

Understanding Sound Symbolic Words in Indian Comic books

Submitted in Partial fulfilment of the requirements for the Degree of
Doctor of Philosophy

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2018



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মা-বাবা কে সমৰ্পিত

(Dedicated to Maa-Baba)





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Abstract

Keywords: Indian comic books, sound symbolic words, semantic analysis, Devanagari fonts, expressive typography

Comics is a form of static visual narrative that conveys stories through the modalities of image and text primarily. Scholars have fundamentally given importance to the image-text dichotomy appearing in comics. While the two modalities have garnered most scholarly attention, the third modality of sound has received minor significance in academic studies. Printed comics are silent medium of storytelling that requires deliberate designing of each visual element in order to provide the reader a richer multi-modal experience. Thus, it is imperative to understand and investigate the words that represent sound in comics (known as sound symbolic words or SSW) and discuss their creation for designers. Thus, the objectives of this study are: (a) To identify the syntactic attributes of SSW in Hindi comics (b) To identify the semantic categories of Hindi SSW (c) To understand the broader function played by SSW in the narrative of comics and (d) To create a design support for designers to create SSW. This study adapts Design Research Methodology (DRM) along with semiotic theories for the analytical tasks involved.

Chapter 1 initiates the study with the opening of different definitions of comics through various literature. It provides understanding of the medium in a better light that is being researched. It also helps to focus the study in printed comics and not in any other form of comics (like digital, motion, interactive etc.). Comic studies in general is discussed from different domains.

Chapter 2 critically discusses the literature and studies relevant to SSW. Deriving concepts and ideas from scientific studies like synesthesia and cognitive science, the literature also brings forward key concepts about sound symbolism and its utility.

It is found that from the perspective of design and comic arts, SSW are still considered as a visual element that is somewhat ignored and avoided. Any studies concerning its form and meaning in comic arts is in minority. This chapter identifies Sound Symbolic Words (SSW) as the third modality that requires a systematic investigation that leads to the better understanding and formulation of the creative process behind them.

This lead to formulate the research questions as:

RQ 1. What are the syntactic attribute of SSW in Hindi comics?

RQ 2. What are the semantic attributes of SSW in Hindi comics?

RQ 3. What type of Design Support can be created for Hindi SSW?

RQ 4. What is the role of SSW in the narrative of comics?

The formulation of the research questions guided to decide the methodology and the rest of the research design process. The premises of this study affixes SSW as a visual sign that conveys different meanings that are deciphered by the reader. In this context, visual semiotics is chosen as the best possible methodological framework to build the study. Design Research Methodology (DRM) is also adapted to structure the study as it is primarily aimed towards design researchers who is required to create design support from the analysis and understanding of the research problem. Thus, while DRM structures the study of the thesis, simultaneously visual semiotic theories support to conduct analysis and draw inferences from the analysis.

Chapter 3 primarily answers the RQ 1 and RQ2 by collecting the samples and analyzing it. This is also the Descriptive Study I phase proposed in the DRM that requires the detailed descriptive understanding of the research questions. The samples are collected across different comic book publisher in India. Among all the publishers (more than 20), 4 major publishers with Hindi comic books are selected and the representative samples are collected from those. This chapter provides the syntactic attributes that are found in the SSW. In a second part of this chapter,

semantic analysis of Hindi SSW is provided. It presents the meaningful groups appearing for the samples.

Chapter 4 follows the Prescriptive study phase of DRM. It Answers the RQ 3 by creating suggestive design guidelines for creating Hindi SSW. It demonstrates the process of creating SSW for words selected from each semantic category. A visual repository of Hindi SSW is also provided as a part of this chapter for the ready utility for designers.

Chapter 5 investigates the broader role played by SSW in the narrative of comics and thus answers RQ 4. For this purpose, the samples are selected from 10 popular graphic novels. As graphic novels are generally accepted as comics with more sensitive and mature context (and content) than Superhero comics, therefore their selection is done to check if the SSW made any difference to the narrative or not. It is then identified that a SSW functions as different markers in the narrative. It argues that SSW play important role apart from conveying sound in the narrative.

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1. Introduction

Visual storytelling has always remained a constant mode of human expression since the time of stone ages and cave art. A single story can be told and retold in varieties of visual formats providing varied experiences. The visual representation of stories are found in different medium like printed surfaces (e.g. picture story-books), motion (e.g. films) or interactive platforms (e.g. video games). With the existence of different platforms also arises the need to create and employ visual design elements that justify and enhance the story in that particular medium.

Comic book is one such medium of visual storytelling that has remained popular for its format and content since it came to existence about a century ago. In the context of visual elements of comics, it mainly relies on image and text to deliver the story. This is true in the case of printed comics, however when the format becomes digital, then the possibilities of other elements (like sound) becomes feasible. However, even after the advancement of comics from printed to digital interfaces, printed format is still largely produced and preferred over digital comics.

This study initiates with the brief understanding of the history of comics and how it is defined and perceived by scholars and practitioners. It is also discussed as a form of static visual narrative and its role in culture and education. The underlying theme of this chapter is to understand comics as a medium of visual storytelling and its significance in storytelling. The motivation of this research is discussed that leads to the understanding of the medium and finally provides the outline of this thesis.

1.1 Motivation for the research

Comics studies have developed with intellectual exchange between the practitioners and scholars. The exchange of thoughts and support is a necessity for the growth of the medium. This research is taken up with a similar motivating idea of contributing in the space between academicians and practitioners in comic studies. In doing so,

the motivation to contribute in the improvement of Indian comics is another thought that drives this study. The knowledge developed from this thesis will be helpful in some ways for designers. Finally, the understanding of the research process in Design and comics studies motivated to proceed with the theme of the thesis. Design research is a developing domain that requires more critical studies to develop a strong body of work. This thesis thus aims at contributing in the field of design studies and comics studies from the perspective of visual communication.

As there is constant mutation in the design and formats of comics, changes are also noticed in area of Comics Studies. Academic enquiry of comics started around 1940s and over the years Comics Studies has grown as an important research field. Scholars have analyzed and commented on comics from various perspectives. Being a practicing art, comic as a medium is mainly discussed in academia from humanities and social science, linguistics, cultural studies, visual culture and other related domains. Studies from a practitioner's perspective still falls short compared to the other domains' authority on discussing comics. While this is beneficial for comics at one hand because it brings it among the other academic domains and proves its worth, on the other hand lack of literature from practitioner's view distances between the theory and practice of comic arts.

1.2 Preparing the ground

Tracing the roots of comics is debatable in the history of comics. The aim here is not to debate about its history or origin. Rather it is accepted as a medium of storytelling that has a universal appeal irrespective of its origin. The present study mainly considers the current format of comic books for study, which is mostly an early 20th century invention. Over the many years, its format has become more sophisticated with the efficiency of production. Yet, the basic idea of using image and text in sequential manner remains similar to the origin days of comics.

Comics have remained a popular medium throughout America, Europe and Japan. While American comics is mostly popular for creating Superman and other

commercially successful superheroes, European comics has remained the birthplace of extraordinary stories (like Tintin and Asterix) and artwork (like Moebius). In Japan, the most aggressive development was witnessed in post-war period. Japanese comics, in a shorter time created a world recognition for their storytelling and art style (like Osamu Tezuka) (Wai-ming, 2002). American comics saw the evolution of *comix* that was just like any other art-movement that upsurge due to political contexts and suppressed freedom of creativity (Sabin, 1996). It mainly represents comics from the 1960s underground movement in America. Similar themed comics soon was being created in other parts of the world also. With the turn of the century, experimental formats of comics is explored from these three nations making them pioneers and leaders of comic arts.

History of comics in India is comparatively shorter. Comics entered as a foreign material in India with Phantom and Mandrake being the first translated comics in India. Post-independence India has seen the birth of many publishers till date (from 1960s onwards). The majority of publishers were influenced by Western material and followed them closely to create Indian superheroes. Mythology and history has remained popular themes of comics that are being retold by many publishers. Currently, the Indian comic book industry has more than 20 publishers of comics with major publication in English language.

