# Depicting Motion in Comics: A Cross-Cultural Analysis of Motion Cues and Path Structures

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**Abstract**

In contrast to dynamic content, comics show graphics concurrently and over space rather than quickly transitioning to create the perception of motion. However, because of the static nature of comics, it can be challenging to depict motion in it. Therefore, certain graphic cues create the illusion of movement. The most prominent ones are postural cues, which are the postures a figure takes, and motion lines, which can be used to define the direction of a path. These cues not only give a sense of motion but also information about the path a figure has taken. Although previous research has looked at motion cues and path information independently, only limited research has been done on global patterns between the depiction of motion and path information. To examine this, a corpus of 212 comics from 48 countries is annotated and analysed on the use of motion cues and path structures. The results show that motion lines only depict explicit paths, while postural cues depict both explicit and implicit paths. Furthermore, this research shows relationships between the use of motion cues and particular path segments. Altogether, this research suggests universal patterns between motion cues and path structures, while global regions do not have distinct profiles to depict motion.

*Keywords:* motion cues, path information, global patterns, cross-cultural differences, comics

# Depicting Motion in Comics: A Cross-Cultural Analysis of Motion Cues and Path Structures

For static images, capturing motion can be challenging (Cohn & Maher, 2015). Words frequently fail to convey motion adequately, and it can seem that static visuals will not perform any better (Cutting, 2002). Unlike dynamic content, comics display visuals simultaneously and over space instead of quickly transitioning to give the impression of motion. This static aspect of comics creates issues for both the artist and the reader in terms of interpretation (Potsch & Williams, 2012). Therefore, different techniques have been designed around the world to demonstrate motion. In comics, motion can be shown by certain cues, which might also convey the path (i.e., direction) of motion. Yet, visual motion events remained understudied compared to their verbal counterparts. Consequently, only a limited amount of studies have been conducted on cross-cultural differences in how motion cues and paths interact within depictions (Cohn et al., 2017; Hacımusaoğlu & Cohn, 2022).

In visual narratives, there are consistent ways to convey motion. Movement can be implied by certain cues, such as depicting the poses a figure takes in action (postural cues) or lines trailing behind a mover (motion lines). Some cues, like postures, can exist independently, while some cues are not isolatable (i.e., affixes) (Cohn, 2018). Affixes cannot exist on their own (e.g., motion lines) but need to be attached to a root (e.g., moving object). Although there are other cues, motion lines and postural cues are the most prominent ones.

In addition to motion cues, path information is also an essential part of conveying motion. Path segments convey information about the direction of motion by classifying it from a source (beginning point) via a route (the actual traversal of the path) to a goal (endpoint) (Talmy, 1985). Altogether, these elements provide the path information, whereas the manner describes the characteristics of motion of a figure or object i.e., walking, jumping, and swimming (Hacımusaoğlu & Cohn, 2022). Motion cues in visual narratives can also convey the path and manner of motion and highlight visual motion events. Since postural cues are the poses a figure takes, these can express information about the manner, with or without

motion lines. Motion lines are typically used to define the direction of a path, but the manner information can also be understood by looking at the shape of the motion lines depicted. Thus, those cues not only give a sense of motion, but can also convey information about the manner and path.

However, because of the static nature of images, paths are not always explicit in visual depictions. A path is explicit when pictured in the comic, while it is considered implicit when a path is implied but not directly shown in a comic. More specifically, when the direction of the movement is not clearly demonstrated or when actions happen outside a panel (Geisler, 1999).

As motion can be represented in different ways, motion cues and path information have the possibility to connect. A few studies have discovered elements that could indicate patterns in how motion is depicted in comics worldwide. For instance, Hacımusaoğlu and Cohn (2022) suggest that some motion cues (i.e., motion lines) are more often linked to explicit paths, while others are more linked to implicit paths. In addition, they suggest there are patterns in the use of motion cues with particular path segments. Tversky and Chow (2017) claimed there are cross-cultural differences in the way motion is depicted, while Juricevic (2017) claimed that specific motion cues (i.e., motion lines) highlight motion more strongly when used alone rather than when paired with particular cue types. However, these assumptions have not been tested yet in a corpus analysis of comics. Since only a limited amount of studies (Cohn et al., 2017; Hacımusaoğlu & Cohn, 2022) have paid attention to cross-cultural differences in how motion cues and paths interact within depictions, this thesis aims to investigate whether there are global patterns between the depiction of motion and path information: *To what degree are there systematic patterns in how motion is depicted in comics worldwide? If so, how do those patterns convey path information of motion events?*

As a result, this research adds to the current literature on global cross-cultural differences in motion cues and path structures. By researching comics that have not yet been explored in literature, this study can inform us about the diversity in structures of motion depiction and

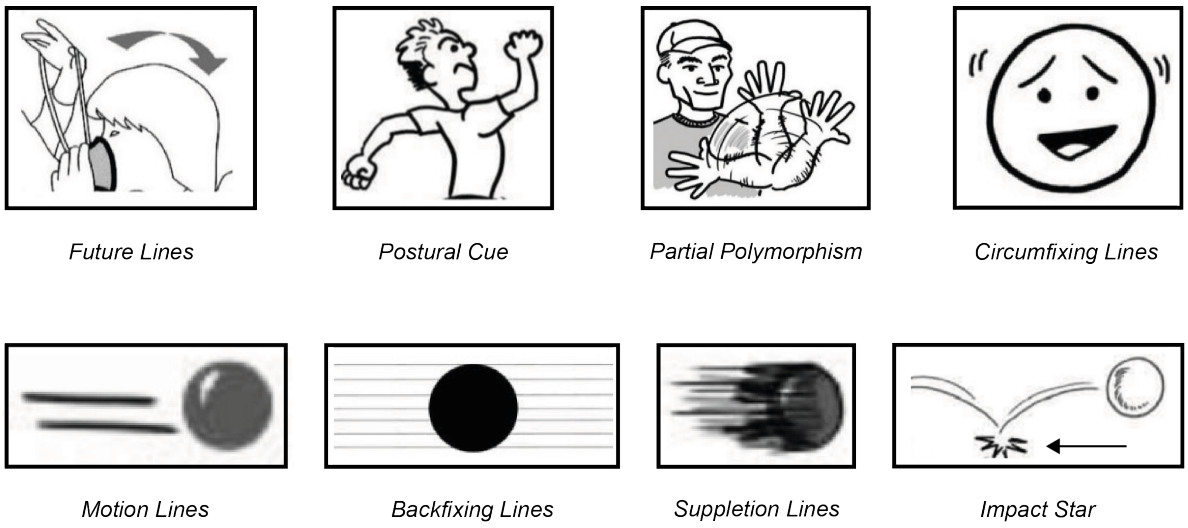
the ways that motion cues and paths interact within static images. In addition, research indicates that comics are a valuable educational tool for elementary and secondary school (Hermita et al., 2020). Especially because of the difference in interpretation of comics worldwide, it is crucial to understand how motion can be illustrated in a universal way that is recognisable to all readers (Cohn, 2020). Thus, this thesis aims to provide a corpus analysis of motion depiction in comics and contribute to society and academic literature regarding motion cues, path information and global patterns.

## Theoretical Framework

As previously stated, it can be challenging to represent motion in images because of their static nature. Therefore, various cues have been designed worldwide to create the illusion of movement. In comics, postural cues and motion lines are often used to express information about the actions that take place. However, many other types of cues can also be used to depict motion. Examples of other motion cues are future lines (lines showing a future direction), circumfixing lines (lines following or surrounding a mover), backfixing lines (lines set in the background to imply motion), suppletion lines (full or parts of the mover is replaced with lines to indicate motion), partial polymorphism (parts of the mover are repeated to indicate motion) and impact stars (star-shaped "bursts" to show the impact of an action). Figure 1 contains illustrations of these types of motion cues.

**Figure 1**

*Examples of Motion Cues (Cohn, 2013, 2018)*




Because there are many types of motion cues, differences may arise in how well these cues are comprehended. For example, Friedman and Stevenson (1986) distinguished between more realistic, postural depictions of movement and non-literal cues of action, such as motion lines and future lines. They state that motion lines may be more difficult to interpret as people encounter this motion cue in highly specific circumstances. However, Carello et al. (1986) reported minimal evidence to support this difference. Yet there is an exception for younger children. Motion lines are not as simple for a child to comprehend, as a solid knowledge of the motion represented does not seem to develop until puberty (Friedman & Stevenson, 1986). Nevertheless, motion lines are effective for other uses. They can be emotive, can accurately reflect an object or the surrounding environment, and can show the route and speed of motion. This makes motion lines an essential motion cue, as they can help determine the direction of motion, which is not always possible with postural cues (Cutting, 2002). However, there is more research in the field of motion lines.

Several researchers investigated how motion lines can contribute to the memory displacement of an object. Kawabe and Miura (2006) showed that motion lines help recall the direction of moving objects and improve the comprehension of their direction compared to

objects displayed without motion lines. These findings are supported by earlier research of Brooks (1977), who states that motion lines can aid understanding and recall of shown events more than depictions without motion lines because they help explain the relationship among objects that would otherwise stay unclear. Additionally, the quantity and length of motion lines deployed in an image can affect the perception of speed that they demonstrate; observers perceive more rapid movement when there are a higher number of motion lines and when they are longer (Hayashi et al., 2012). Motion lines that follow an entity are more successful at conveying motion than no lines, background lines, or lines travelling in the wrong direction (Ito et al., 2010). Given these empirical findings, motion lines are effective cues to represent motion events.

As mentioned before, motion lines can also be used to convey path and manner information of motion events. The manner displays how an object or figure evolves, whereas the path displays the motion's direction (Talmy, 1985). Therefore, path information can be used to clarify which path a figure has taken. When looking at motion lines, the beginning of the path can be seen as a source and the end of the path as a goal. In contrast to postural cues, motion lines can directly demonstrate a figure's or object's course, enabling them to represent a shift in a location beyond a physical barrier (Hacımusaoğlu & Cohn, 2022).

Since motion lines can directly demonstrate the motion's direction, they can depict paths explicitly. However, some cues can imply a path without directly showing it. For example, postural cues do not always clearly demonstrate the direction of a movement, leaving the path implicit. Consequently, researchers have investigated how motion cues differ in their use of explicit and implicit paths. For instance, Hacımusaoğlu and Cohn (2022) looked at path structures and motion cues across 85 comics from China, Germany, the United States, France, Japan, and Korea. Their research investigated whether there are cross-cultural differences in depicting motion events. Their study indicates that, as opposed to the observable pathways communicated by motion lines, path information seems to be more implicit when motion is conveyed through backfixing lines and suppletion lines. This

suggests that motion cues differ in their depiction of paths. Hacımusaoğlu and Cohn (2022) also state that both postures and motion lines are suggested to indicate the explicitness of paths to some extent; however, there is no research comparing those against each other. Some postures can indicate explicit direction based on the direction the figure is facing toward. That might not always be the case, depending on the posture depicted. Whereas motion lines always mark the path directly by default. This would indicate that motion lines depict paths more explicitly than postures. Therefore, several studies suggest that images featuring motion lines are generally perceived as more effective at depicting motion than images that only use postural cues (Cohn & Maher, 2015).

