# Analysing the Early *The Amazing Spider-man*

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## Abstract

We report on a study of the early issues of *The Amazing Spider-man* using various kinds of panel counts. These help us to consider how the comic develops, both in plotting and villain characterisations. We also examine the use of supporting characters, and the tradeoffs between supporting characters and action (fighting). We develop ratios that highlight these tradeoffs.

## 1. Introduction

*The Amazing Spider-man* (ASM) is considered one of the first comics to place a super-hero in a world populated by detailed characters, who interact with the hero in interesting ways, and where concerns of the time are examined (e.g. racism, student activism, drugs).

Judging these claims is problematic because they are subjective: for example, what exactly is a detailed character? We want to develop objective criteria which can shed light on these claims. In particular, we require measures that can help us judge the plotting of stories, the development of villains and supporting characters, the importance of supporting characters to stories, and the balancing of supporting characters and action.

The measures are based around panel counts, principally of supporting character appearances, and the number of panels involving fighting.

We have analyzed Spider-man's first appearance in *Amazing Fantasy* #15 (AF15), and almost all ASM issues up to and including issue #81. These cover August 1962 to February 1970. Stan Lee is the credited writer for all these comics, with Steve Ditko sharing credit for #26-38 (excepting #31), and John Romita involved in the writing of issues #77, #78 and #81. Steve Ditko is the penciller until #38, replaced by John Romita after that; Romita received help from assorted bullpen staff starting from #57.

Our sources are Volume 1 of *The Essential Spider-Man* [2] for AF15, and ASM #1 to #20. Details on issues #21 to #81 were taken from the 1970's UK reprint comic *Spider-man Comic Weekly* [3]. For some reason, ASM #29 ("Never Step on a Scorpion") and #62 ("Make Way for Medusa") were not reprinted, and so there are gaps in our analyses. We stop at #81 because that's where our collection of 1970's comics ends. Certain background information was obtained from *FOOM* no.3 [5], which discusses Spider-man and includes brief publication details.

Most of the analyses were carried out using Microsoft Excel, with some help from GraphPad Prism [1] for Figure 4. The statistical tests we carried out are explained in any text, such as [4].

## 2. Villains Considered

Table 1 gives the number of new villains introduced during Steve Ditko's tenure on ASM.

| During Ditko | After | Total |
|---|---|---|
| 27 (64.3% of total) | 15 (35.7%) | 42 |

**Table 1: New Villains during/after Ditko**

The reduction in new villains is quite marked; this may indicate a decline in innovation, or perhaps a period of consolidation when existing characters were examined in more detail. Figure 1 suggests the latter.
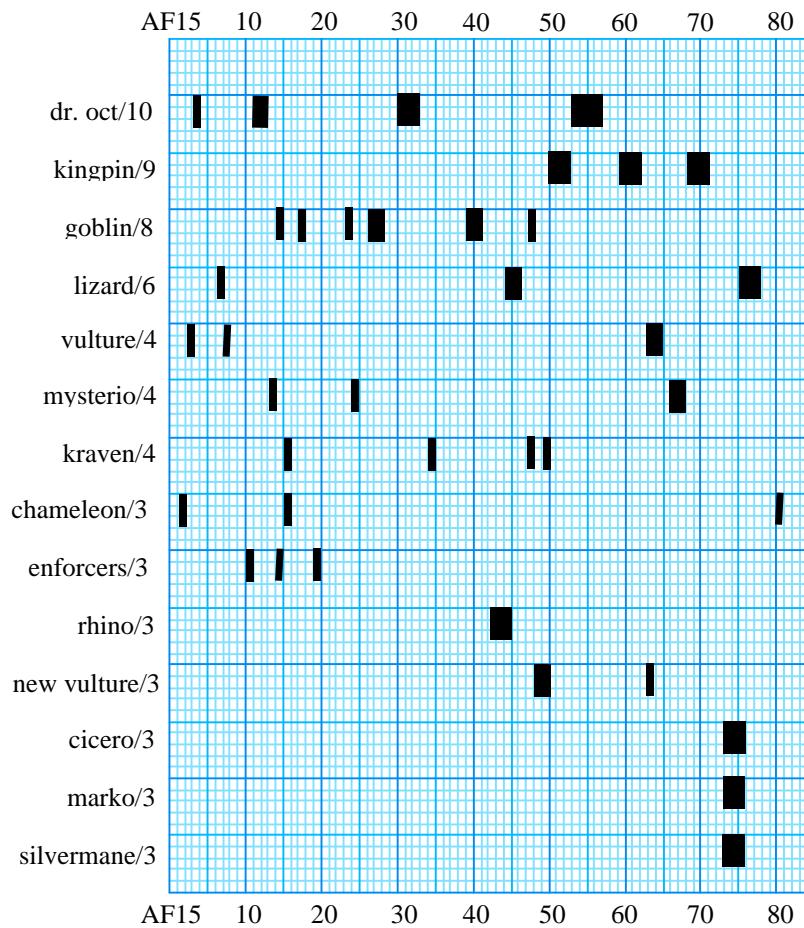