Overall there is a change in the perception of comics. Since its early days, comics have constantly faced adverse criticism and rage of the '*literate*' society. In the 21st century, there are subtle paradigm shift on the perspective of comics as a medium. In the last few decades, with the perfection of printing technology and engaging ways of storytelling, comics are slowly being recognized as par with films and novels. The transformation of superheroes from print to live action screen indicates the significance of comics as a medium. Even though in most cases the original comics is enjoyed more by the readers as compared to the films made out of them, yet they are constantly transferred to screens. This surely indicates the potential of comics as a medium that is powerful for conveying stories.

1.3 A brief on Defining Comics

In the domain of Comics studies, defining comics has remained a major debate and a problematic area (Varnedoe, 1990) (Karp, 1991). Although, it seems that rarely any concrete definition of comics is agreed upon, the aim will be to discuss the prevailing definitions and notions about the literal and implied meanings of 'comics'. Oxford online dictionary defines comics as a singular noun; comic, which means a periodical containing comic strips, intended chiefly for children. As an adjective it could mean a cause of laughter. To a layman with negligible knowledge about comics, this definition might work well. However, when inspected critically, this definition would seem to cover just a fraction of the broader meaning. It is not mandatory for comics to be a periodical. It could be a single-shot story, with only a single issue publication. Further, not all the times it is intended chiefly for children. Since, comics could often be spotted with a 'strictly for adults' or 'Explicit content' warning printed on the cover page. Therefore, this leads towards seeking of a more concrete (if existing) implied definition of comics.

If randomly any of the commercially available comics (like Superman or Batman) is picked, unmistakably it will be noticed that it contains colorful images along with words enclosed in different shapes. Apart from the most popular comics, even the lesser known works like the *Tijuana Bibles* of the 1920s, words and images remain an essential element of comics. Although, these two components have their independent long history, however the juxtaposition of the two has remained a major subject of argument and discussions since the 20th century. Having said that, even the roots to juxtaposition of words and images could be traced to 15th century woodblock printing period, when 'broad-sheets' were widely printed for information. Over the time, this practice attained refinement and transformed into modern narrative art form which is also known as comics (Eisner, 1985). In the same context, Eisner also suggested that comics is a form of sequential art. Meaning, comics would contain images that would be arranged in a sequence in order to tell a story. The *practice* of sequential art was nothing sort of new. Sequential art has

existed since the time of Trajan column or Bayeux Tapestry. The *coining* of the term, sequential art for comics, however, was significant for the medium such that in the following years, comics is mostly discussed in terms of sequential art form.

Eisner's seminal work on comics was a huge influence for Scott McCloud's *Understanding comics*. It is a more in-depth approach towards the mechanism of comics. In this context, McCloud, attempts to define comics as:

Com.ics (kom'iks)n.plural in form, used with a singular verb. 1.
Juxtaposed pictorial and other images in deliberate sequence intended to convey information and/or produce an aesthetic response in the viewer (McCloud, 1994).

The notion of juxtaposition is evident in the definition, reminiscent of Eisner's concept of comics. Even though McCloud gave a definition of comics, his primary foundational idea was sequential art. The definition serves a more explicit purpose for clarifying the nature of comics and its two essential traits: Juxtaposition and Sequentiality. The definition is very much open-ended and may encompass a vast range of visual art forms as well as graphic design: films, infographics, instructional diagrams, sequential wood-block prints, single panel cartoons and so on. This definition does not suggest use of text or dialogues with the images. Therefore, it broadens the range of medium that could come under this definition. Also, if images without sequence still produce an aesthetic response, will that medium be called as comics? That is not clear from McCloud's statement. Still, the term *comics* is strictly used in terms of mass-produced flashy books and not for the paintings of great artists. It should be mentioned here that this section doesn't strive to legitimize comics as a form of visual art, rather it analyzes the various definitions of comics and its premise across different domains.

An influential study about the pre-history of comic strip, *The Early Comic Strip* by David Kunzle is another early approach to define the medium and its nature. Kunzle provides four conditions to identify a medium as comics. He states:

"I would propose a definition in which a 'comics strip' of any period, in any country, fulfils the following conditions: 1) There must be a sequence of separate images; 2) There must be preponderance of images over text; 3) The medium in which the strip appears and for which it

was originally intended must be reproductive, that is, in printed form, a mass medium; 4) The sequence must tell a story which is both moral and topical.”

As a study for seeking the proto-comics Kunzle has rigorously studied and collected examples from the period of 1450 to 1825. That’s a pretty broad timeline to cover. However, the timeline covered is also a reason for an ambiguity of the definition proposed, mainly the second, third and the fourth conditions. A comic can also exist with preponderance of words over images, if that still conveys a narrative and is sequential in nature. For his study, he has covered almost all aspects of visual-textual representations appearing in wood carvings, engravings, narrative paintings etc. None of these artforms are commercial in nature. Neither are they intended for digital production. Therefore, Kunzle’s definition might be true to some extent to the context-specific premise of his study, but it definitely does not hold true in the late 20th and 21st century. In the digital age, motion comics and digital comics are becoming exploratory forms of comics. It is obviously not for print and reproduction. He also insists on sequentiality of separate images as another essential identifier. Having said that, what will be single panel comics (like *The Family Circus*) and gag-cartoons will be known as? Thus, the claims are not full-proof to define comics. Moreover, Kunzle’s last statement of definition seems to lose validity when placed in the context of underground comix of the 1960s. This movement produced some of the most daring comics of all time, however they were particularly not meant for moral lessons rather they were quite opposite of that.

While historical context is used for seeking a definition of comics, few scholars have proposed an aesthetic enquiry for comics. In this context comics is considered as a form of visual art and is looked from a perspective of art-aesthetics to establish the nature of comics. However not radically new idea about comics, David Carrier claims that comics is a composite art ; when they are successful, they have verbal and visual elements seamlessly combined (Carrier, 2000). His claims are subtly different from Kunzle’s. On one hand Kunzle insisted that comics are hybrid in

nature, on the other hand David differs and focuses on its composite nature. Whether, just a hybrid of text with images is enough for comics is not clear.

As we are discussing about hybridity as a characteristic of comics, another definition by legendary cartoonist and critic R.C Harvey should be noted. He states:

“Comics are understood as narratives told by a sequence of picture, with the dialogue of the characters incorporated in the form of speech balloons. Comics are a hybrid form: words and pictures. And their dual nature can dupe the unwary into thinking about them in ways not entirely appropriate to the medium.”

Harvey points towards the notion among linguists and scholars, that they often compare comics based on literary models or like literary fiction: beginning, middle and end. However, a major part, the pictures receive little attention for analysis, as they form an important part of the narrative (Harvey, 1996). Some critics compare it with the language of film recognizing narrative as a common link between film and comics. He differs in this type of comparison. To analyze the effectiveness of comics, one should notice the extent to which the meaning of the words depends on pictures and vice-versa. This will lead toward better understanding of the inter-relationship of the elements towards meaning making of the comics.

In the 20th century, Art Spiegelman is certainly regarded as one of the, most influential cartoonists and an advocate of comics. A Pulitzer winner and editor of revolutionary *RAW* magazine, Spiegelman perceives comics as:

“Comics are a narrative artform, a form that combines two other forms of expression: words and pictures.”

This statement once again focuses on two primary aspects of comics as being an art-form: words and pictures. Two definite criteria come out of this: comics as an artform and comics having a hybrid form.

Another contemporary of Spiegelman, Alan Moore, author of *Watchmen*, oppose the idea of hybridity as a risky boundary. It might suggest collapsing comics with other hybrid forms especially films. He suggests that films are hybrid of spatial and temporal modes whereas comics are hybrid of two spatial forms: print and

image (Wegner, 2014). The physical existence of printed comics is as important as the image which is printed on that.