In addition to path explicitness, motion cues seem to be associated with certain path segments. For example, Cohn and Maher (2015) compared comic panels that portrayed regular motion lines to comics that lacked motion lines or contained unusual, reversed lines to investigate the comprehension of motion lines. Their results showed that the relatively consistent depiction of routes outside of sources and goals points to a greater significance for the visual representation of paths themselves in motion events than for their beginning or endpoint. This is in accordance with the notion that motion lines clarify actions by showing their trajectories (Cohn, 2013; McCloud, 1993). Therefore, Hacımusaoğlu and Cohn (2022) suggest that motion lines mainly indicate routes, as these lines directly show a traversal of a visual path. In addition, as the type of posture determines its relation to a path segment, postures may be seen in both a source, route or goal position, but this has not yet been explicitly explored. Hacımusaoğlu and Cohn (2022) also found that both postures and motion lines can predict routes, despite infrequently being shown simultaneously. This suggests that motion lines and postural cues both predict routes, but do not tend to occur together.

Additional research has found cross-cultural differences between visual narratives. For example, there is a difference in the content of comics between countries. America has a comic style in which many superheroes play a role, such as Batman, Spiderman and Superman (Bongco, 2014), while Japanese comics, also called manga, portray features of

exaggeration, humour and satire (Ito, 2005). Moreover, the framing of entities in American comic panels differs from Japanese panels. Cohn et al. (2012) state that American comics mainly focus on actions and figures, while Japanese manga also includes information about the surrounding environment. These cross-cultural differences are also present when depicting motion, especially in contexts like comics (Cohn, 2013; McCloud, 1993). For instance, Hacımusaoğlu and Cohn (2022) found that Chinese and German comics use the most cues in their corpus, notably motion lines that convey the characteristics of the manner. They also concluded that French comics showed more cues than Japanese comics, although these were largely postures. In addition, a closer look at Tversky and Chow's (2017) rating study reveals that Chinese panels have a higher degree of action than English comics. These findings indicate that the way motion is depicted can vary by culture and country.

Markus and Kitayama (1991) also suggest a cross-cultural difference in the amount of action depicted in comics. They propose that Eastern cultures (i.e., China, Japan) value connectivity among people, while Western cultures (i.e., United States, Italy) appreciate individualism more. Therefore, Tversky and Chow (2017) concluded that Eastern comics depict action more than Western comics. This suggests that comics from Africa and Asia convey more action than comics from Europe, America and Oceania. In addition, this could also mean that global regions have distinct profiles for their depiction of motion, but this has yet to be examined.

To conclude, various studies researched motion cues independently, especially how different motion cues can strengthen the comprehension of a motion event. In contrast, only a few studies looked at visual paths (Cohn et al., 2017; Hacımusaoğlu & Cohn, 2022), leaving the relationship between those understudied. Therefore, gaps remain in the literature concerning motion cues and whether these occur more frequently in combination with particular path structures. Both Cohn et al. (2017) and Hacımusaoğlu and Cohn (2022) indicate a possible link between motion cues and path information. However, little research has been done on the interaction between these two types of motion in depictions. Moreover,

assumptions have yet to be tested in a corpus analysis of comics. Given these aspects, we can ask how much they shape a systematic pattern in how motion is depicted in comic books: *To what degree are there systematic patterns in how motion is depicted in comics worldwide? If so, how do those patterns convey path information of motion events?*

Since earlier studies found cross-cultural differences in the amount of action depicted in comics (Markus & Kitayama, 1991), this study expects that global regions will differ in their depiction of motion. For example, Tversky and Chow (2017) already showed that Eastern comics depict more action than Western comics, which could imply that global regions will differ in their use of motion cues and path structures. Therefore, the following hypothesis is proposed:

*H1*: Global regions will have distinct profiles for their depiction of motion.

As earlier studies suggest that Eastern comics depict more action than Western comics (Tversky & Chow, 2017), this study also expects to find cross-cultural differences in the amount of motion depicted in comics. In particular, that comics from Africa and Asia will depict more action than comics from Europe, America and Oceania. This brings us to the following hypothesis:

*H2*: Eastern comics depict more action than Western comics.

The third hypothesis will explore how motion lines and postural cues differ in conveying path segments. Based on prior evidence by Hacımusaoğlu and Cohn (2022) and Cohn (2013), motion lines are expected to mainly indicate routes, as they directly show the traversal of a path. On the other hand, since the type of posture determines its relation to a path segment, it is hypothesised that postural cues may convey information about the actions' source, route and goal. That is why the following two hypotheses are proposed:

*H3a*: Motion lines convey more information about the route of action than the source or the goal.

*H3b:* The type of posture predicts whether it is the actions' source, route or goal.

Based on earlier findings by Hacımusaoğlu and Cohn (2022), this study expects that motion lines and postural cues will also differ in their depiction of paths, meaning there is a relationship between motion cues and path explicitness. In particular, because motion lines can directly mark the path by default, it is expected that motion lines depict paths more explicitly than postures. In contrast, postures can indicate explicit direction depending on the direction the figure is facing toward. This might not always be the case, depending on the posture depicted. Therefore, postures are expected to depict paths more implicitly than motion lines. This brings us to the following hypotheses:

*H4a*: Motion lines depict paths more explicitly than postures.

*H4b*: Postures depict paths more implicitly than motion lines.

Finally, prior research suggests that specific motion cues (i.e., motion lines) highlight motion more strongly when used alone rather than when paired with particular cue types (Juricevic, 2017). Since both motion lines and postural cues can predict routes but do not tend to occur together, it is expected that motion lines will highlight motion more strongly than when paired with postural cues (Hacımusaoğlu & Cohn, 2022). This brings us to the last hypothesis:

*H5*: Motion lines alone highlight routes more strongly than combined with postural cues.

# Methods

## Materials

This research investigated patterns in motion cues and path structure across different countries using a corpus analysis. The corpus of this study consisted of a total of 212 comics which had already been annotated within the TINTIN Corpus. In this research, comics from 48 countries were investigated, such as China, Italy, the United States, and Nigeria. Given the global scope of the ongoing corpus, books from underrepresented areas in the current corpus have been annotated in addition to the already annotated books. Subsequently, a diverse selection of comics was attempted to be included in this study. More information about the origin of the comics is presented in Table 1. See Appendix for the books listed in full.

**Table 1**

*Origin of Comics Included in the Corpus Analysis*

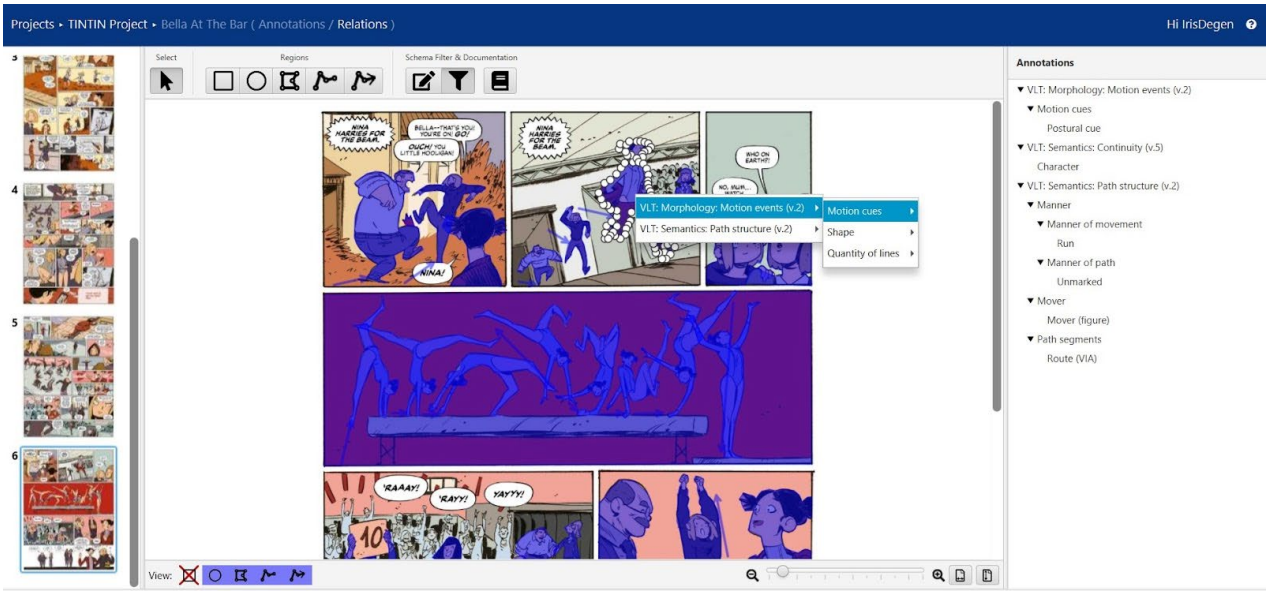
| Continent | Total Books | Average Panels | Publication Dates |
|---|---|---|---|
| Africa | 24 | 40 | 2015-2020 |
| Asia | 64 | 75 | 1972-2021 |
| Europe | 101 | 65 | 1947-2022 |
| North America | 12 | 93 | 1961-2020 |
| South America | 11 | 49 | 2012-2020 |

Annotations were carried out using the software program MAST (Multimodal Annotation Software Tool), which enables users to select and annotate graphic sections of visual or multimodal documents and form relationships between annotations (Cardoso & Cohn, 2022). As can be seen in Figure 2, the program gives the coder numerous tools to create regions around objects and figures in a comic. The coder can then choose the regions and annotate the comic in a specific classification. Moreover, the dropdown menu was used

to annotate comics regarding motion events (motion cues, line shape and quantity of lines) and path structure (manner, mover, path, path segment and physical path). The books were annotated by multiple coders (5) who received training in annotating motion cues and path structure. Coders first reached an adequate level of proficiency in practice annotations before being allowed to annotate the corpus. All annotations were reviewed and discussed to ensure consistency.