**Figure 1. Ranked Villain Appearances per Issue**

Figure 1 shows the most frequent villain appearances: Dr. Octopus is the leader with 10. However, Dr. Octopus started out as the Master Planner in issues #30 and #31. Also the Green Goblin should have a larger entry due to his appearance in *The Spectacular Spider-man* #2, "The Goblin Lives" (November 1968). This 58 page story fits quite neatly into the main ASM sequence between issues #67 and #68, although there is no reference to it in #68.

The graph shows that villains start appearing for longer as the sequence progresses. Also new villains appear for longer (e.g. the Kingpin, Silvermane, the Rhino). Complete story arcs are no longer than 3 issues, except the four-issue appearance of Dr. Octopus in the mid #50's, which is not repeated.

A villain-related story device which appears for a long duration later in the sequence is the tablet holding the formula for the fountain of youth. It appears for 8 issues (#68 to #75).

The Silvermane/Cicero/Marko story arc in #73-75 is interesting because the characters have separate motivations and aims, unlike a crime group such as the Enforcers, and have extended verbal exchanges aside from the fight scenes.

## 3. Supporting Characters Considered

We require that a supporting character has a name, appears more than once, and interacts in a meaningful way with Peter Parker and/or Spider-man in a non-combative way.

Figure 2 shows the total number of supporting characters per issue, divided into old (returning) characters in brown, and new-comers in yellow. The yellow columns show that 21 new characters appeared during Ditko's term, 7 afterwards.



Figure 2. Total new/old Supporting Characters per Issue
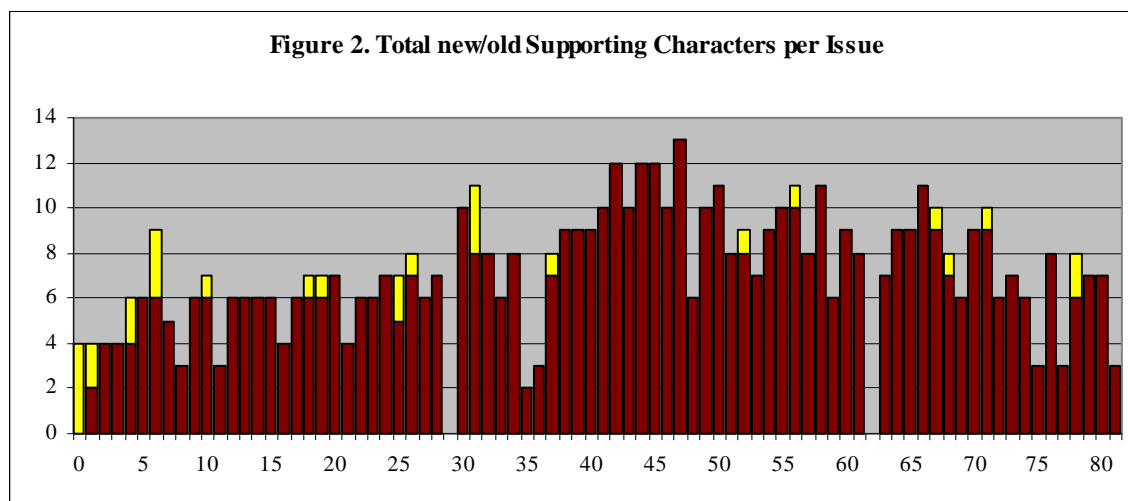
Note: #0 in this (and future) graphs is AF15. Issues #1, #2 and #8 contain two stories each, but we have combined the statistics from these to simplify the graphs.