One of the most celebrated sci-fi and fantasy writer, Neil Gaiman, considers comics as a medium which tells story through static images (Gaiman, 2005). The static images move inside the reader's mind and creates movement. Thus, in this context comic is closer to prose than films.

While concepts of sequentiality of comics are agreed as a trait of comics, Aaron Meskin argues that the definitional project is not complete in itself (Meskin, 2012). The definitions carry a wide spectrum of understanding. Based on McCloud's statement, all the narrative paintings, Scroll paintings, picture books, narrative relief sculpture etc. may be called comics. However, that does not seem to be correct, especially considering the art forms that have their individual characteristics and cultural context. Meskin, therefore insists that instead of striving for definition of comics, ontological concerns about comics would be far more instrumental for understanding comics. Since comics are deeply embedded in culture and society, therefore concerns regarding existence of comics as a physical entity would locate them in the metaphysical category.

From all the review so far, it could be deduced that all the definitions and view about comics bear some common elements. The entire premise discussed previously is primarily concerned with comics. If we take back a step and analyze the bigger picture, it would be found that comics are a form of visual narrative or to be more precise static visual narrative and the fundamental function of a comics is to convey a message or a story.

Significant body of scholarly discussions have argued regarding images and their function in comics. It is only in the last decade that a paradigm-shift in comic studies started focusing on the visual language of comics. Arguments and experiments (from linguistic and cognitive science) mostly posit that comics communicate through visual language much like a novel communicates in English (for instance) (Cohn, 2013). The visual language is however not specific to comics

but other modes of sequential narratives may employ it too. Across the globe different cultures employ different visual languages like there is existence of different spoken languages (Cohn, 2007).

The graphic novels have additionally raised more debates on the definition of comics. Graphic novels arguably have a different visual style of presenting the story. Largely they use a monochromatic palette, with hard back covers and diverse range of themes and other formal differences. Even though graphic novel like Chris Ware's *Jimmy Corrigan* are full colored, the visual style of drawing the image and the storytelling is different from Superhero genre. Graphic novels are usually found with subtle and composed drawing style contrary to the flashy and over the top actions sequences of Superhero comics. More specifically, they differ from comic books in terms of form, content, publication format, and production & distribution (Beatens & Frey, 2015). With these aspects of difference, graphic novels are starkly differentiated in term of quality with comics and are considered as more mature and serious in nature.

The discussions so far have provided with different definitions and concepts of comics that broadens the idea about the medium. In the following section, comics is further discussed from different domain for a stronger understanding of comics' position in culture.

1.4 Comics: A form of Visual Narrative

The idea of form and content is implicit in the theory of Chatman and it also reveals a narrative's crucial components that are bind to convey the story in a coherent manner. While the structure of a narrative is provided by Chatman, in a similar context, Wolf proposes that narratives have three basic functions (Wolf, 2003).

These are:

- a) *Experiential function*: Narrative enables a conscious perception of time and thus contributes to creating and stabilizing a central epistemological category as a basis of human experience.

- b) *Philosophical function*: Narrative provides a possibility of accounting for the flux of experience in a meaningful way.
- c) *Communicative function*: Narrative is the basis for communicating, representing and storing memorable sequences of experience.

The experiential function helps the reader to connect with the time which is being represented in the narrative. It is the basic property of a narrative that helps to convey the time and relate it to his experience of past/present/future. The philosophical function creates a ground for understanding the narrative at a philosophical level. This is interrelated to the experiential function of human experience. The communicative function depends mainly on the reader's involvement in the narrative and making meaning out of it. Thus, it bridges the relation between the narrator and the narratee to store the narration in memory and create experience through it.

Visual narratives (VN) are primarily told through a visual medium (images in static or moving form). In its literal sense, Visual means something that is visible and Narrative means a discourse that tells the happening of an event or an act. The medium may be film, theatre, drama, interactive arts, video games, comics, storybooks and so on. Their primary aim is to tell stories or events that occur over a period of time. Like narratives, VN are also embedded in every culture with varied characteristics. Whether it's a narrative scroll painting of West Bengal or three panel comic strip in a newspaper; all are instances of VN.

The VN are found in seven modes (Dehejia, 1990): Monoscenic, Sequential, Continuous, Synoptic, Conflated and Narrative networks. These modes were mainly found in Indian narrative sculptures therefore they are primarily focused on two-dimensional space. When the narrative becomes dynamic (like in motion comics), whether these modes will still exist that is not clear. It is also found in her study that concept of time is mainly represented in the sequential and continuous modes and it is difficult to establish a chronology in the other modes. The sequential

and continuous modes are similar to the sequential form of comics, where lack of sequence proves to be difficult for meaning making.

Drawing from Dehejia's study VN are further distinguished in three categories: Static Visual Narratives (SVN), Dynamic Visual Narratives (DVN) and Interactive Visual Narratives (IVN). The main difference between these three types is their context of representation. SVN are represented through a static medium where the visuals are static in relation to the medium however the medium could move on itself (Pimenta, 2011). Story books, narrative sculptures, comic books and infographics are some of the examples. DVN mainly shows the viewer with the progression of the story therefore giving no control to the viewer over the narration popularly found in films and plays. However, IVN lets the viewer to interact with the narrative and enter the space of the narrative. Video games and interactive websites are some examples in this case.

Comic books are a form of visual narrative that has remained (un)famous for its content and its effects. It is also a form of sequential art that conveys a story through sequences of images. Sequential art is not a permanent medium and many varied genres fall under that like comic books, graphic novels, storyboards, even graffiti and sticker art (Gluibizzi, 2007). Comics are a product of the culture and it interacts with the culture through its stories. Comics have been an integral part of the book stores (mainly in America, Europe and Japan) for many decades and competes with the novels and literature of similar standards. The characters from the comic books are transferred to the live action screen and to different forms of merchandise. In totality, comics contributes a significant part to the pop-culture and provides a window to reflect upon the world around. However, since its birth, comics have always remained a form of subversive art. Its status has been considered as subaltern as compared to the 'high-art'. Comics and its creators has been a subject of critical adverse comments and unacknowledgement throughout the history. It is not a surprising fact that both painting and comics employ common tools for expression. The visual styles of fine arts are sometimes evident in comics and vice-

versa. Like there exist comics in expressionistic styles, so does exist paintings with pop imagery from comics. It could be said that there is an overlap between comics and paintings, however they are poles apart in terms of public perception.

Visual storytelling in pictorial form has existed in human culture since thousands of years ago. Every culture has its individual form of visual storytelling. Narrative cave paintings, pictorial art of Egypt, Scrolls paintings of West Bengal, etchings of William Hogarth, every pictorial form of art has their specific traditions and history. However, visual narrative is the common thread which bounds these diverse artforms and creates a single plane for critical analysis. In this context, Visual Narratives is defined as (Pimenta, 2011):

“Visual Narrative can be defined as a visual that essentially and explicitly narrates a story; where –*Visual* signifies – something that can be seen using the human eye. *Story* signifies – a series of events linked by causality, temporality or sequence or the order of occurrence. *Narrative* signifies – the act of telling a story or the story itself or the order of presentation.”

The definition fairly clarifies different terms that support visual narratives. Although, it implies to a range of diverse art forms and not specifically to comics, however visual narratives could be perceived as a ground for analyzing comics. Contributing towards the narrativity of comics, Henry J. Pratt discusses and enquires some valuable dimensions of comics. Instead of word-image or image-text relationship he mainly argues in terms of literary dimension and pictorial dimension. These two dimensions lead to the construction of narrative and finally help the reader to comprehend the whole story (Pratt, 2009). Unlike other scholars (Kunzle et al.), Pratt does not insist on deciphering a definition of comics. Rather he looks at comics as a purely visual medium capable of delivering interesting narratives. In this context he compares dimensions of comics with films.