**Figure 2**

*Screenshot from the Multimodal Annotation Software Tool (MAST)*




**Area of Analysis**

The coding schemes VLT: Morphology: Motion Events (version2) and VLT: Semantics: Path structure (version2) were used for this study. The VLT: Morphology: Motion Events coding scheme consisted of motion cues and also their shapes and quantity of lines, if applicable. This coding scheme distinguishes various motion cues such as future lines, circumfixing lines, backfixing lines, postural cues, motion lines, suppletion lines, partial polymorphism, and impact stars. This scheme also consisted of the shape of motion lines (i.e., straight, curved, twirl (curlicue), spiral, circumfixing, arrow, zigzag, ribbon and impact

stars). Impact stars can be distinguished between radial lines (straight lines converging toward a centerpoint to show an impact) and stars. Lastly, the quantity of motion lines can be recorded as single, double, or several lines.

The VLT: Semantics: Path structure coding scheme was then used to annotate the meaning expressed by those cues. This scheme consisted of manner (manner of movement and manner of path), mover, path, path segments and physical paths. Given that manner information can be understood by looking at the poses a figure takes in action or the shape of the motion depicted, this coding scheme differentiates between manner of paths (if understood by lines) and manner of movements (if understood by poses). Manner of movement consisted of walk, run, jump and climb. Manner of path distinguished between straight, curving, spinning, twirling, bouncing, or unmarked (when lines do not show the manner of the path). Any other manner information encountered was annotated as 'other' and specified in the notes field. By annotating the mover, the user stated whether the mover was a moving object or a figure. Paths were annotated as either explicit or implicit paths. An explicit path is annotated through the arrow tool since the direction is explicit, while an implicit path is annotated on the mover. Different parts of a given path can also be annotated as source, route, or goal. Lastly, this coding scheme also allows annotating physical paths that can be seen in nature, i.e., tracks, trail, dust, wake, bubble trail and contrail.

**Data Analysis**

This study looked at the total amount of motion cues out of the total number of panels. First, each comic was classified by multiple independent variables (motion lines, postural cues and global region). Then, the mean was calculated as the number of motion cues annotated out of the total number of panels. This was done for each comic, and then the comics were compared as "items". Next, all the comics annotated on morphology and semantics were put in a k-means clustering model. This model was used to answer hypothesis 1, which aimed at finding whether clear groupings of motion cues and path

structures emerged, considering continents. Distributions of clusters from the k-means analysis were analysed across continents with a Chi-Squared test.

Next, Repeated Measures ANOVAs were used to test if the clusters resulting from the k-means analysis differed in their use of motion cues, path segments and explicit and implicit paths. In instances of violation of sphericity, the Greenhouse-Geisser correction was used, and the corrected *p*-values were reported. However, the original degrees of freedom were reported for clarity. Moreover, it was reviewed if groupings have emerged in the number of actions per comic. Specifically testing whether Eastern comics, originating from Africa and Asia, contained a higher number of actions than Western comics, coming from Europe, America and Oceania. To test hypothesis 2, the frequency of motion cues between Eastern and Western comics was compared using an Independent T-Test. In addition, to research how different cues vary across these two regions, a Repeated Measures ANOVA was conducted with Eastern and Western countries and all motion cues.

To test hypothesis 3, it was examined across all books whether motion lines or postures predict specific path segments, using a Linear Regression between motion lines, postures, sources, routes, and goals. Then, a Linear Regression was conducted to examine if motion lines and postural cues can predict paths, with cues (i.e., motion lines and postural) and path explicitness (i.e., explicit and implicit paths), to test hypothesis 4. Lastly, to answer hypothesis 5, it was researched whether motion lines and postural cues occur together when they highlight routes. To test this, a Pearson's correlation was used between motion lines and postures appearing as routes.

## Results

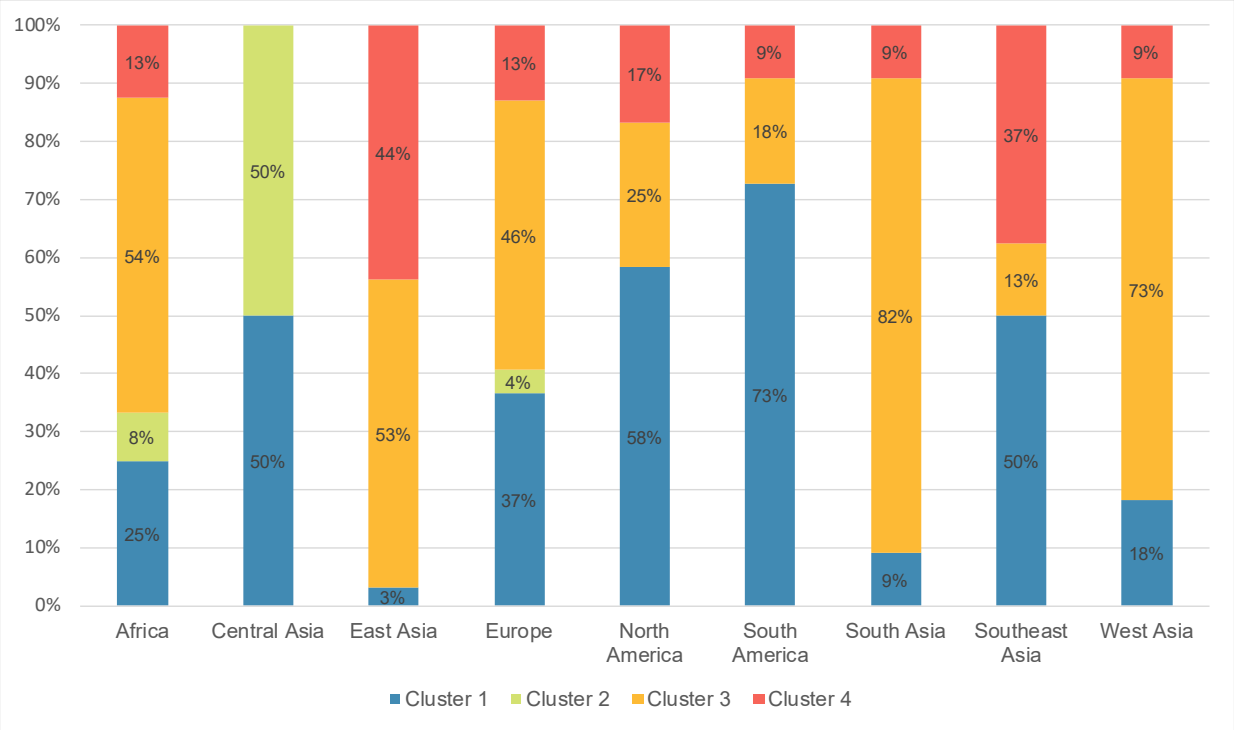
In order to examine patterns in motion cues and path structures across comics, a k-means clustering was performed. This is used to investigate the clusters that arise based on motion cues and paths. This analysis included path segments (source, route and goal), explicit paths, implicit paths and all motion cues (postural cues, motion lines, suppletion lines,

backfixing lines, future lines, circumfixing lines, partial polymorphism, and impact stars). The clustering analysis was fixed to divide the books (*N* = 212) into four clusters (*AIC* = 1912.67, *BIC* = 2087.20, *Silhouette* = 0.23), cluster 1 (*N* = 67), cluster 2 (*N* = 7), cluster 3 (*N* = 100), and cluster 4 (*N* = 38), to make sure all clusters had a considerable amount of comics to be compared. As can be seen in Figure 3, the global regions largely appeared in every cluster. Therefore, the hypothesis (H1) global regions will have distinct profiles for their depiction of motion can be rejected.

After this, a Chi-Squared Test was conducted to analyse the distributions of clusters across continents. The analysis showed that the clusters contained different global regions, $\chi 2\ (24) = 67.67$, $p < .001$.

**Figure 3**

*Distribution of Clusters per Global Region*



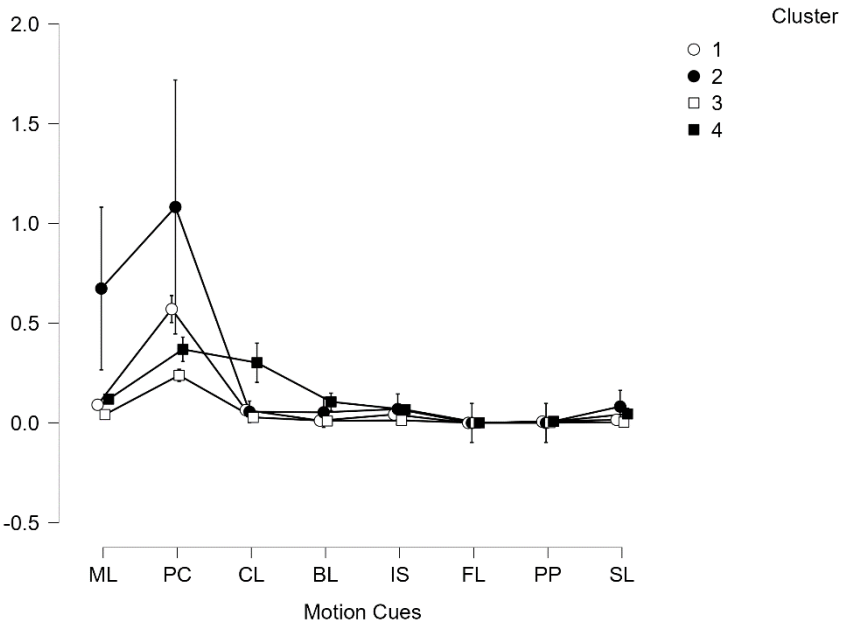

Then, it was tested how the motion cues differ between the clusters. An 8 (motion cue) x 4 (cluster) ANOVA was conducted to test this. Because of a violation of sphericity, the results were corrected using Greenhouse-Geisser correction. The ANOVA showed a main

effect of motion cues, $F(7, 1456) = 238.83$, $p < .001$, partial eta² = .54. The post-hoc tests showed that postural cues were used the most, followed by motion lines and circumfixing lines (all *t*s > 4.33, all *p*s < .001). Impact stars, suppletion lines, backfixing lines, partial polymorphism and future lines showed no differences (all *p*s > .06). There was also a main effect of cluster, $F(3, 208) = 104.69$, $p < .001$, partial eta² = .60. Cluster 2 contained the most motion cues, followed by cluster 4, 1, and 3 (all *t*s > 3.43, all *p*s < .001).

Figure 4 shows the means for every motion cue per cluster. The motion cues have been abbreviated to show the results clearly. These stand for motion line (ML), postural cue (PC), circumfixing line (CL), backfixing line (BL), impact star (IS), future line (FL), partial polymorphism (PP), and suppletion line (SL).

