (all  $t_s<1.8$ , all  $p_s>.11$ ). Indy panels differed

from Manga for all types (all  $t_s > 2.6$ , all  $p_s < .05$ ) except Monos, while Mainstream panels differed from Manga on all types (all  $t_s > 2.9$ , all  $p_s < .01$ ) except with regard to Micros.

## Discussion

This study analyzed how various cultures' comic panels frame a fictitious scene as a way to gain insight on how these cultures may direct attention. We compared Mainstream and Indy genres of American comics with "mainstream" Japanese manga. Even more than in Cohn's (2011) study, Japanese panels highlighted individual elements of scenes more than American books. Japanese manga were found to have far more Monos than any other type of panel, followed by Macros, and small proportions of Micros and Amorphics. Both Mainstream and Indy American comics had near equal proportions of Macros and Monos, again with small proportions of Micros and Amorphics.

In the analysis of panels types between cultures, manga used significantly more Monos, Amorphics, and Micros than did both types of American comics. American comics did not vary in their panel types between genres, despite surface stylistic differences. Thus, though Japanese manga and Mainstream American comics were similar in terms of "mainstream" appeal and action/adventure themes, this similarity did not influence the framing of scenes. These results suggest that the primary difference between these populations of comics are that of country of origin: The framing of entities in American comic panels differ from Japanese panels, though American comic genres do not differ substantially from each other.

What can these results offer to our understanding of cross-cultural attention and cognition? On the whole, the framing of attention in both genres of American comics focused more on detailing a whole scene as much as, if not more than, individual characters, as indicated by the prevalence of Macros over Monos. In contrast, Japanese manga directed attention toward details in the scene through Monos, Micros, and Amorphics, in lieu of actually showing full scenes in Macros.

These results seem to run counter to the cross-cultural research on attention. As suggested by the analysis of art and photographs in Masuda, Gonzalez, Kwan, and Nisbett (2008), wouldn't we expect American comic panels to focus more on the primary objects of a scene (i.e., Monos) because of a preference for objects over environments? Shouldn't Japanese panels focus more on scenes as a whole (i.e., Macros)? If these results are to be taken directly, they provide counter-evidence for the claims made by Nisbett and Masuda with regard to the manifestation of attention in popular culture.

One interpretation of these results is that cross-cultural panel framing has nothing to do with attention, but rather reflects the expertise of each cultures' readers. Manga are far more prevalent in Japan than in America, and thus Japanese may have a greater expertise in general in reading

sequential images. American comics may be geared towards less experienced readers, and thus they need to be constantly reminded of the elements in a scene with more Macros. On the other hand, more experienced readers in Japan may be able to retain or construct the whole scene without being presented with it.

Thus, under this interpretation, attention is not a factor at all. We find this explanation to be unfeasible. Manga do indeed have wider readership across the country of Japan compared with the readership of comics across America. However, American comics, particularly Mainstream comics, are targeted towards a consistent readership. These readers are often serious and devout fans, and would have as much if not greater fluency in their visual language than casual manga readers in Japan. Thus, attributing these findings to expertise alone seems unlikely.

Though these results on the surface appear to contrast previous findings on attention, we suggest another interpretation of these results that is indeed more consistent with the research by Nisbett and Masuda. Comic panels are not isolated images like the photos and drawings, but are instead meant to be read (and are created) in a sequence. A sequence of images in comics act as a simulation of how an individual might view a fictitious visual scene in front of them (a similar argument for film shots is made by Levin & Simons, 2000). This simulation of attention across sequential images is different from the treatment of attention in individual images, like in the study by Nisbett and Masuda (2003).

Like in attention, readers track only the most important aspects of a sequence to establish the continuity of the narrative. Non-relevant information may then go unattended by the "spotlight of attention" across panels, as happens in change blindness paradigms (Levin & Simons, 2000). There are thus two strategies a comic author can use when creating comic. They can either show a full scene (Macro) and rely on the reader's attentional intuitions to discern the most important parts, or they can use panels to directly highlight only those salient parts directly (Monos, Micros, Amorphics), omitting what is unimportant altogether. This use of panels would heighten the "subjective viewpoint" of panels simulating attention.

These and previous data suggest that American comics more consistently use the first option: letting the reader direct their own attention across panels to find the most relevant aspects of continuity, while letting less important elements simply go unattended. This is suggested by the larger amounts of Macros found in American comics of both genres. In contrast, Japanese manga do more to simulate the perception of a reader's attention, evident in greater use of Monos, Micros, and Amorphic panels. That Japanese manga use a strategy that is more subjective of the way attention may be directed is consistent with McCloud's (1993, 1996) claim that manga allow a reader to take more of a subjective viewpoint on a story. It also is supported by previous corpus analysis showing that "subjective panels"—panels that directly show the viewpoint of a character in the

narrative—are more plentiful in Japanese manga than American comics (Cohn, 2010).