Comics as a visual medium is a form of discourse that contains a story. On the difference between story and discourse, Chatman explains that the story is the aesthetic object that comes into life by the articulation of the discourse (Chatman, 1975). In the context of discourse, he says:

“...Discourse is the class of all expressions of ‘story’ in whatever medium possible to it, not only the literary, whose medium is natural language, but also ballet (through the ‘language of dance’), ‘program’ music, comics strips, mime and so on.”

He adds further,

“...story is a continuum, a construct that has a flowing coherence which is evoked at every point by the set of discrete statements presented to the audience.”

Thus, all the different formats of comics (from graphic novels to comic strips to zines and so on) are the part of discourse of the narrative of comics. For a clearer view let's take the example of *Ramayana*, the epic Hindu mythology story. It has been told and retold in numerous formats for a long time. The formats range from oral storytelling, written novels, books, comics, graphic novels, animation, t.v series and movies. The story has remained same across all the formats (with few deviations here and there) however the form of discourse has changed depending on the medium chosen to tell the story. This also suggests that even in comics, the same story can be told in different formats thus effecting the discourse of the narrative.

In the discourse of comics, a major contributive element proposed by McCloud is the ‘gutter’ or the space between the panels where closure takes place. It is the cognitive process that happens between sequential panels (in the gutter) and makes the reader comprehend the semantic meaning of the sequences of panels (McCloud, 1994). It is not a visible entity like words or images. Still, it is the most significant dimension that decides the seamless flow of narrative in comics. Closure in comics is always involved during panel transitions. In this context, McCloud proposes six categories of panel-to-panel transitions majorly found in comics:

- a) Moment-to-Moment— This type of panel transition requires little closure as the sequential panels shows same moment in a type of slow motion without much change.
- b) Action-to-Action— This type of panel transition shows a single subject with different object in panels. This requires more cognitive

understanding than the previous transition to understand that the objects are part of the same action.

- c) Subject-to-Subject— This type of transition shows panels with different actions but still within a larger scene. This requires more cognitive understanding than the previous transition.
- d) Scene-to-Scene— This type of transition shows panels with different time and spaces and requires deductive techniques to understand the sequences.
- e) Aspect-to-Aspect— This type of transition shows panels with different aspects of idea, moods, place and other disconnected but logical sequences.
- f) Non-sequitur— This type of transition is totally abstract sequencing of panels where there is no logical relation between the panels and readers are completely left wandering to deduct meaning out of that.

His study shows that majority of Western comic books employ action-to-action panel transitions followed by the third and fourth category. Contrary to this, Japanese comic or *manga* shows a significant number of panel transitions in aspect-to-aspect category. One reason he predicts might be the long format of *manga* that allows artist to show numerous panels with slow progression in aspects whereas Western comics have a strict format of pages, therefore restricting the artist to focus on rapid action transitions. However, it is not clear from his study that apart from length of the comic book what other reasons might be in play. In the context of temporal shifts these categories might prove helpful to create a base for experiments in time transitions through panels.

The narrative in comics is primarily contained in panels and panels come in various formats. Their size and style mostly depends on the medium in which they are appearing. Figure 1.1 shows some of the popular formats panels are found in comics. The choice of panels largely depends on the format of the comics (Lefevre, 2000). Daily comic strips will be having limited number of panels as compared to

full length European albums. Horizontal panels are mostly abundant in manga which allows for a more cinematic like frame to depict emotions. Moreover, if the comic comes in a pocket book format then again the number of panels per page is reduced. The panel formats are also related directly to the discourse of the narrative as the change on shape and size of panels allows the artists to show or eliminate details from the image and that effects the reader's involvement in understanding the panels.

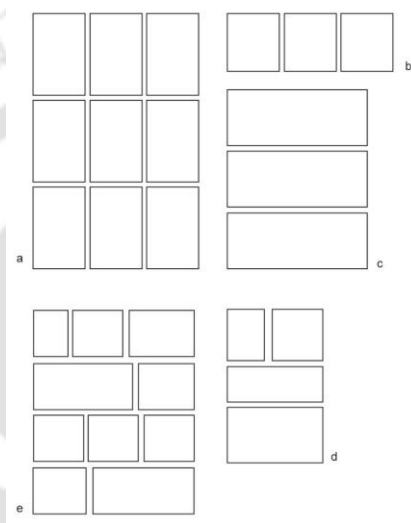


Figure 1.1 a) Comic strip, Sunday page b) Contemporary daily strip c) Manga d) Pocket comics e) European album (Lefevre, 2000)

A shift in focus is gradually happening in the 21st century with the narrative in comics as enquired in the form of visual language of comics; a concept which is less discussed in the history of comics. Even though legendary artists like Osamu Tezuka and Jack Kirby considered making comics as writing in a language of images, however rarely a scientific enquiry is done towards analysis of the visual language of comics. In this context Neil Cohn posits an interesting idea about comics:

“Comics are not a language...they are a medium that uses visual language much like a novel uses English language (Cohn, 2013).”

Cohn employs comics as a platform for linguistic and cognitive enquiries and argues that comics is written in ‘visual language’. According to him, the different terminologies like ‘comics’, ‘graphic novels’, ‘*bande-dessinee*’, etc. are of less importance than the two essential practices: writing and drawing. He argues that in

comics sometimes, visual might dominate the text to an extent that a comic can be without words. In that case we get something known as wordless comics. The complete absence of visuals/images is however impossible in comics (Cohn, 2013). Thus, visuals become a primary category for studying comics in his studies that puts less emphasis on dialogues and sound effects.

The concept of writing and drawing is analogous to the concept of image and words, on which several author/artists have already proposed their views. In this direction Cohn points three modalities for communication: 1) Sound; 2) Bodily gesture; 3) Graphic representation. When grammar/syntax is added to these three modalities they become spoken language, sign language and visual language respectively.

The visual language differs across cultures influence from the cultural context. On one hand the visual language of Marvel and DC exhibits over the top drawings and coloring, on the other hand Japanese Manga displays a visual language that is more elegant and found in black and white (Schodt, 1983). The visual language is deeply influenced by culture and affects the discourse also.

While the idea of squeezing and stretching time through the number of panels per page is not unknown and can be extensively found in comics across the globe, the other element's (in this case, SSW) role in the representation of time is rarely discussed upon. In the narrative of comics, time can be understood through three aspects: by the action happening, by reading the dialogues of the characters and by reading the SSW with relation to the action represented. This is exactly why, to understand the time represented in the image it is also essential to understand the events represented in the image (Gombrich, 1964). Analyzing the SSW in isolation does not make sense of the time in the narrative but only gives clues about the single action inside the respective panel and nothing else. It is only through making connections with preceding and succeeding panels, SSW can create sense of time. The three aspects of making sense of time are broadly considered by Chatman under story-time and discourse-time (Chatman, 1975). While the story-time is the

diegetic time experienced by the characters of the story, discourse-time is the time taken by the reader to make sense of the story. These two times are very different from each other as story time can show years passing by while the reader takes only few minutes to understand the story in the discourse time.

1.5 Comics in Culture

The state of comics since the early 20th century has remained as a flux. Due to their mass-availability, comics at times are employed as a weapon against various levels of societal classes. One of the first regularly published newspaper comics strips, *The Yellow Kid*, 1895, is one such example that stood as a weapon of satire on the class-difference in American society. Although its representation is particularly humorous, however there are deeper and darker meanings against the prevailing condition of that era (McAllister & Sewell, 2001). The introduction of Superheroes' around 1930s similarly proved to be a revolutionary step for opening up further commentaries on society and politics represented in comics. As soon as superheroes were introduced, scholars (Costello & Worcester, 2014) interpreted them in various perspectives. Superman's role in romanticizing commercialism; sexual violence in Japanese manga comics; Wonder Woman as Americanized immigrant; these are few of the issues that *Comics & Ideology* addresses. Focusing on the intersection of social power and comic art, it is significant for studying how narratives in comic books and comic strips may portray social groups and social issues. As a scholarly examination of a form known as 'the funnies' or 'funny books', arguments are also made that the themes and characterizations in comic art are often quite serious contrary to Frederik Wertham's negative assumptions.