**Figure 4**

*Means of Motion Cues per Cluster*



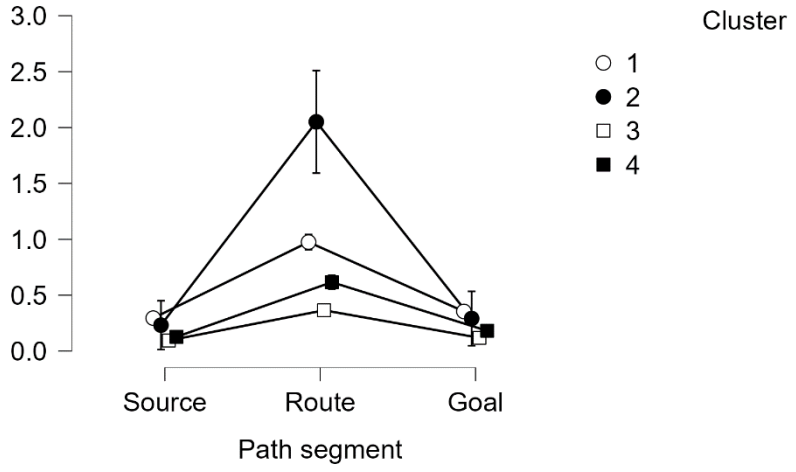

Furthermore, an interaction effect was found between motion cues and the clusters, $F(21, 1456) = 35.59$, $p < .001$, partial eta² = .34. The post-hoc tests showed that cluster 2 contained the most motion lines (all *t*s > 12.06, all *p*s < .001), while the rest did not differ from each other (all *t*s > 1.25, all *p*s > .08). Cluster 2 also contained the most postural cues,

followed by clusters 1, 4 and 3 (all *t*s > 6.11, all *p*s < .001). Cluster 4 contained the most circumfixing lines (all *t*s > 5.35, all *p*s < .001), while others had comparable circumfixing lines (all *t*s > 0.19, all *p*s = 1.00). In addition, cluster 4 contained more backfixing lines than all other clusters (all *t*s > 4.14, all *p*s < .002), except for cluster 2 (*t* = 1.14, *p* = 1.00). The frequency of backfixing lines did not differ between the other clusters (all *t*s > 0.08, all *p*s = 1.00). Finally, the clusters showed no differences in impact stars, suppletion lines, partial polymorphism and future lines (all *p*s = 1.00). Within-cluster comparisons revealed that clusters 1 and 3 did not contain more motion lines than circumfixing lines (all *t*s > 0.89, all *p*s = 1.00), while cluster 4 had more circumfixing lines than motion lines (*t* = 7.09, *p* < .001).

Next, a 3 (path segment) x 4 (cluster) ANOVA was conducted to examine if the clusters differed in their use of path segments. Because of a violation of sphericity, the results were corrected using Greenhouse-Geisser correction. The ANOVA showed a main effect of path segments, $F(2, 416) = 651.47$, $p < .001$, partial eta² = .76. As depicted in Figure 5, routes were used the most (all *t*s > 30.23, all *p*s < .001), while goals were depicted slightly more than sources (*t* = 1.95, *p* = .05). Secondly, a main effect was found of cluster, $F(3, 208) = 138.05$, $p < .001$, partial eta² = .67. Overall, cluster 2 had the most path segments, followed by clusters 1, 4 and 3, respectively (all *t*s > 4.73, all *p*s < .001).

**Figure 5**

*Distributions of Path Segments per Cluster*

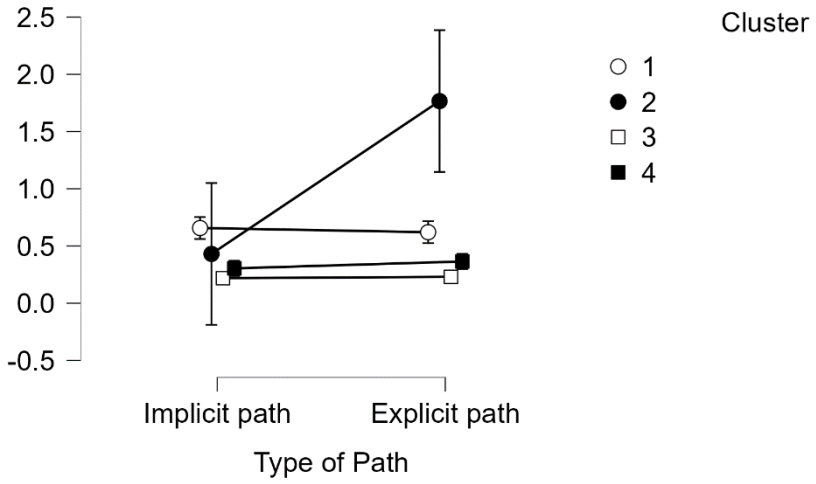


In addition, an interaction effect was found between path segments and cluster, $F(6, 416) = 79.63$, $p < .001$, partial eta² = .54. A post-hoc test showed that cluster 1 contained more sources than all other clusters (all $t$s > 4.46, all $p$s < .001), except for cluster 2 ($t = 0.86$, $p = 1.00$). The other clusters did not differ in their sources (all $t$s > 0.92, all $p$s = 1.00). Also, cluster 2 contained the most routes, followed by clusters 1, 4 and 3 (all $t$s > 7.15, all $p$s < .001). Finally, cluster 1 contained more goals than all other clusters (all $t$s > 4.61, all $p$s < .001), except for cluster 2 ($t = 0.87$, $p = 1.00$). The other clusters showed no differences in goals (all $t$s > 1.44, all $p$s > .36).

Lastly, a 2 (path explicitness) x 4 (cluster) ANOVA was conducted to determine if the clusters differed in their use of implicit and explicit paths. The ANOVA showed a main effect of path explicitness, $F(1, 208) = 128.94$, $p < .001$, partial eta² = .38. As shown in Figure 6, explicit paths were used more than implicit paths ($t = 7.60$, $p < .001$). There was also a main effect of cluster, $F(3, 208) = 33.76$, $p < .001$, partial eta² = .34. Overall, cluster 2 contained the most paths, followed by clusters 1, 4 and 3 (all $t$s > 3.32, all $p$s < .001).

**Figure 6**

*Distributions of Paths per Cluster*




The output showed an interaction effect between path explicitness and cluster, $F(3, 208) = 35.49$, $p < .001$, partial eta² = .54. Cluster 1 contained more implicit paths than all other clusters (all $t$s > 6.48, all $p$s < .001), except for cluster 2 ($t = 2.13$, $p = .38$). The other

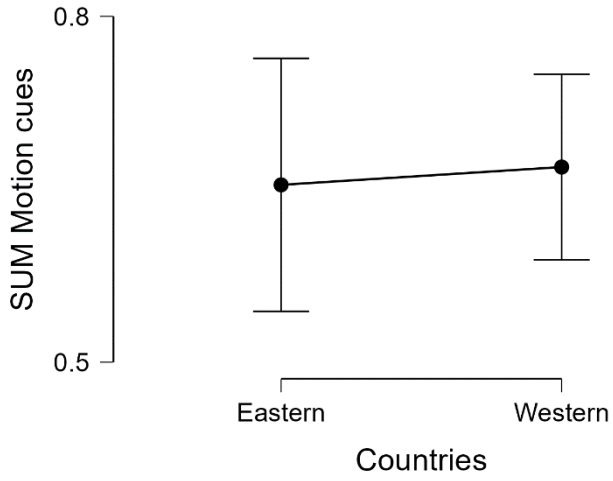
clusters showed no differences in implicit paths (all *t*s > 1.14, all *p*s > .43). Cluster 2 contained the most explicit paths, followed by cluster 1 ($t = 10.76$, $p < .001$). The frequency of explicit paths did not differ between clusters 3 and 4 ($t = 2.62$, $p = .11$).

**Global Region**

Next, the hypothesis was tested if Eastern comics (from Africa and Asia) depict more action than Western comics (from Europe, America and Oceania). To test this, an Independent Samples T-Test is performed with Eastern and Western countries as independent variable and motion cues as dependent variable. The motion cues include suppletion lines ($M = 0.02$, $SD = 0.04$), backfixing lines ($M = 0.03$, $SD = 0.06$), circumfixing lines ($M = 0.09$, $SD = 0.18$), future lines ($M = 0.00$, $SD = 0.00$), impact stars ($M = 0.03$, $SD = 0.05$), partial polymorphism ($M = 0.00$, $SD = 0.02$), postural cues ($M = 0.40$, $SD = 0.31$) and motion lines ($M = 0.09$, $SD = 0.16$). As can be seen in Figure 7, the number of motion cues in Eastern comics was lower than in Western comics, but this difference was not significant (*Mdif* = -0.02, $t(212) = -0.23$, $p = .82$). Therefore, this study does not support the hypothesis (H2) Eastern comics depict more action than Western comics.

**Figure 7**

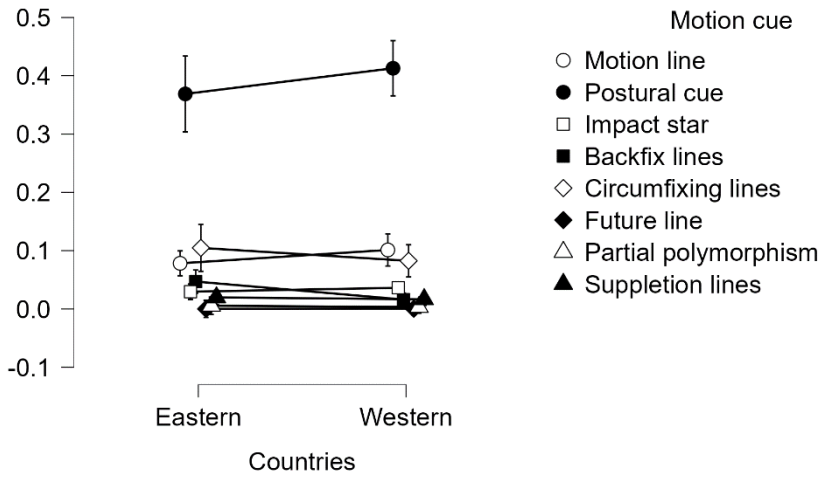
*Means of Motion Cues for Eastern and Western Countries*



The Independent T-Test already showed that Eastern comics do not depict more action than Western comics, but not whether the use of motion cues varies between these two regions. To examine if Eastern comics use different cues to illustrate action than Western comics, a 2 (global region) x 8 (motion cue) ANOVA was performed. Because of a violation of sphericity, the results were corrected using Greenhouse-Geisser correction. The ANOVA showed a main effect of motion cues, $F(7, 1484) = 185.18$, $p < .001$, partial eta² = .47. Figure 8 shows the means per motion cue split for Eastern and Western countries. The post-hoc tests showed that postural cues were used the most (all $t$s > 22.08, all $p$s < .001). This was followed by motion lines and circumfixing lines, which were used more than the rest of the cues (all $t$s > 4.22, all $p$s < .001) but did not differ from each other ($t = -0.29$, $p = 1.00$). The other cues showed no differences (all $t$s > 0.10, all $p$s > .17). There was no main effect of Eastern and Western countries, $F(1, 212) = 0.05$, $p = .82$, partial eta² = .00. Furthermore, there was no interaction effect between motion cues and Eastern and Western countries, $F(7, 1484) = 1.56$, $p = .21$, partial eta² = .01.