There is a quiet period of no new supporting characters after #31, but this changes in the late #60's. Issue #52 sees the introduction of Joe Robertson, the Bugle's city editor. He is the first major black character in ASM; Foswell dies in the same issue, so the total number of useable supporting characters does not change. Issue #56 introduces Captain Stacy.

The flurry of new characters in #67, #68, #71, and #78 are all black. They include Robertson's family, Josh the campus 'radical', and Hobie Brown (the Prowler) and his girlfriend. This may indicate a shift to cater to a wider readership, and a desire to introduce some new themes.

Table 2 gives the mean number of supporting characters per issue who appeared during Ditko's time (AF15 to #38) and after (#39 to #81), and their standard deviations.

|  | During Ditko | After |
|---|---|---|
| Mean: | 6.1 | 8.3 |
| Stdev: | 2.0 | 2.7 |
| No: | 39 | 42 |

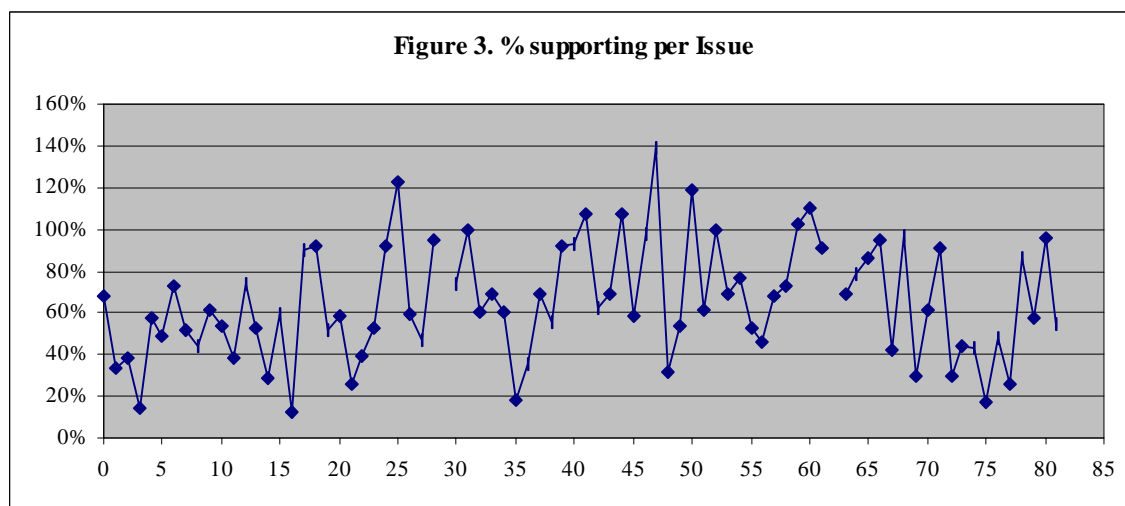**Table 2 : Mean/stdev no. of Supporting Characters during/after Ditko**

A statistical comparison of the two means shows that there is a difference between them at a 0.01 level of significance, and indicates that the number of supporting characters appearing per issue after Ditko's time is higher.

### 3.1. Do Supporting Characters Appear Often?

We represent the amount of space spent on supporting characters in a comic issue by the %supporting value per issue. It is calculated using:

$$\frac{\text{the total number of panels in an issue involving supporting characters}}{\text{the total number of panels in the issue}}$$

Note that if a panel contains 3 supporting characters (for example), then that panel is counted three times. This means that it is possible to obtain a %supporting value which is greater than 100.



Figure 3. %supporting per Issue

Figures 3 and 4 hint at a gradual rise in the number of supporting characters per issue, and the space allotted to them, peaking in the mid #40's, and then slowly falling afterwards. Issue #47 has many supporting characters present as Kraven the Hunter kidnaps Harry Osborn.

Table 3 shows the mean and standard deviation for the %supporting values during and after Ditko's time.

|  | During Ditko | After |
|---|---|---|
| Mean: | 57.2 | 72.2 |
| Stdev: | 24.3 | 28.3 |
| No: | 39 | 42 |

**Table 3. Mean/Stdev for %supporting during/after Ditko**

A statistical comparison of the two means shows that there is a difference between them at a 0.05 level of significance, and indicates that the %supporting values after Ditko's time are higher. In other words, the number of panels per issue given over to the supporting characters is higher later in the sequence.