Since 1986, the popular graphic novel, *Maus* by Art Spiegelman has hugely influenced the position of comics as a cultural medium that comments on the socio-political context of society. The representation of different anamorphic characters in *Maus* is a simple yet strongly effective way of producing the message and commentaries on a dark subject like holocaust. Comics thus penetrates easily in the society while leaving the message of the writer in a discreet manner.

Other diverse range of essays on comics in culture discusses theoretical perspectives such as cultural studies, political economy, feminist criticism, queer studies, and mythic analysis, all focusing on the relationship of comics to issues of social division.

It is concluded so far that comics are a form of discourse that tells a story and they are cultural objects impacting societies through their stories. Proceeding further, comics in education is discussed to situate it as an informative and educative material suitable for knowledge development.

1.6 Comics in Education

Education and Educational psychology are some of the most widely researched academic fields. Role of education in the society is undoubtedly important and critical in society. With technology and communication system, changing at a rapid pace, it becomes more challenging to develop new tools and techniques for education. In this context, comics have remained a subject for discussion since early 20th century. Comics as an educational tool may be employed to a wide range of subjects and age groups. For children, comics provide a chance to escape reality. Children can forget their academic or personal worries and get a momentary relief in the world of comics. This reason applies to the adults also. Especially in Japan, where people get very little time for themselves, and where they spend significant amount of time waiting for buses and trains, comics comes as a handy tool for passing the time (Schodt, 1983). This is also one of the reasons towards the gigantic popularity of *manga* in Japan.

In the school education system, comics act as a modern folklore. Filled with colorful images and humorous illustration, they quickly grab attention of children. This provides an opportunity to utilize comics as a bridging agent between classical or historical subjects (that are too heavily text dominated) and their modern cultural placement. As comics stand in a dichotomy of words and images, it lets the children visualize and identify with characters along with learning the facts (Strang, 1943). Similar kind of beliefs is reflected by Cleaver when she argues that comics in

classroom are beneficial for learning as it excites the creativity of the child. As the child has to read and grasp the images, this practice helps in developing visual-literary skills (Cleaver, 2008). She goes one step further and argues that creating comics opens up multi-modal skills of writing, editing and drawing. This would keep the child far more engaged and excited in the classroom.

In the context of multi-modality of comics as claimed by Cleaver, reflecting ideas are also noted in some other studies. The aspect of textual information weaved with rich visuals and simultaneously decoding the semantic structures the images creates a multimodal literacy (Jacobs, 2007). The multimodal approach to education is a requirement in today's competitive setting of education as children are flooded with images, text, signs, moving image, interfaces in daily basis.

For high school students, *graphic novels* are proposed as an additional tool for teaching. However careful selection of the graphic novels should be done according to age-group. With proper selection, graphic novels could become an educative tool that is less burdened by text but high on visual literacy skills (Bucher & Manning, 2004). Consider the case of *Maus* that is taught in many comic courses across Europe and U.S. and forms a constant part of the courses. While it cannot totally claim to replace text books to tell the story, what it does is provide the students with a piece of history in a different and exciting format where they collide with the author, his history, experiences, and even photographs for proving the authenticity of the history. Thus, comics have a strong possibility of becoming educational material provided the content and the discourse are deliberately designed for educational setting.

1.7 Comics in India

Until now, the literature and discussions largely comprised of academic works from Europe, U.S. and Japan. In Indian context, comics have a shorter history as compared to other cultures. Even during the inception in 1960s, Indian comics like *Indrajaal* and *Amar Chitra Katha (ACK)* were closely modelled on the Western

formats of comics. ACK is the only attempt to educate children through comic books.

Comics and its place in Indian society since the post-colonial era is a direction in which only handful of scholars have researched till now. In this direction, Karline McLain has done a significant amount of study in analyzing the role of ACK and the formation of Indian identity. She has extensively analyzed ACK from cultural and religious perspective. She gives an overview of the early development of comics in India starting from *Chandamama* in 1947, *Indrajaal* in 1964 and finally *ACK* in 1969. Her main focus however remains on ACK since it is one of the first publishers which started to employ epics like *Mahabharata* and *Ramayana* and transferred them in the form of comics.

In those early years, ACK became a major source of educational material with distribution of subjects like mythology, history and religion to school children. Its influence could be noticed today also when the adult readers could recall how they have learned about Hindu religion and Indian culture through ACK. Among the goodwill of ACK, there exist debates on the system of representing Hinduism on the expense of other minority religions, especially Muslims (McLain, 2009). ACK's biased projection of Hinduism and the promotion of national integrity while avoiding the minorities became a much debatable subject. That is why, to some Indians (mainly NRI's living in U.S.) it doesn't come as a genuine or reliable material for understanding Indian culture and religion. It is noted that ACK does not support Indianness, rather it stresses on Hinduism. Among other controversial debates, it is found that it is mainly targeted towards upper-caste Hindu religion. And it presented a stereotypical image of women in its issues. The women of ACK were categorized as: goddess, demon, warrior and victim, however the victimization of women was most predominant. This led to the creation of series on historical martial female warriors like *Jhansi ki Rani* and *Rani Durgavati*. Still then, the role of women in ACK was limited and stereotypical.

With the advent of the television, internet and new media, comics in India suffered drastically in the 90s. ACK survived and came up with its children's magazine 'Tinkle'. While ACK was feeding on epics, mythology and religion, Raj Comics, founded in 1984 brought a whole panorama of Indian superheroes similar to DC and Marvel. It is one of the best-selling publishers till date. Part of the reason is because it gave the Indian readers their own superhero characters that dwelled in familiar cities and spoke the local language, mainly Hindi and other Indian languages (Dey, 2016).

Few other publishers like Dreamland, Vivalok comics and Vimanika have sprung in the recent years. However, Vimanika's source of inspiration remains the same subject: mythology. Vimanika's Gods and demons are muscular and furious than ACK's sublime and calm figures. Vivalok comics stand apart in terms of subject representation focusing on dalits, santhal and local geographies. It spreads a message of harmonious society with all religions and castes living in them. Other popular and international Indian publisher is Liquid comics that have collaborated with international projects giving a more futuristic visual aesthetic to the epics like Ramayana.

The Indian comics industry is growing however the visual style of comics still requires fine tuning keeping with the world standards of publishing. There is no doubt about the importance of story to make a good comics. But good story is not enough to create world class comics. It requires a strong visual style that presents a well-designed book, with well-designed typography and lettering. Also, it should be printed in the highest quality possible. Indian comic book industry is built not only on the artist but the publishers and readers equally. While Indian reader is ready to spend on foreign comic books then why there is a hesitation before spending for Indian comic books? Is the story not able to touch the readers, is the feel of the comic book is missing somewhere, is the drawing evokes poor quality, is the printing doing justice to the art works and so many other question rises while buying Indian comic books.

Overall there is a surge in the number of publishers in India and it is growing each year with the expansion of Comic cons. However, Comics studies still remain in its nascent stages that requires significant amount of work in Indian context in order to create a scholarly mark in comics research. This study thus stands at the very foundational ground of comic studies in India and aims to bring forward among Indian designers the need of comics research and scholarly discussions.

At this juncture, after critical understanding of comics as a medium and its position in culture, a set of working definitions are then fixed and throughout this study, these definitions will act as a reference point for understanding and discussion in the coming chapters.

1.8 Defining the Premise

The following definitions are formulated inferencing from literature and in view of the domain of study.

Comics— A printed form of book that tells a story with images and text encapsulated in small panels (in rectangular shapes) that are composed in a sequence that is read from left to right and top to bottom (except Japanese and other specific cultures). The text is also divided as dialogue text, narration text and sound symbolic words.