**Figure 8**

*Means per Motion Cue, Distinguished by Eastern and Western Countries*

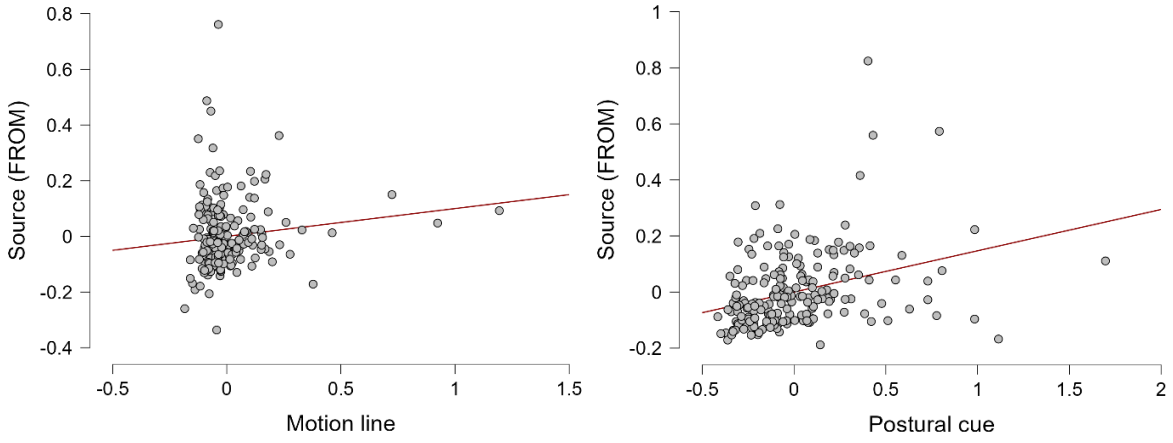


**Path segments**

Several Linear Regressions were then conducted to examine whether motion lines and postural cues primarily convey information about the paths' source, route or goal. First, to determine whether motion lines and postural cues could predict sources, a Linear Regression with motion lines ($M$ = 0.09, $SD$ = 0.16) and postural cues ($M$ = 0.40, $SD$ = 0.31) as predictors and sources ($M$ = 0.18, $SD$ = 0.14) as outcome was performed. The analysis showed that postural cues could predict sources ($b$ = 0.15, $\beta$ = .34, $t(203) = 5.07$, $p < .001$). The model explains 14% of the variance in sources ($R^2$ = .14, $F(2, 203) = 16.61$, $p < .001$). Motion lines are no predictor of sources ($b$ = 0.10, $\beta$ = .12, $t(203) = 1.74$, $p = .08$). The visualisation of the regression analysis of sources can be seen in Figure 9.

**Figure 9**

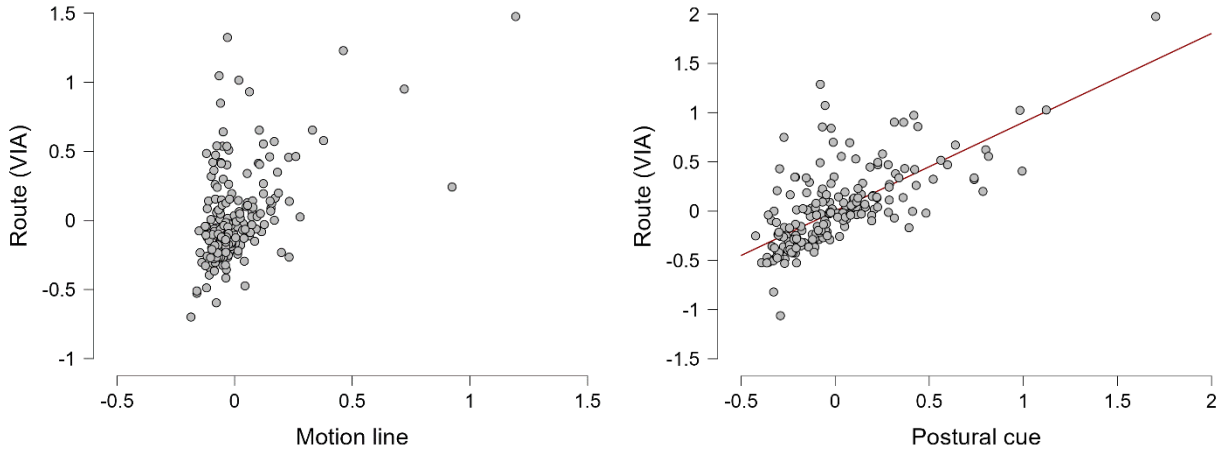
*Regression Analysis of Motion Lines and Postural Cues on Sources*




Secondly, a Linear Regression was performed to determine whether motion lines and postural cues predict routes, with motion lines and postural cues as predictors and routes ($M$ = 0.67, $SD$ = 0.46) as outcome. The analysis showed that routes could be predicted by motion lines ($b$ = 1.13, $\beta$ = .38, $t(210) = 8.61$, $p < .001$) and postural cues ($b$ = 0.90, $\beta$ = .61, $t(210) = 13.71$, $p < .001$). The model explains 60% of the variance in routes ($R^2$ = .60, $F(2, 210) = 159.99$, $p < .001$). Figure 10 illustrates the regression analysis of routes.

**Figure 10**

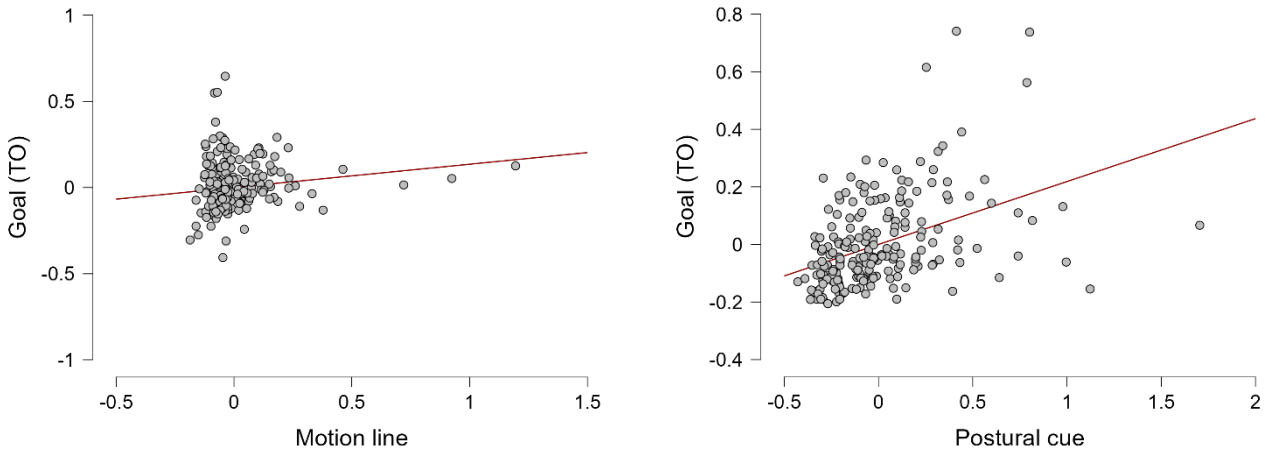
*Regression Analysis of Motion Lines and Postural Cues on Routes*




Third, a Linear Regression was performed to determine whether motion lines and postural cues can predict goals, with motion lines and postural cues as predictors and goals ($M$ = 0.21, $SD$ = 0.16) as outcome. The regression analysis of goals is displayed in Figure 11. The analysis showed that goals could be predicted by motion lines ($b$ = 0.14, $\beta$ = .13, $t(211) = 2.10$, $p$ = .04) and postural cues ($b$ = 0.22, $\beta$ = .42, $t(211) = 6.76$, $p < .001$). The model explains 22% of the variance in goals ($R^2$ = .22, $F(2, 211) = 28.92$, $p < .001$). This means that the hypothesis (H3a) motion lines convey more information about the route of action than the source or goal is not supported, as motion lines can predict both routes and goals. However, the hypothesis (H3b), the type of posture predicts whether it is the actions' source, route or goal is supported.

**Figure 11**

*Regression Analysis of Motion Lines and Postural Cues on Goals*



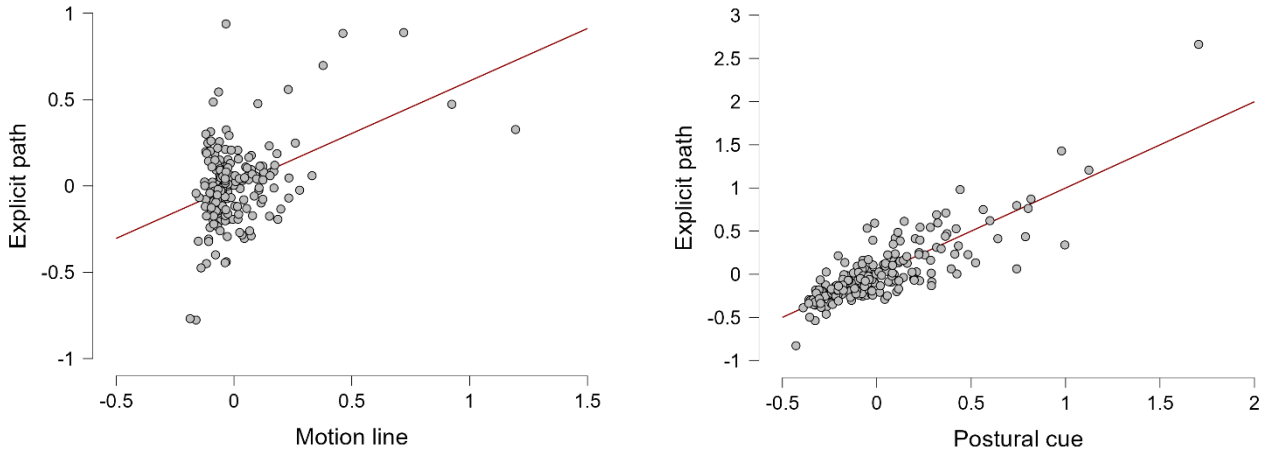
**Explicit and implicit paths**

The k-means clustering already showed that cluster 2 contained many motion lines and postural cues, but also a principal amount of explicit paths. To find out if motion lines and postural cues differ in their depiction of paths, a Linear Regression analysis was performed.