## 3.2. Who are the Main Supporting Characters?

We have identified 28 supporting characters, but who are the main ones? We answer this by summing the number of panels per issue for each supporting character, and then dividing by the total number of issues. However, to highlight changes in the mix of characters after Ditko's departure, we separate the sequence into two parts. Furthermore, we rank the results and display only the top eight characters in the subsequences.

Table 4 gives the ranked supporting characters during Ditko's time, table 5 for after his departure.

| Rank | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Name | pp | jjj | betty | flash | am | liz | foswell | gwen |
| Avg. No. Panels | 32.1 | 10.7 | 8.5 | 7.3 | 5.3 | 4.2 | 1.8 | 1.6 |

**Table 4. Ranked Supporting Characters during Ditko**

| Rank | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Name | pp | jjj | gwen | cap stacy | harry | am | robbie | mj |
| Avg. No. Panels | 18.7 | 7.9 | 6.1 | 4.5 | 4.4 | 3.9 | 2.3 | 2.3 |

**Table 5. Ranked Supporting Characters after Ditko**

Table 6 is useful when examining the numbers in tables 4 and 5: it gives the mean number of panels in a comic during and after Ditko, and their standard deviations.

|  | During Ditko | After |
|---|---|---|
| Mean | 139.2 | 95.2 |
| Stdev | 19.2 | 13.8 |
| No: | 39 | 42 |

**Table 6. Mean/stdev no. of Panels per Issue during/after Ditko**

A statistical comparison of the two means shows that there is a difference between them at a 0.01 level of significance, and indicates that the number of panels per issue during Ditko's time is higher.

Table 6 shows that it is difficult to compare the average number of panels between tables 4 and 5 since the total number of panels per book decreases sharply between the two subsequences.

What should be compared across the tables is movement in the rankings. Betty Brant, Flash Thompson, Liz, and Foswell disappear in the second half of the ASM sequence. The newer characters (e.g. Gwen Stacy, Captain Stacy, Harry Osborn) are more popular. This indicates that older characters are used less often as the sequence progressed

### 3.3. How Important are the Supporting Characters?

We measure importance by calculating %appearances per issue, which is:

$$\frac{\text{the number of panels containing the given character in an issue}}{\text{the total number of panels in the issue}}$$

Figure 4 shows the %appearances values for the top eleven characters from tables 4 and 5.
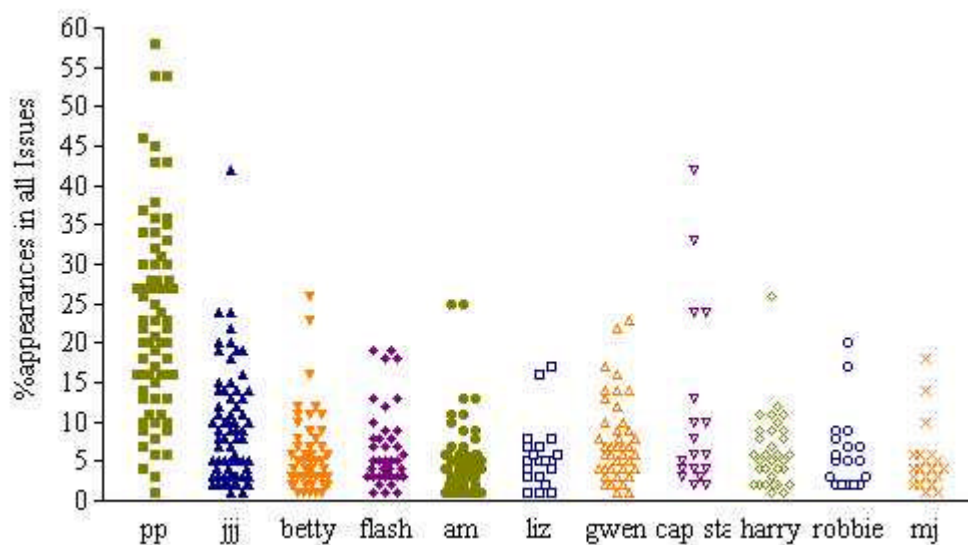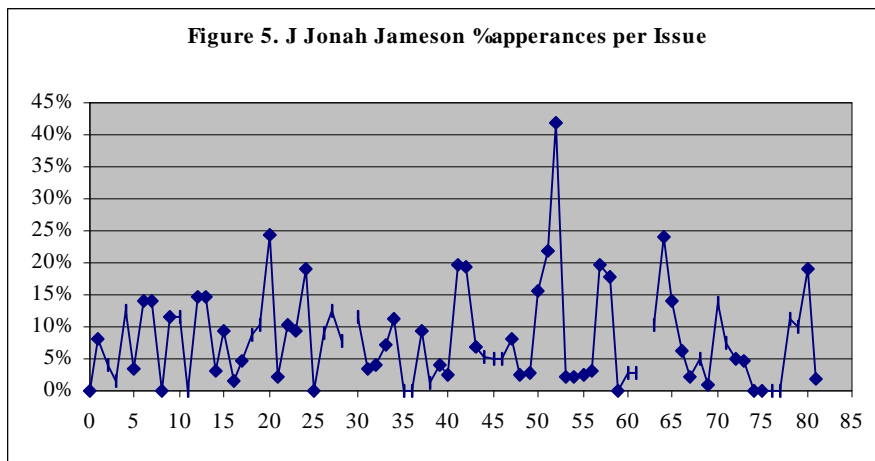