Panels—The small boxes inside a page of a comic book that contains the images, text and sound. The panels can take up any shapes and sizes (even the page acts as meta-panel in that case).

Sound Symbolism— The phenomenon of symbolic representation of sound either through text or image.

Sound Symbolic Words or SSW— The words that are used to signify sounds that are audible as well as inaudible.

Phonomimes— The words that are used to signify the sounds that are audible such as an alarm clock (*Kirrrrr*) or telephone ring (*Tring Tring*). Onomatopoeias are also considered in the same category.

Phenomimes— The words that are used to signify the sounds that are felt by senses other than the aural. For instance, when a dog sniffs (*Sniff Sniff*), or licking an ice-cream (*Slurp*), or when someone grabs strongly/softly. This category is evidently used in Japanese literature and comics.

Psychomimes— The words that are used to signify the sounds that are felt inside the body. For instance, words representing anger, disappointment, blush, love etc. This category is also extensively found in Japanese literature and comics.

Sound effects— Similar to onomatopoeias or phonomimes and mostly used by comic book designers narrowly to describe the SSW.

Syntactic attributes— The structural components of SSW that when composed together form the SSW to be used inside panels. They are small units that cannot be divided further or else they lose meaning.

Semantic attributes— The meaningful groups that appear after the syntactic attributes are composed for the SSW. They convey the meaning from the word when placed in certain contexts.

Visual Style— The specific artistic treatment of the subject in comics such that it appears cartoony, realistic, mature, childish, funny and so on. For instance, *Watchmen* has a realistic visual style and *Tintin* has a cartoony visual style.

Genre— A kind of expressive category in comics that helps to distinguish between different subject matter in comics. Genre in comics can range anything between Superhero, humor, horror, science fiction, adventure, thriller and so on. Genre directly effects the choice of visual style of comics.

Indian comics— Original comics that are written, drawn and published in India in any Indian languages. Translated Western comics in Indian languages are not considered as authentic Indian comics for this research.

Henceforth these definitions will act as the premise on which the coming chapters will employ these terminologies.

With the setting of the definitions and basic ground for understanding of comics, the outline of the thesis is presented in the next section highlighting the structure of the thesis.

1.9 Outline of the thesis

Chapter 1 is an introductory chapter that prepares the fertile grounds on which the seeds for later stages are sown. The main aim of this chapter is to understand the domain of Comics Studies with an implicit comparison of status between world comics and Indian comics. This chapter provides the necessary familiarity with the domain of this research and builds a foundation for locating the research problems.

Chapter 2 focuses on the critical literature and theories posited by scholars on sound symbolism. Different approaches and methods of analysis is investigated in order to device the rationale for this thesis. From the literature review, the lacunae are identified and the research problem is formulated. Proceeding on the research questions, the methodological framework is presented that is used through the thesis to analyze and deduce the conclusions.

Chapter 3 initiates the understanding of Sound Symbolic Words with syntactic and semantic analysis. The whole understanding of SSW is divided in two sections. Section 3.4 consists the syntactic analysis of SSW. It answers the first research question. This section investigates the structural parts of the SSW. Section 3.5 consists the semantic analysis of SSW. It identifies the meaningful categories formed from the SSW and answers the second research question.

Chapter 4 proposes a suggestive design support for designers to help them create meaningful SSW. A comprehensive design guideline is provided with a visual repository for Hindi SSW that could be employed directly into the artwork. This chapter finally answerers the third research question.

Chapter 5 investigates the function of SSW in a broader perspective of the narrative and further extends the understanding of SSW. It argues that the SSW is a part of the discourse and effects the story elements of the narrative. It identifies

the different functions of SSW in the narrative. It answers the fourth research question.

Chapter 6 revisits all the phases of research and highlights the important lacunas and contribution of this research. It concludes with suggesting some limitations and future prospects identified from this research.

With the understanding of the domain of Comics studies and comics as a medium, the study now proceeds towards the critical literature reviews that will lead to formulate the research questions and progress henceforth.





2. Sound Symbolism in Comics: A Critical Literature Review

The world of images is far more critical than the world of words. A single image can mean hundreds of different meanings whereas a single word will have more or less constant or similar meaning across cultures. The strength of words is on carrying precise meanings while an image carries multiple meanings. Both can be utilized as per the imagination of the comic artist.

In order to create sense of the visual signs it is imperative to foster visual literacy. Thus, Visual literacy is essential in today's world to make a person's intellect multi-dimensional (Feldman, 1976). As it becomes more important to understand and read visual images, it becomes important for the visual linguist also to understand the signs being used in the images.

Comics employs several signs that is part of its visual language and conveys the narrative to the reader in a coherent manner. Comics studies as an academic domain is rich with knowledge from several fields. Comics as an object of investigation has been studied in different domains like humanities and social sciences, linguistics, education, cognitive science, narratology, visual culture and semiotics. Enquiry of comics as purely a designed object that reflects on its formal properties is comparatively rarer. This is a reason that most of the Comics studies mention these two names unmistakably even if it is only for a single quote. While Eisner and McCloud are both practitioners of the craft who also reflected on the theoretical aspects of comics, most of the scholar have mostly discussed comics as a non-practitioner and that makes a big difference on the practice based knowledge of comic arts.

2.1 Sound Symbolism studies

Sound symbolism is found in various languages and cultures throughout the globe. Sound symbolic words (SSW) are abundantly used in Japanese culture. The use of mimetic words in Japanese language is much higher than any other languages. It is evident by the extensive dictionaries that consists of vast range of sound symbolic words and their meanings (Takehi, Tamori, Schourup, & Emerson, 1996). According to the studies, the mimetic words help to create a vivid image of the description and provides a richer experience to the listener.

In Japanese language, the expressive words are classified in two categories: onomatopoeia and mimetic words. Onomatopoeias contain *Giseigo* (words for the sounds of living things including animals) and *Giongo* (words for real sounds like falling rain or stream). While mimetic words contain *Gitaigo* (words for non-auditory senses) (Inose, 2008). Onomatopoeic words are often direct representation of the sound that is produced. While onomatopoeias are one aspect of sound symbolism that is seen to bear strong resemblance within the word and sound, there are other aspects where the words represent expressions that are inaudible. Similar categories are also found for sound symbolism known as phonomimes (onomatopoeias), phenomimes (words representing inauditory senses) and psychomimes (words representing emotional states) (Akita, 2009). The SSW represents a variety of emotions and sounds (Schodt, 1983) that is well understood by the local readers.

The discussion of sound symbolism is often initiated by Saussure's classic theory that posits that the relation between the word and its meaning is arbitrary (Saussure, 1916). He clearly classifies onomatopoeias and interjections separately from text and did suggest a relation between the word and its meaning in that context. Since his arguments and discussion on this proposition, many scholarly enquiries either support his proposition or argue against it. Synesthesia studies particularly enquire in the latter part. Even though the relation between sound symbolic words and its meaning is established, the reasoning for the cognitive connection between the word

and its meaning in sound symbolism is unclear (Bankieris & Simner, 2015). However, there is a relation that is indeed confirmed. It is also found through experimental research that speakers (kids and adults) of different languages (English and Japanese) were able to identify and match sound symbolic words with actions. The results are suggesting strongly that the linguistic relation might not be arbitrary at all (Imai, Kita, Nagumo, & Okada, 2008).

Studies of sound symbolic words have been conducted in abundance by linguists and it is often proposed that there lies a difference between interjections and onomatopoeias (Feist, 2013). The primary differences between the two is, interjections can be used to replace words in a sentence or even a full sentence. Interjections are used in language in place of words and can mean a full sentence. For instance, in a sentence like "*this is so beautiful!*" using "*wow*" in place of the whole sentence also evokes similar meaning. Using onomatopoeias like interjections is not possible. They have to be composed with other words to drive their meaning to the reader.