These different strategies of depicting actions by simulating attention also reflect the way in which attention may be different between readers of different cultures. Manga panels highlight individual elements of a scene or environment because that would be how Japanese readers' attention would fall on elements of a visual array, and out of this information would need to integrate these parts into a coherent whole. In contrast, because American readers will naturally pick out the focal characters of the scene, American comics can use more Macros, assuming attention will be directed to the important elements of interest automatically. In this way, panels from comics and manga reflect how a Japanese or American reader might look at a visual scene if the whole array were in front of them, thereby echoing the differences in cultural windowing of attention.

By analyzing comics with a clearly defined categorization system, we have shown that visual narratives are bound by cultural conventions that create patterns in the ways that Japanese and American comic authors window attention onto visual scenes. We propose that these results are consistent with the cross-cultural research showing differences in how Asians and Americans perceive and attend to their visual environment (Nisbett, 2003; Nisbett & Masuda, 2003; Nisbett & Miyamoto, 2005), and lend further support to efforts to study cognitive process through creative cultural expression.

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### References

- Chua, H. F., Boland, J. E., & Nisbett, R. (2005). Cultural variation in eye movements during scene perception. *Proceedings of the National Academy of Sciences*, *102*(35), 12629-12633.
- Cohn, N. (2007). A visual lexicon. *Public Journal of Semiotics*, *1*(1), 53-84.
- Cohn, N. (2010). Japanese Visual Language: The structure of manga. In T. Johnson-Woods (Ed.), *Manga: An Anthology of Global and Cultural Perspectives* (pp. 187-203). New York: Continuum Books.
- Cohn, N. (2011). A different kind of cultural frame: An analysis of panels in American comics and Japanese manga. *Image [&] Narrative*, *12*(1), 120-134.
- Duncan, R., & Smith, M. J. (2009). *The Power of Comics*. New York: Continuum Books.
- Gravett, P. (2004). *Manga: Sixty Years of Japanese Comics*. New York, NY: HarperCollins.
- Gutchess, A., Welsh, R., Boduroglu, A., & Park, D. (2006). Cultural differences in neural function associated with object processing. *Cognitive, Affective, & Behavioral Neuroscience*, *6*(2), 102-109.
- Levin, D. T., & Simons, D. J. (2000). Perceiving Stability in a Changing World: Combining Shots and Intergrating Views in Motion Pictures and the Real World. *Media Psychology*, *2*(4), 357-380.
- Masuda, T., Gonzalez, R., Kwan, L., & Nisbett, R. E. (2008). Culture and Aesthetic Preference: Comparing the Attention to Context of East Asians and Americans. *Personality and Social Psychology Bulletin*, *34*(9), 1260-1275. doi: 10.1177/0146167208320555
- Masuda, T., & Nisbett, R. (2001). Attending Holistically Versus Analytically: Comparing the Context Sensitivity of Japanese and Americans. *Journal of Personality and Social Psychology*, *81*(5), 922-934.
- Masuda, T., & Nisbett, R. (2006). Culture and Change Blindness. *Cognitive Science*, *30*, 381-399.
- McCloud, S. (1993). *Understanding Comics: The Invisible Art*. New York, NY: Harper Collins.
- McCloud, S. (1996, April 1996). Understanding Manga. *Wizard Magazine*, *56*, 44-48.
- Morling, B., & Lamoreaux, M. (2008). Measuring Culture Outside the Head: A Meta-Analysis of Individualism—Collectivism in Cultural Products. *Personality and Social Psychology Review*, *12*(3), 199-221. doi: 10.1177/1088868308318260
- Neff, W. A. (1977). *The Pictorial and Linguistic Features of Comic Book Formulas*. Doctoral Dissertation, University of Denver, Denver, CO.
- Nisbett, R. (2003). *The Geography of Thought: How Asians and Westerners Think Differently... and Why*. New York: Nicholas Brealy Publishing Ltd.
- Nisbett, R., & Masuda, T. (2003). Culture and Point of View. *Proceedings of the National Academy of Sciences*, *100*(19), 11163-11170.
- Nisbett, R., & Miyamoto, Y. (2005). The influence of culture: holistic versus analytic perception. *Trends in Cognitive Sciences*, *9*(10), 467-473.
- Schodt, F. L. (1983). *Manga! Manga! The World of Japanese Comics*. New York: Kodansha America Inc.
- Toku, M. (2001). Cross-Cultural Analysis of Artistic Development: Drawing by Japanese and U.S. children. *Visual Arts Research*, *27*, 46-59.
- Toku, M. (2002). *Children's Artistic and Aesthetic Development: The Influence of Pop-Culture in Children's Drawings*. Paper presented at the 31st INSEA Convention, New York, NY.