**Figure 4. Top 11 Supporting Character %appearances in all issues**

Figure 4 shows that even the main supporting characters (aside from Peter Parker) play a very small role in the comics. The medians of their %appearances cluster around 4-6%, which is between 4 and 6 panels in a comic containing 100 panels. This is only enough to maintain a character's visibility.

### 3.4. Supporting Characters in More Detail

Further insight into the supporting characters can be gained by looking at individual graphs of their %appearances per issue. Due to space limitations, we only consider J Jonah Jameson, Aunt May, and Gwen Stacy.

**Figure 5. J Jonah Jameson %apperances per Issue**



J Jonah Jameson is the most popular supporting character (after Peter Parker). An interesting pattern in Figure 5 is its periodicity: appearances seem to peak every 6 issues or so, especially after Ditko's departure. An examination of the outlier issues shows that JJJ is utilised in a variety of ways: sometimes as a proto-villian, sometimes as a hostage (#52, of the Kingpin), and as a worried father. However, there is little or no character development running through his appearances.

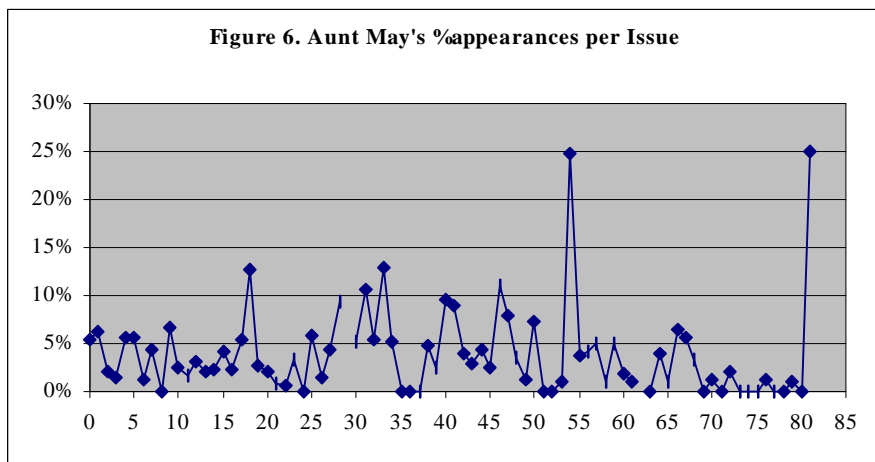**Figure 6. Aunt May's %appearances per Issue**



Figure 6 shows that the ASM writers ran out of ideas on how to use Aunt May. There is a long period after #54 when she hardly appears. The peak in #54 has her becoming Dr. Octopus' landlady. Issue #81 may signal a return, but we do not have the data to confirm this. Aunt May's most frequent role is to be worried and/or ill.
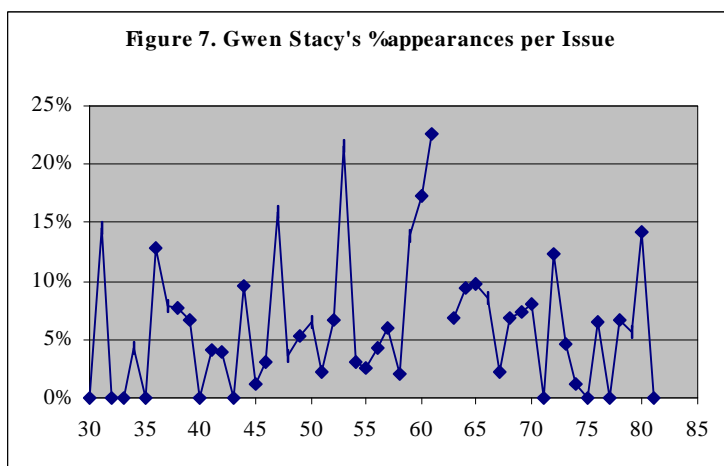
Figure 7. Gwen Stacy's %appearances per Issue