The word and meaning in sound symbolism has remained a popular interest in Cognitive studies too. One of the popular studies in synesthesia by Ramachandran argues and demonstrates that there is indeed a relation between word and shape. There results show that adults relate nonsense word like '*kiki*' with a spiky shape and '*bouba*' with a rounded shape (Ramachandran & Hubbard, 2001). Other studies with similar conclusions show that adults relate rounded words with animals (irrespective of their shapes) and jagged words to robots (Flumini, Ranzini, & Borghi, 2014). The animals being more of rounded and curvy shape and robots had more angles and corners in them making them appear angular and sharp.

Cognitive studies with nonsense words like '*mot*' - '*riff*' and '*dom*' - '*shick*' were conducted to investigate the label-object association among participants and it is found that the reaction time is lower in matching image and labels with rounded vowel words and rounded object as compared to unmatched pairs (Kovic, Plunkett, & Westermann, 2010). This suggests that the arbitrary relation between signifier

and signified proposed by Saussure might not be arbitrary totally but has biased-mapping concepts in brain that lets the viewer attach rounded vowels with rounded visuals and vice-versa.

Investigations similar to synesthesia studies posits that small sounding words (like *frizz*) and large sounding words (like *bloub*) do impact a person's perception about the source of the word (Preziosi & Coane, 2017). The manner in which the words are uttered provides strong cues to the listener about the size and shape of the source. It is found that while '*frizz*' might be signifying a sharp and swift sound from a smaller source (say an electric shaver) whereas '*bloub*' suggests a fuller sound from a bigger source (like big water bubbles). This kind of similarity in word and visualization can be found in, for instance, the written text of a baby crying (in comics) is *ua-ua* in Hindi and *wah-wah* in English. Similarly, the written text of an explosion is *badaam* in Hindi and *badoom* in English. Likewise, there are other similar words which actually resemble the sound and are phonetically similar across many languages.

The reason for why humans have affinity and interest towards making funny onomatopoeic sounds is still not known. However, it has been found that Humans do have emotional associations with environmental sounds and it is easy for them to verbalize the sounds originating in the environment. Humans have always enjoyed to mimic the sounds produced in nature and verbalize and visualize in different contexts either for communication (like in language) or for entertainment (like in storytelling). In this context, a study found that onomatopoeias are related to 'pleasant' and 'unpleasant' experiences depending on the nature of the sound. Pleasant onomatopoeias are described as 'smooth', 'clear', 'bright' and unpleasant onomatopoeias are 'coarse', 'dark', 'heavy', 'rough' etc. (Kwon & Sakamoto, 2017). Similar use of adjectives is found to describe the sonar waves, in the U.S Navy where the sonarman describes the sonar signals with qualitative adjectives like 'heavy', 'light', 'hard' or 'soft'. This is a common tendency which leads to the development of a sonar vocabulary (Solomon, 1958). Sound symbolism helps to remember words

as it has been seen that non-words labels can be remembered by readers easily. It is therefore appropriate and effective to use big sounds with back vowels and smaller sounds with front vowels while signifying different sounds.

Studies on the formation of mental shapes by hearing the sound symbolic words posits that when a sound is made, the audio is heard first and then a mental shape attaches to it even before actually seeing a shape (Hung, Styles, & Hsieh, 2017). In the case of onomatopoeic words also, when the word is read, a mental shape is created before the word is seen in a visual form or sound effect form. The production of sound from real life affects the listener to attain meaning of the source. Further studies conducted for product sounds shows that with semantic groups of sound, a range of semantic meanings are associated with the listener (Özcan & Egmond, 2005). For instance, when a person is told the word 'shaver', immediately a range of semantic groups are formed regarding its sound, utility and context. Thus, things are recognized mentally even before the viewer engages in meaning making of the things by actually seeing the object.

It is clear from the literature of sound symbolism that there indeed exists some cognitive relation between the words chosen to represent sound and their meaning. Hence, non-arbitrary relationship between sound symbolic words and its meaning gives the scope for researcher to explore the logical steps to propose and design such words. And new words can be created in the context of comics based on some logic so that the words represent the sounds and meaning appropriately.

2.2 SSW in comics

Comics requires reader's involvement and association in order to disseminate the story. The degree of visual literacy of the reader decides how much associative the reader can be with the story and decode the symbolic meanings of the comics (Wallestad, 2013). Within the comics, SSW functions as hybrid of image-text that is understood as an image while reading it at the same time.

Comics have very tight spaces within small panels. Anything that goes inside the panels have to be carefully composed to retain the meaning and not just for design's

sake for which visual literacy is mandatory for the designer and reader. Developing visual literacy of comic book symbols is mostly a practice based habit that develops over time. Wallestad proposes for developing a symbols based reference system to be used in digital comics that will allow user to click the symbols and move forward the story. However, he primarily deciphers the idea based on Japanese symbols used in manga. It does not contribute enough understanding to employ SSW as symbols for conveying sounds and other emotions. Even though he accepts the multimodality of comics but still misses to focus on other aspects that can communicate to the senses except symbols.

A study on *Tintin* by Forceville argues that the different types of symbols that appear in *Tintin and the Picaros* that signify motion, movement, speed, emotions are called 'runes' and cannot mean anything in isolation (Forceville, 2011). Some of the runes found are speed lines, movement lines, droplets, spikes, spiral and twirl. While his study argues about the runes and their meanings, possibility of attaching similar structural elements is also can be seen with sound effect. Different types of flash stars, action lines, clouds, motion lines etc. are also found in comic book sound effect surrounding the words that imparts similar meanings like runes. Similar to runes, emotions are mainly represented in comics through symbols that appear hanging or floating on top of a character's head. A study conducted with the identification of conventional and unconventional symbols (called upfixes) found that participants recognize and associate the upfixes with the intended emotion of the character for which it is made. Question mark and exclamation mark are considered as upfixes in the visual language vocabulary (Cohn, Murthy, & Foulsham, 2016). In this context any other words for representing emotions in Western comics is not found except few symbols.

2.2.1 SSW and its variations

The literature from section 2.1 presented the different terminologies related to sound symbolism that are used by different scholars. Similarly practice is found in

the context of comics. This section will provide the different variations of SSW that are described by scholars.

SSW contains both onomatopoeic words representing actual sounds as well as descriptive words that describes a sound. Sound effects appear in two modes in comic: descriptive and onomatopoetic (Guynes, 2014) (Catricala & Guidi, 2015). Their study differentiate between these two modes of SSW. Another study (Covey, 2006) that differentiates onomatopoeic words with descriptive words argues that 'descriptive words' help in adding humor, emphasizing on context and induce layers of metaphorical meaning in the images. Covey studied the onomatopoeic and descriptive sounds appearing in Lynn Johnston's comics and found that a huge number of words appear that are not the conventional dialogues or narration text. Rather the words appears in the signage, product labels, product sounds, animal sound, and action descriptive words and so on.

Differences between onomatopoeias and interjections are also presented by scholars (Sasamoto & Jackson, 2016). Being a direct imitation of the sounds, it is argued that onomatopoeia lies closer to expressive dimension of communication. They function as a communicative device in sending a message. The most common interjections that are used in daily life are *wow*, *ouch*, *argh*, *yuk*, *hell*, *damn* and *shit*. They also argue on the difference of feelings expressed by the same word in Japanese story books and comics. A word for silence can be used in different context signifying different feels of silence. In comics, the SSW can also be utilized for different context by drawing it differently. For this research, interjections will not be considered as SSW because they are not words representing sounds (like onomatopoeia) rather they are spoken expression.

Further variations of SSW is found from the stand point of Piercean semiotic analysis study of onomatopoeia in which Sean Guynes employs the term, *onomatopeme* that refers to the graphic representation of sound as a sign (Guynes, 2014). He distinguishes between vocalizations (grunts, laughs and words) and sound effects (explosions, punches or any sound not produced by voice-box). He

also argues to the natural tendency of humans to represent sound based on their cultural influences is universal. He discusses the differences between vocalizations and sound effects while stressing that vocalization can also be treated as sound effects. However, vocalization drawn as SSW will not be real SSW as they are not representing sound (like onomatopoeia) but actual vocalization (laughs, screams etc.). Thus, for this research, vocalization drawn as SSW will not be taken into concern.