This analysis was performed with motion lines and postures as predictors and explicit paths ($M$ = 0.43, $SD$ = 0.39) as outcome. The visualisation of the regression analysis of explicit paths can be seen in Figure 12. The analysis showed that both motion lines ($b$ = 0.61, $\beta$ = .24, $t(211) = 6.79$, $p < .001$) and postural cues ($b$ = 1.00, $\beta$ = .79, $t(211) = 22.27$, $p < .001$) can predict explicit paths. The model explains 75% of the variance in explicit paths ($R^2 = .75$, $F(2, 211) = 312.89$, $p < .001$). This means that the hypothesis (H4a) motion lines depict paths more explicitly than postural cues can be rejected.

**Figure 12**

*Regression Analysis of Motion Lines and Postural Cues on Explicit Paths*

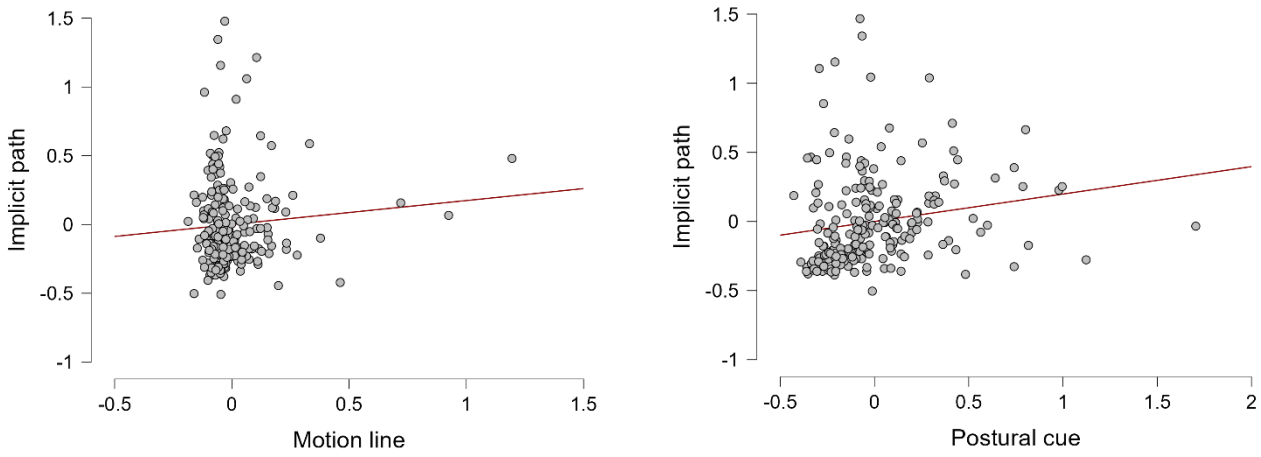



A second Linear Regression analysis was then used to determine if postures depict paths more implicitly than motion lines. This analysis was performed with motion lines and postures as predictors and implicit paths ($M$ = 0.38, $SD$ = 0.34) as outcome. The regression analysis of implicit paths is displayed in Figure 13. The analysis showed that postural cues ($b$ = 0.20, $\beta$ = .18, $t(211) = 2.64$, $p$ = .01) could predict implicit paths in comics. The model explains 5% of the variance in implicit paths ($R^2 = .05$, $F(2, 211) = 4.97$, $p$ = .01). Motion lines

are no predictor of implicit paths ($b$ = 0.17, $\beta$ = .08, $t(211)$ = 1.16, $p$ = .25), indicating that the hypothesis (H4b) postural cues depict paths more implicitly than motion lines is supported.

**Figure 13**

*Regression Analysis of Motion Lines and Postural Cues on Implicit Paths*




**Motion cues and routes**

Lastly, the hypothesis was tested if motion lines alone highlight routes more strongly than combined with postural cues. To test this, a Pearson's correlation was performed with motion lines and routes. On average, the number of routes was 0.67 per panel ($SD$ = 0.46), and the number of motion lines was 0.09 times per panel ($SD$ = 0.16). The analysis showed a correlation between motion lines and routes, $r$ = .50, $p$ < .001. Motion lines accounted for 24.90% of the variance in routes.

A second Pearson's correlation was performed to test the relation between postural cues and routes. On average, postural cues were used 0.40 times per panel ($SD$ = 0.31). The analysis showed a correlation between postural cues and routes, $r$ = .68, $p$ < .001. Postural cues accounted for 46.38% of the variance in routes.

Finally, a Pearson's correlation was performed to test the relation between postural cues and motion lines on the condition of routes. The analysis showed a negative correlation

between postural cues and motion lines on the condition of routes, $r = -.23$, $p < .001$. Postural cues and motion lines accounted for only 5.29% of the variance in routes. This means that the last hypothesis (H5), motion lines alone highlight routes more strongly than combined with postural cues, is supported. Although both postural cues and motion lines predict routes, they do not occur together on routes.

## Discussion

This thesis examined global patterns between the depiction of motion and path information. To answer this research question, this study conducted a corpus analysis of 212 comics from 48 different countries and investigated their global region and use of motion cues and path structures. The main findings include that motion lines and postural cues differ in relation to path segments and path explicitness, and that they do not tend to occur together to depict routes. Moreover, there was no difference in the amount of action between global regions, and global regions do not have distinct profiles to depict motion. Below, these topics will be discussed in more detail.

First, a clustering analysis was performed to find out if clear groupings of motion cues and path structures emerged across global regions. Based on that, four clusters were formed. It was hypothesised that global regions would have distinct profiles for their depiction of motion, as studies indicate that there are cross-cultural differences in the action depicted in comics (Markus & Kitayama, 1991; Tversky & Chow, 2017). However, the clustering analysis revealed inconsistency in paths and motion cues across regions instead of showing patterns. Since there were fewer clusters than regions, and global regions appeared largely in every cluster, there was no confirmation that global regions lined up with clusters. This indicates that no regional strategy forms the clusters, meaning the clusters are created based on a different approach. Consequently, it was tested whether motion cues, path segments and path explicitness differed between the clusters to see whether other patterns emerged.

Since the clustering analysis showed no patterns based on global region, it was tested whether the clusters contained different types of motion cues. Overall, postural cues were used the most of all cues, followed by motion lines and circumfixing lines. These findings are consistent with research by Hacımusaoğlu and Cohn (2022), who found that postures are more often used to depict motion than motion lines. Furthermore, the results showed that cluster 2 contained the most motion cues and cluster 3 the least. Because of this, it seems that cluster 2 contains more motion than the other clusters. Cluster 2 also contained the most postural cues and motion lines, while cluster 4 had the most circumfixing lines. Other motion cues showed no considerable differences between the clusters. This might be due to the scarcity of cues like future lines and partial polymorphism, which makes distinctions less obvious.

Besides motion cues, clusters differed in their use of path segments. All clusters consisted mainly of routes, followed by goals and sources. This is in line with research by Cohn et al. (2017), which shows that routes are more often employed in motion events than sources or goals. This indicates that the visual representation of routes in motion events is more important than their start or endpoint, while the results also correspond with the idea that the starting point of paths is less important than the endpoint in verbal language, perception and attention (Cohn et al., 2017). However, clusters also differed. Compared to the other clusters, cluster 2 consisted of the most path segments and routes, which supports the idea that cluster 2 contains more motion than the other clusters.

Lastly, it was investigated if the clusters differed in their use of explicit and implicit paths. The findings indicate that explicit paths were used more than implicit paths in all clusters. This might be because explicit paths, as opposed to implicit paths, indicate the direction of motion, making it easier to understand a figure or object's path. Similar to earlier results, the majority of paths were found in cluster 2. Again, this is consistent with the assumption that cluster 2 consists of more motion than the other clusters. Finally, cluster 1 contained the most implicit paths, whereas cluster 2 contained the most explicit paths.

When looking at the results, it is clear that the clusters differ in their use of motion cues, path segments and path explicitness. However, patterns are also found between cues and path structures, which is consistent with some of the hypotheses. For example, cluster 1 consisted of the most implicit paths, sources and goals. Since the actual path is not directly shown in a source or goal position, it is plausible that this is the reason for this cluster's high amount of implicit paths. This is in line with cluster 1 having the least amount of motion cues, as the start and endpoint of actions do not necessarily need to be in motion. Similarly, cluster 2 contained many routes and explicit paths, which can be explained by the fact that routes make the path traversed more apparent. Furthermore, the majority of postural cues and explicit paths are located in cluster 3. This suggests a relationship between postural cues and explicit paths, which is in line with hypothesis 3. As cluster 2 primarily comprises motion lines, postural cues and routes, it also corresponds with hypothesis 4, which states that both motion lines and postural cues can predict routes.

Overall, the analysis showed that clusters differ in their use of motion cues, path segments and path explicitness. Given the found correspondence between motion cues and their semantic meaning, clusters might have arisen based on different strategies of representing motion rather than certain global regions. Perhaps the clusters are formed based on visual language, genre, or another topic that was not researched in this study. Therefore, future research could investigate if there is a pattern in which the clusters are formed and what factors play a role in this process. Below, the general relationships between motion cues and paths will be further discussed.

After the clustering analysis, it was examined if Eastern comics depict more action than Western comics. Earlier studies suggested that in describing depictions, Eastern cultures value interconnectedness among people, while Western cultures emphasise individualism more (Markus & Kitayama, 1991). Therefore, it was hypothesised that comics from Africa and Asia depict more action than comics from Europe, America and Oceania. However, results showed no difference in the amount of action between Eastern and

Western comics. This contrasts with the research by Tversky and Chow (2017), who found that comics from Eastern cultures contained more action than comics from Western cultures. A possible reason could be the scope of their corpus. They used only 16 stories from 4 countries, while this research used 212 comics from 5 global regions, including 48 countries.