Figure 7 shows the ASM sequence from #30 to #81, since Gwen Stacy first appeared in #31. Her appearances display a weak periodicity, with high %appearances which tail off. Issue #47 sees her as the main onlooker while Kraven the Hunter kidnaps Harry Osborn. Issue #53 has her with Peter when Dr. Octopus steals the nullifier, and #59-61 sees her as a worried daughter while Captain Stacy is a brainwashed pawn of the Kingpin. None of these stories have her as the primary focus.

In summary, although ASM contains a large number of supporting characters, they are not developed over the long-term, only having periodic importance. Supporting characters appear in almost every issue, but usually in just a few panels.

Female characters display less variety in the kinds of appearances they make.

### 4. Is there a lot of Fighting?

We measure fighting using %fighting per issue, which is calculated as:

$$\frac{\text{number of fighting panels in an issue}}{\text{total number of panels in that issue}}$$

A 'fighting' panel is hard to define, since fights usually span many panels, and not every panel contains combat. For example, the hero or villain may be in retreat or hiding, or the focus can switch momentarily to onlookers.

Figure 8 shows a fairly regular pattern to the amount of fighting until after #60, when large fluctuations appear. #64 contains a long battle with the Vulture, Mysterio is the villain in #67, and #76-77 involves the Lizard.
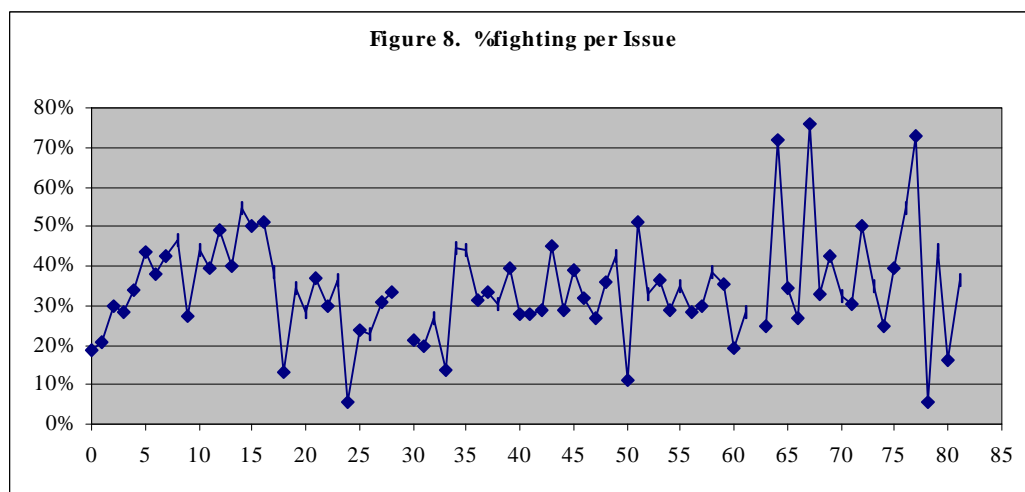
Figure 8.  %fighting per Issue

Table 7 gives the mean and standard deviations %fighting values during and after Ditko's term, and the values for the entire sequence.

|        | During Ditko | After | Entire Seq. |
|--------|--------------|-------|-------------|
| Mean   | 33.1         | 35.7  | 34.5        |
| Stdev: | 11.4         | 14.4  | 13.0        |
| No:    | 39           | 42    | 83          |

**Table 7. Mean/stdev %fighting during/after Ditko, and the Entire Sequence**

A statistical comparison of the first two means shows that there is *no* difference between them at a 0.05 level of significance. In other words, the amount of fighting does not change significantly over the length of the ASM sequence.

On average, fighting takes up about a third of an issue, which is surprisingly low. It would be interesting to analyse issues after #81 to determine if the sporadic increases in %fighting continue.

## 5. Combining %supporting and %fighting

The %supporting and %fighting values for an issue are complementary in some senses: as the number of panels spent on supporting characters increases, fighting decreases, and vice versa. This relationship can be exploited to highlight atypical issues in the sequence.

Figure 9 plots the ratio of %fighting/%supporting for each issue. A high value means that the amount of fighting is high *and* the space spent on supporting characters low.

**Figure 9. Ratio of %fighting/%supporting per issue**
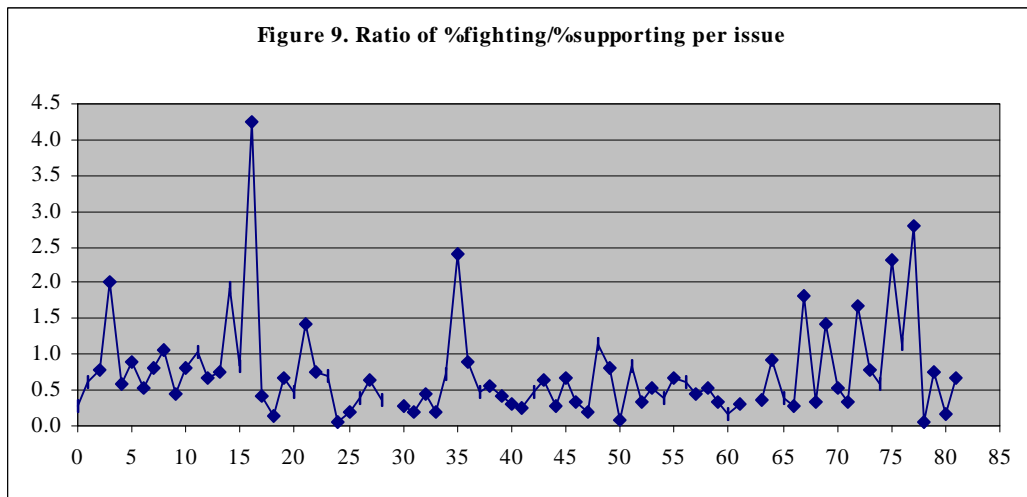


Issue numbers with a high ratio (above 1.5) are: 3, 14, 16, 35, 67, 72, 75, and 77.

#16 has Spider-man and Daredevil fighting the Ringmaster and the Circus of Crime at the visiting circus. Very few supporting characters appear, and then only in a few panels; instead time is spent on introducing Matt Murdock.

The rise in fighting and reduction in support characters later in the sequence is an interesting trend. It suggests a shift in the writing priorities for the comic.

The ratio can be reversed to become %supporting/%fighting which displays peaks when the space spent on support characters is high *and* the amount of fighting low. Figure 10 shows the graph of this ratio for the sequence.

**Figure 10. Ratio of %supporting/%fighting per Issue**
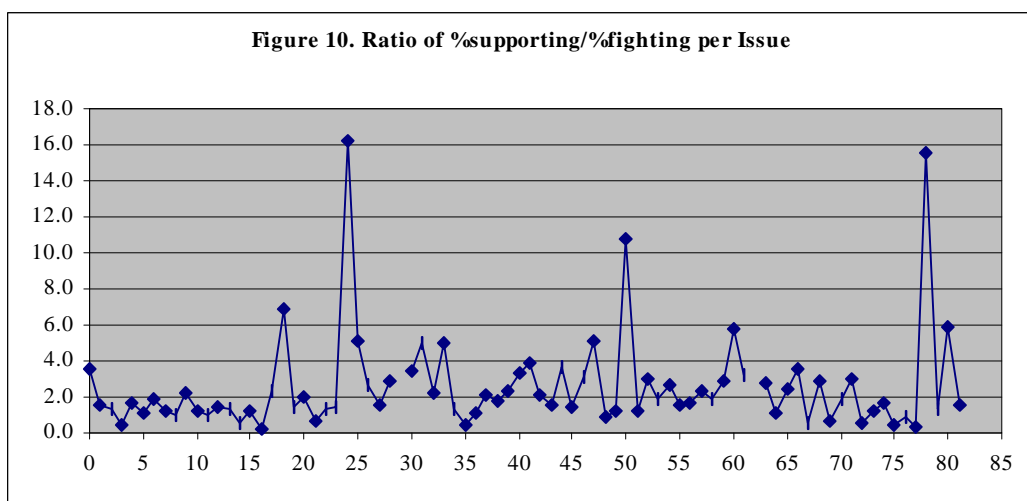


Issue numbers with a high ratio (>= 6.0) are: 18, 24, 50, 60, 78, and 80.