The results already showed that Eastern comics do not depict more action than Western comics, but not whether the use of motion cues varies between these regions. Therefore, it was tested if Eastern comics use different cues to illustrate action than Western comics. First, postural cues were used most in both regions, in line with the clustering analysis. However, in this analysis, motion lines and circumfixing lines did not differ in frequency, which might imply that there is no significant difference between these cues after all. After this, the motion cues were compared between Eastern and Western countries. These results only showed that Western comics used more postural cues and motion lines than Eastern comics. This is consistent with the study by Hacımusaoğlu and Cohn (2022), who found that French comics depicted more postures than Japanese and Korean comics. Moreover, their research showed that German, US and Chinese comics used more motion lines in their panels compared to French, Japanese and Korean comics. It is noticeable that the group with German, US and Chinese comics mainly consisted of Western countries, and the group with French, Japanese and Korean comics mostly of Eastern countries. This might imply that Western comics use more motion lines than Eastern comics. However, this cannot be concluded with the current data. Therefore, future research could investigate if countries differ in their use of motion cues instead of the amount of action to see if patterns can be found.

To test the third hypothesis, it was examined if postural cues and motion lines convey information about the source, route or goal of an action. Previous literature suggested that motion lines primarily indicate routes, as they can clarify actions by showing their path (Hacımusaoğlu & Cohn, 2022). Nevertheless, the results showed motion lines can convey information about both the route and goal of an action. This contrasts with the research of

Hacımusaoğlu and Cohn (2022), who claimed that motion lines mainly indicate routes, as these lines mark the path traversed. A possible reason could be that motion lines might mark the endpoint if a path reaches its goal. However, since the relationship between motion lines and goals is on the edge of significance ($p = 0.04$), this connection should be investigated further. Future research could test whether motion lines are still a successful predictor of goals with different comics, or investigate if genre plays a role. For instance, manga already depicts more paths than other comics (Cohn et al., 2017); perhaps the relationship with path segments is also different because of this. Nevertheless, the Linear Regression showed that postural cues could predict sources, routes and goals, which is in line with research by Hacımusaoğlu and Cohn (2022).

As the clustering analysis showed a possible relationship between motion lines, postural cues and explicit paths, it was also tested if these cues differ in their depiction of paths. Since motion lines always mark the path directly (Hacımusaoğlu & Cohn, 2022), it was hypothesised that motion lines depict paths more explicitly than postures. However, the results showed that both motion lines and postural cues could predict explicit paths. One explanation might be that both motion lines and postures are suggested to indicate explicit paths to some extent. Postures might predict explicit paths depending on the posture depicted, whereas motion lines would always mark the path directly (Hacımusaoğlu & Cohn, 2022). This means that the type of posture can determine whether the direction is explicit or implicit. Consequently, future research could investigate what type of postures are more related to implicit and explicit paths and if the manner of movement plays a role here.

However, in line with the hypothesis, postural cues indeed depict paths more implicitly than motion lines. The results reveal that motion lines are not predictors of implicit paths, while postural cues are. This is consistent with research by Hacımusaoğlu and Cohn (2022), who hypothesised that postures convey paths more implicitly. Therefore, this study supports the idea that postures are a predictor of implicit paths.

Finally, this study investigated if motion lines alone highlight routes more strongly than combined with postural cues. Previous research suggested that postures and motion lines could predict routes, even though they are infrequently shown together (Hacımusaoğlu & Cohn, 2022). This analysis showed that motion lines and postural cues predict routes, but do not tend to occur together on routes. In other words, the frequency of motion lines used to depict routes decreased as the postural cues increased, and vice versa. This is in line with Juricevic's (2017) research, which states that motion lines alone emphasise motion events more strongly than combined with other cue types.

## Conclusion

This thesis examined cross-cultural differences in how motion cues and paths interact within comic panels. Five hypotheses were tested to investigate the relationship between motion cues and path structures. In line with prior research, this study showed that motion cues are indeed more depicted in relation to specific path structures, which provides evidence there are patterns in how motion is depicted throughout comics. However, this study showed that global regions alone do not motivate the profile of motion in comics. It seems that different strategies are suggested by the clusters used in this study, which raises the question of what exactly these strategies are. Perhaps visual language, genre or a different topic that is not addressed in this study plays a role in this process. Therefore, more work is needed to determine the strategies the clusters are indicative of, as it is not a global region. In any case, this study contributes to understanding patterns and differences in motion depiction in visual narratives and provides a foundation for further research on the strategies used in forming clusters.

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## Appendix

*List of comics*

| | Title | Author | Country |
|---|---|---|---|
| 1 | Jinn Wars | Various | Egypt |
| 2 | Ron Khaltoo | Various | Egypt |
| 3 | Sabab Majghol | Farid Nagi | Egypt |
| 4 | Sniper (Al Kanass) | Mukhtar Zain, Hamid Barham, Ghada Mustafa | Egypt |
| 5 | Eru 2 | Ozo Ezeogu | Nigeria |
| 6 | Avonome v.2 | Stanley Obende | Nigeria |
| 7 | Black Sage | Sola Adebayo | Nigeria |
| 8 | Tatashe | Tobe Max Ezeogu | Nigeria |
| 9 | Amazing Tek Kids | Alexander “Rudeworks” Ighoja | Nigeria |
| 10 | Hero Kekere 6 | Kelechi Isaac | Nigeria |
| 11 | Di Iche | Nwankwor Newman | Nigeria |
| 12 | Chayoma | Jimmy King, Ape Ekene Polyca | Nigeria |
| 13 | ShowDown - Chaos Rising | Alexander “Rudeworks” Ighoja | Nigeria |
| 14 | Chronicles of the Newborn - Rise of Mlezi | Adeniji Jr | Nigeria |
| 15 | Razor-man (ComicUp) | Bill Masuku, Tinodiwa Makoni | Zimbabwe |
| 16 | Simbi-Rise of The Machinist | Tatenda Mbudzi | Zimbabwe |
| 17 | Shark Finn-1 | James Magwenzi | Zimbabwe |
| 18 | Umzingeli-The African Bounty Hunter | Eugene Ramirez & Dan Muwanigwa | Zimbabwe |
| 19 | Supreme Legends | Panashe Chimurudze | Zimbabwe |
| 20 | Themba | Adrean Sigogo | Zimbabwe |

| | | | |
|---|---|---|---|
| 21 | The Solitary Sward Sovereign | Adrean Sigogo | Zimbabwe |
| 22 | ParaDox | T.S. Zombie | Zimbabwe |
| 23 | Welcome to Dead World | Bill Masuku | Zimbabwe |
| 24 | Grace | Kudakwashe Riwizi | Zimbabwe |
| 25 | 6People Artist 6 | Janiya Ermekbaeva | Kazakhstan |
| 26 | 6People Artist 7 | Artem Gorchakov | Kazakhstan |
| 27 | Ah, Ah, Ah! | Liu Wei | China |
| 28 | Evolution: The Epic of Earth | Lv Bo | China |
| 29 | Raven Forest | Lu Yizhou | China |
| 30 | La Boite a Voeux | Yi Liang | China |
| 31 | Des Pekinois Pas Tres Civilises | Ji An | China |
| 32 | Legend of Tianma | Chu Mi | China |
| 33 | Night Bus | Zuo Ma | China |
| 34 | Fly: The Song of frogs | Zhang Xiao Yu | China |
| 35 | The Night of Ghosts | Qian Yu | China |
| 36 | Cuisine Chinoise | Zao Dao | China |
| 37 | 14 days in the desert | Liu Tuo, Xu Zi Ran, Senyu Studio | China |
| 38 | A Restaurant Nearby | Yao Ren | China |
| 39 | Echo in Hai Men | Seven | China |
| 40 | Anne Freaks | Yua Kotegawa | Japan |
| 41 | Drifting Classroom | Kazuo Umezu | Japan |
| 42 | Sky High: Karma | Tsutomu Takahashi | Japan |
| 43 | Eden: It's an Endless World! | Hiroki Endo | Japan |
| 44 | Ranma | Rumiko Takahashi | Japan |
| 45 | REAL | Inoue Takehiko | Japan |

| | | | |
|---|---|---|---|
| 46 | Akira | Otomo Katsuhrio | Japan |
| 47 | Missing Piece | Hisaya Nakayo | Japan |
| 48 | Fullmetal Alchemist | Hiromu Arakawa | Japan |
| 49 | Ghost in the Shell | Masamune Shirow | Japan |
| 50 | Kagerou Nostalgia | Satomi Kubo | Japan |
| 51 | Naruto | Masashi Kishimoto | Japan |
| 52 | Bumbardai | Mr. Nambaral Erdenebayar | Mongolia |
| 53 | Totem | Richi Hart | Mongolia |
| 54 | Great General Mighty Wing | Lim Wal-Yong | North Korea |
| 55 | The Sea Girl and the Prince | Bae in-Yeong | North Korea |
| 56 | The Secret of Frequency A: An Incredible Disaster | Ko Im-Hong | North Korea |
| 57 | The Wild Pigeons of Clearwater Cliff | Pak Chang-Yun | North Korea |
| 58 | Blizzard in the Jungle | Ri Chol-Geun | North Korea |
| 59 | Today is the last day of the rest of your life | Ulli Lust | Austria |
| 60 | Gilgamesh | Emiliyan and Stanimir Valev | Bulgaria |
| 61 | Dragon Last | Daniel Atanasov (Satanasov) | Bulgaria |
| 62 | The Adventures of the Stork Choco and the Frog Boko | Rumen Petkov | Bulgaria |
| 63 | Lucky | Milena Simeonova | Bulgaria |
| 64 | Spartacus son of the rebellious copper | Georgi Shumenov | Bulgaria |
| 65 | The Pernach Master | Stella Violari | Cyprus |
| 66 | The Oysters of Time | Dzian Baban, Vojtech Masek, Jan Siller | Czech Republic |

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| 67 | Infection | Casper Sand Christensen | Denmark |
| 68 | Anepantla | Lina Rosé Saxtorph | Denmark |
| 69 | My Beautiful Aunt | Tatiana Goldberg | Denmark |
| 70 | Homunculus | Rune Ryberg | Denmark |
| 71 | Marlene | Peter Snelbjerg | Denmark |
| 72 | The song we didn't know | Christer Boegh Andersen | Denmark |
| 73 | Walking with Samuel | Tommi Musturi | Finland |
| 74 | Keiden Kaupunki | Tiitu Takalo | Finland |
| 75 | The Ozone Diary | Pentti Otsamo | Finland |
| 76 | The Witch Door | Anni K. | Finland |
| 77 | Sulfur and Salt | Susanna Nousiainen | Finland |
| 78 | Orwell | Sébastien Verdier | France |
| 79 | Call me Nathan (Appelez-moi Nathan) | Catherine Castro & Quentin Zutton | France |
| 80 | La planète encore | Moebius | France |
| 81 | Fairy Tales gone Spandex | Albert Hulm | Germany |
| 82 | Vom Anfang | Carolin Reich | Germany |
| 83 | Punk | Márk László | Hungary |
| 84 | The Voice of the Master (A gazda hangja) | Miklós Felvidéki | Hungary |
| 85 | Mactir | Eoin Barclay | Ireland |
| 86 | Bed | Anthea West | Ireland |
| 87 | Eyes | Anthea West | Ireland |
| 88 | The Fiend in the Forest | Clare Foley | Ireland |
| 89 | Beloved | Katherine Foyle | Ireland |
| 90 | Finger | Anthea West | Ireland |
| 91 | The World Ends With You | Ken Mahon | Ireland |

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| 92 | Sredni Vashtar | Clare Foley | Ireland |
| 93 | Diego Armando Maradona | Paolo Castaldi | Italy |
| 94 | Marie Curie | Alice Milani | Italy |
| 95 | Socrate | Francesco Barilli, Alessandro Ranghiasci | Italy |
| 96 | Vincent Van Gogh: La tristezza durerà per sempre | Francesco Barilli, Sakka | Italy |
| 97 | Gianna | Arianna Melone | Italy |
| 98 | Exit | Gloria Bardi, Luca Albanese | Italy |
| 99 | Il mio Salinger | Valentina Grande, Eva Rossetti | Italy |
| 100 | Eeuwig 1913 | Marcel Ruijters | Netherlands |
| 101 | Vincent | Barbara Stok | Netherlands |
| 102 | Days of Sand | Aimée de Jongh | Netherlands |
| 103 | Peter en de Wolf | Wilbert van der Steen | Netherlands |
| 104 | Under Regnbuen | Emily Sørensen | Norway |
| 105 | Dragens Øye: Angrepet | Cha Sandmæl | Norway |
| 106 | Oppfinneren (The Inventor) | Lars Henrik Eriksen | Norway |
| 107 | Northern Lights: The Valley of the Trolls | Malin Falch | Norway |
| 108 | Hunger | Knut Hamsun & Martin Ernstsen | Norway |
| 109 | Shhh! | Jason | Norway |
| 110 | Tylko dla dorosłych | Janusz Christa | Poland |
| 111 | Centralny Okręg Przemysłowy. Walka o Stalową Wolę (Part 3) | Jerzy Wróblewski, Adam Walawski | Poland |
| 112 | Dziewięciu z nieba | Grzegorz Rosiński, Stanisław Majewski | Poland |

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| 113 | Poselstwo do Gniezna | Szymon Kobyliński, Leszek Moczulski | Poland |
| 114 | Spotkanie | Bogusław Polch, Ryszard Siwanowicz | Poland |
| 115 | Kurs na Półwysep Jork. Bohater Roch (Part 1) | Janusz Christa, Adam Kołodziejczyk | Poland |
| 116 | Raid on Istanbul | Jacek Brzozo Kuziemski | Poland |
| 117 | Odata cu Gerul | Andrei Modovan, Octav Ungureanu | Romania |
| 118 | Gainarii | Alexandra Gold | Romania |
| 119 | File de Hronic Vitejesc | Nicolae Florin | Romania |
| 120 | Prinde Visul! | Marian Mirescu | Romania |
| 121 | Mica epopee | Valentin Enachi, Calin Enachi | Romania |
| 122 | Ultima Recomensã | Vlad Popa | Romania |
| 123 | Comic Gianchi | Anghel Serban | Romania |
| 124 | Pirozhki | Sideburn004 | Russia |
| 125 | The Gift of Goddess Ai | Lina & Yu | Russia |
| 126 | Anime Nyash | Alexey Kuryatnikov | Russia |
| 127 | Once upon a tale | Sideburn004 | Russia |
| 128 | Yakutia | Bogdan Fedotov | Russia |
| 129 | First One | Amito Arai | Russia |
| 130 | Inspiration | Dzikawa | Russia |
| 131 | Bonding | Lumarin, MarinaPRIV | Russia |
| 132 | Path to the Future paved with memoria gems | Hetiru, Semkul | Russia |
| 133 | Tagar | Anna Sergeeva, Marina Privalova | Russia |
| 134 | Princess Frog | Ksenia M Belka | Russia |
| 135 | Cat Claw: The final cat | Branislav Kerac | Serbia |
| 136 | Korporativni pandemonijum | Aleksandar Zolotić | Serbia |
| 137 | Caminantes | Pedro Lobato | Spain |

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| 138 | Islamundo – Primera temporada | Dapz (David Pérez Gutiérrez), Jotadé (Jesús Daniel Fernández) | Spain |
| 139 | El Capitán Coraje 11 El fin de un esbirro | G. Iranzo | Spain |
| 140 | Ardalén | Miguelanxo Prado | Spain |
| 141 | 1714 Baluarte | Cels Piñol and Àlex Santaló | Spain |
| 142 | El violeta | Juan Sepúlveda Sanchis, Antonio Mercero | Spain |
| 143 | El arte de volar | Antonio Altarriba | Spain |
| 144 | El Faro | Paco Roca | Spain |
| 145 | La casa de los susurros | David Muñoz, Tirso Cons | Spain |
| 146 | Ken Games: Piedra | José Robledo y Marical Toledano | Spain |
| 147 | Baby Blue | Bim Eriksson | Sweden |
| 148 | Gennady the Pigeon | Tetiana Khlon (Koro) | Ukraine |
| 149 | The Dream Catcher | MaiSays | Ukraine |
| 150 | Random Number | Gamebone1229 | Ukraine |
| 151 | Oasis | Natalia Rerekina | Ukraine |
| 152 | Justine-Messenger of Justice | PJ Holden | United Kingdom |
| 153 | In The Cold Dark | V.V. Glass | United Kingdom |
| 154 | Decomposition Jones | Steve Mannion | United Kingdom |
| 155 | Judge Dredd-Adios Rowdy Yates | Carlos Ezquerra | United Kingdom |
| 156 | Ace Hart in Men of Rubber | | United Kingdom |
| 157 | Anderson, Psi-Division-Wiierd | Boo Cook | United Kingdom |

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| 158 | Steve Larabee "Will Christmas come to Houston?" | | United Kingdom |
| 159 | Bella At The Bar | Vanessa Cardinali | United Kingdom |
| 160 | Generational Love | Lazpev | Jamaica |
| 161 | Strange Adventures: The Toy Soldier War | Carmine Infantino | United States |
| 162 | Age of Bronze | Eric Shanower | United States |
| 163 | Strange Adventures: The Invisible Space-Dog | Gil Kane | United States |
| 164 | Strange Adventures: War with the Giant Frogs | Sid Greene | United States |
| 165 | Savage Dragon | Erik Larsen | United States |
| 166 | Spawn | Todd McFarlane | United States |
| 167 | Danger Girl | J. Scott Campbell | United States |
| 168 | Emperor Doom | Bob Hall | United States |
| 169 | Way of the Rat | Chuck Dixon | United States |
| 170 | Doc Savage | John Buscema, Tony DeZuniga | United States |
| 171 | Star Wars Annual | Mike Vosburs, Steve Leialola | United States |
| 172 | La chola sin cabeza | Wálter J.Gómez G. y Giovany A. Maida M. | Bolivia |
| 173 | La creación de Don Juan | Joel Ojeda Colque | Bolivia |
| 174 | The PiRats | Alexis Vivallo | Chile |
| 175 | Liona Universe Reboot | Ivan Ramirezo | Costa Rica |
| 176 | Trinitarios | Leorian Ricardo | Dominican Republic |

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| 177 | El Verdagazo | Jorge E. Pérez, Edison Montero, Cristian Félix, Rafael Hernández de Padua | Dominican Republic |
| 178 | Héroe Nacional | Arturo Aguirre | Guatamala |
| 179 | El Motivo | Enzo Pertile | Paraguay |
| 180 | Un Carpintero en la Guerra del Chaco | Roberto Goiriz | Paraguay |
| 181 | La Batalla de Tacuarembó | Diego Jourdan | Uruguay |
| 182 | El Congreso de Tucumán | Silva Bros | Uruguay |
| 183 | Horror (Didha) | Nahian Nabir | Bangladesh |
| 184 | Horror (Ke) | Aubhrodeep Das | Bangladesh |
| 185 | Horror (Rakkhosh razze bhoot) | G.M. Tanim, Rubaiyath Habib, Saida Nahar, Zahid Hossain | Bangladesh |
| 186 | Horror (Nightmare) | G.M. Tanim, Rubaiyath Habib, Saida Nahar, Zahid Hossain | Bangladesh |
| 187 | Horror (Ghun) | Adib Reza Rongon | Bangladesh |
| 188 | Horror (Glitch) | Adhora Pototry | Bangladesh |
| 189 | Horror (Rumal) | Ashifur Rahman Rakesh | Bangladesh |
| 190 | Horror (Mukchor) | Ashiqur Rahman Rafi | Bangladesh |
| 191 | Horror (Nil Chokh) | Farsid Araf | Bangladesh |
| 192 | Horror (Koshai) | Thanvir Ahmed Rio | Bangladesh |
| 193 | Horror (Moddho raater train) | Hridita Banik | Bangladesh |
| 194 | Curse of the Red Velvet | Ain Lavendra | Malaysia |
| 195 | Luck of the Honest Man | Arif Ahmad | Malaysia |
| 196 | Broccoli and Cauliflower | Elina Yusof | Malaysia |
| 197 | Myanmar Silent Horror- Night Story | Toon Waiyan Tgi | Myanmar |

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| 198 | Last Hope | Gerry Alanguilan | Philippines |
| 199 | The Burger Refuses | Ryan | Philippines |
| 200 | Can we be friends? | Cocon | Thailand |
| 201 | One Shot | Can Tieu Hy | Vietnam |
| 202 | Hidden Talent | Tigran Vardikyan | Armenia |
| 203 | Boomerang | Tigran Mangasaryan | Armenia |
| 204 | Pressure | Tigran Vardikyan | Armenia |
| 205 | Varda | Tigran Mangasaryan | Armenia |
| 206 | Babies For Sale | Tigran Mangasaryan | Armenia |
| 207 | 26 Needled Girl | Vahe Nersesian | Armenia |
| 208 | Franklin Gonzales - The Last Song | Vahe Nersesian | Armenia |
| 209 | Mom's Pakhlava | Tigran Mangasaryan | Armenia |
| 210 | Veni, Vidi, Divisam (I came, I saw, I divided) | Vahe | Armenia |
| 211 | Mosquito | Vahe | Armenia |
| 212 | 40 Years of Silence | Vahe Nersesian | Armenia |