These include some of the more unusual ASM issues: #18 is the issue where Spider-man avoids fighting, #24 has Mysterio in the guise of Ludwig Rinehart trying to send Spider-man insane, #50 has Peter temporarily giving up on his super-hero role, and

much of the #78 is spent introducing Hobie Brown (the Prowler) and explaining his motivation for becoming a bad guy.


## 6. Discussion

Story arcs in ASM gradually increase in length, reaching a plateau of 3 issues, with one four-issue arc which is not repeated. The reuse of existing villains allows character development; the most notable example being the Green Goblin/Norman Osborn. Later in the ASM sequence, more space is given to villain motivation (e.g. The Prowler), to interactions between villains (e.g. Silvermane/Marko/Cicero), and to plot elements (e.g. the nullifier). These aspects are particularly noticeable from the mid #50's onwards.

The amount of fighting in ASM is surprisingly low throughout the sequence (averaging about 1/3 of an issue); ASM is not a violent comic. There are some signs that this is changing later in the sequence, with several issues with much more fighting.

The number of supporting characters, and the space given over to them per issue, is high throughout the sequence, but there is some evidence that this peaks in the mid #40's and then decreases. The number of new supporting characters drastically drops in the second half of the sequence, and many of the older characters appear less often or disappear (e.g. Flash, Betty, Aunt May, Foswell, Liz). This means that the mix of characters becomes rather static later. This is partially offset by the introduction of a range of black characters.

The large number of supporting characters tends to hide the fact that each character usually only appears briefly in each issue, which mitigates against any long-term development of their personalities. A study of the outlier issues, where supporting characters make a larger contribution, shows that they are often only onlookers to conventional hero/villain action, the exception being J Jonah Jameson. However, even his character develops very little.

This ASM sequence does not really deal with problems of the time: for example, the opportunity to consider Vietnam through Flash's character is not explored, although the possibility is there. Student activism is addressed in "Crisis on the Campus" (#68), but the problem is a 'safe' one of low-rent dorms for students, and is resolved very quickly and without serious conflict with authority figures. The black characters allow some low-level discussion of racial issues. The famous issues concerned with drugs occur in the late #90's, beyond the scope of our analyses.

The two ratios %fighting/%supporting and %supporting/%fighting are useful for highlighting comics with an unusual mix of fighting and supporting character appearances. For instance, the %fighting/%supporting ratio (Figure 9) clearly emphasizes the increase in fighting and decrease in supporting character involvement at the end of the sequence. This may indicate a change in the writing style for the comic. The %supporting/%fighting ratio (Figure 10) points out unusual issues, such as #18, #24, and #50, where supporting characters predominate and the amount of fighting is very low.

An obvious next step is to extend the analyses, at least to the end of Stan Lee's writing tenure at #100 (although he returned briefly after that). This would allow emerging patterns to be confirmed or denied.

The techniques developed here can be applied to long sequences in other comics, such as *The Fantastic Four* and *The Mighty Thor*, and might permit comparisons in writing styles between comics.

The Excel spreadsheet used for the majority of our analyses can be downloaded from `http://fivedots.coe.psu.ac.th/~ad/marvel/spidey.xls` (413K). We would appreciate it if people using or extending our data would ask our permission, and acknowledge our help in their work.

### References

[1] GraphPad. 2001. *GraphPad Prism*, Version 3.02 (trial). Available at `http://www.graphpad.com`

[2] Quesada, J. (editor-in-chief). 2001. *The Essential Spider-man*, Marvel Comics, Vol. 1, February, 4th printing.

[3] *Spider-man Comic Weekly*, February 1973- January 1975. No. 2-100. Magazine Management London, UK

[4] Spiegel, M.R. 1972. *Schaum's Theory and Problems of Statistics in SI Units*, McGraw Hill.

[5] Steranko, J. (editor). 1973. *Foom*, Vol. 1, No. 3, Marvel Comics Group, Autumn.