As pointed earlier in this section, SSW are a hybrid of image-text. Categorizing them to image or text modality is difficult. However Henry J. Pratt affixes onomatopoeias in the textual modality of comics mainly because they are words that can be *read*. In this context they are categorized in the literary dimension of comics (Pratt, 2009). However, while in the textual and linguistic form the SSW are affixed in literary dimension, the problem arises when they are visually represented in a comic that is meant to be conveying the sound through its visual characteristics. In that case will the onomatopoeia will still be studied as part of literary dimension or visual dimension or in the dichotomy of both? This is why SSW shouldn't be categorized in one dimension rather they have their own dimension.

2.2.2 SSW and its function

In comics, SSW has specific function related to the representation of sound. As a hybrid of image-text they are read and viewed at the same time. Scholars (Forster, Borgwalt, & Neef, 2012) have discussed its function under the term of onomatopoetica. It is argued that function of onomatopoetica can be of two types: to imitate ambient sounds and to express emotions. These two dimensions bear similarity with the definition of SSW definitions presented by other scholars (Akita, 2009) (Takehi, Tamori, Schourup, & Emerson, 1996). However, onomatopoeia representing emotions is marginally lesser in European and American comics compared to Japanese comics.

SSW plays a significant function in conveying the sounds. The significance of SSW however might differ depending on the publishers and cultural context. In a quantitative study (Pratha, Avunjian, & Cohn, 2016) that compares Japanese and American sound effects and their employment according to the genre, it is proposed that sound effects are creative design element that convey variety of sounds and can be treated to fit in a particular context. This study posits that sound effects has different structural features and wide range of semantic presentations. They argue that since the content and production of independent and mainstream comics is different, therefore each genre will treat sound effects differently. The premise of this study is closer to the current research on SSW and thus taken in to concern in the later chapters.

SSW are important for the visual language of comics as they help the reader to connect with the action quickly. Some studies (Cohn & Ehly, 2016) (Cohn, 2007) argue about the function of visual morphemes in comics. The visual morphemes although are not words but rather uses symbolic devices to convey emotions (like blood from the nose for lust, popping vein on forehead for tension etc.). These visual morphemes are mainly used in Japanese comics. These type of symbolism is a significant and imperative trade of comic arts as it helps the reader to scan through the images quickly especially in Manga (Schodt, 1983). Similar function of identification is played by SSW in the comics to identify the action, characters, and emotions.

SSW is a visual symbol in comics. Symbolism is important in comics because while the text and image provides the storytelling, the other senses (sound, touch and smell) has to be essentially conveyed through image and text only. In this context, comic book uses range of symbols to signifying and communicating to the sense other than vision (Wallestad, 2013). SSW thus functions as a communicator for the other senses that are not represented through dialogues or images.

The utility of SSW in comics and graphic novels has different views. While SSW is a required symbol in comics for representing sounds and emotions, it is not the

same for all cases. The employment of SSW is more popular in Superhero comics especially involving pages showing actions and fight scenes. An example in this context is *Watchmen* by Alan Moore that is an exception that does not use any SSW in the entire story being a superhero comics/graphic novel. This certainly raises questions regarding the function of SSW in graphic novels (discussed in detail in chapter 5). The difference in format of publication therefore impacts the function of SSW and its presence. SSW might be abundantly found in one genre (like Superhero), whereas some other genres (like drama) might not employ any SSW.

2.2.3 SSW and its effect

The purpose of using SSW is to induce some visual effects to the static narrative to make it more interesting. In reality, we do not see sounds but hear them. In comics, interestingly, the sounds are heard after seeing and reading the SSW. While seeing them, we do not question its existence based on physical laws. Rather they are enjoyed to enhance the overall narrative experience. The seamless blending of SSW in comics is what gives the sound effects their unique identity in comic art and helps to make comics interesting. The aesthetic blending is also found in equal effect in graphic novels where both image and text work equivalently (Gluibizzi, 2007) to convey the story.

The sound effects also create a sense of the medium i.e. comics and reading the sound effects lets the reader understand that they are reading a comic book (Iglesia, 2014). It implicitly also indicates that the sound effects make the images appear more *comicky* than a wordless comic book will be. It is interesting therefore to note that in Alan Moore's work (*V for Vendetta*) omission of sound effects is purposefully done to make the narrative more real and resembling a documentary style (Brown K. , 2013). This indicates that the addition of sound effects indeed induces a comical effect to the images that Moore avoids deliberately (even in *Watchmen*). Brown argues that sounds, especially music when conveyed in the form of music notations has a different impact on the narrative. It actually makes the temporality of the required images to be read in the given time interval. Deliberately designed

SSW is effective in conveying the temporal aspects of comics (discussed in chapter 5).

The SSW are a flexible element that do not rely on grammatically right spellings. Rather artist can freely create their own spellings and words to suit the action. The formal effects of using SSW in comics is thus mainly for entrainment. A study (Hill, 1943) found that children have an affinity towards humour and they are more drawn towards comics that uses distortion in words specially onomatopoeia. For this reason, artists use deliberately misspelled words in order to create amusement and interest in the images with added humour to it. For instance, for inducing a stretched feel to the word (*boom*), the letters could be repeated (*boooooom*) and even misspelled (*brakaaabaddaaabooooom*) and thus becomes amusing to read for children. The word distortion of the onomatopoeias is not only fascinating for children but adults too as it is thoroughly enjoyed in the art of comic books.

The effect of onomatopoeias is also noticed in classroom settings where teaching of comic books also includes creating sound-words that are amusing to the children as they help them to make new funny sounds and words and also know about onomatopoeias. In this context it is further concluded in a study (Schoof, 1978) that comic books also play a strong role in educating children. It is an entertaining medium with a vast potential. The potential specifically lies in the learning of new onomatopoeias that helps children to create new words, verbalize it loudly for fun and also draw them to conceive the practice of writing.

SSW is a stylistic device in the medium of comics that creates a distinct visual effect to the narrative. There can be variations in the form of a same SSW across different languages, and each one of them can be perceived differently. The structural features of SSW that effects the visual form is presented in a study (Forceville, El Refaie, & Meesters, 2014). Few of the stylistic attributes (different fonts, colour, alignment and size) are also briefly mentioned in this study that argues that onomatopoeia is a stylistic device in comics. However, the stylistic features were

found to be limited and provided a narrow view of SSW. Still, this study is found to be relevant in the present context of research.

2.2.1 SSW and artists

Comic book artists enjoy drawing SSW in comics. Numerous variations and exploration have been done in comic arts for SSW. For the tie of hand-lettering to the digital typefaces, there are abundant styles of SSW available today. Some of the practice based theories on comic arts is provided by pioneer artist like Will Eisner and contemporaries like Scott McCloud still holds true.

Will Eisner who reflects briefly on almost all aspects of comic art and storytelling (Eisner, 1985) (Eisner, 2008) has reflected on SSW as an important visual element of comics. His theories are widely referred and practiced among comic artists and moreover his commentaries are understood better than any other quantitative or scientific driven studies of comics. In the context of lettering and sound effect he states that:

“Hand lettering will always be the most idiosyncratic and expressive means of inserting words into balloons and text panels.”

His statements are simultaneously demonstrated and presented in coherent manner that brings forward his points easily. His preference for hand-lettering is may be primarily because he worked through an era when technology was limited and due to which he was already adapted to the traditional methods of comic arts. Yet, his practice reflects the significance of SSW in comics.

After Eisner, Scott McCloud extended Eisner’s work and creates a more systematic and in-depth self-analysis of comics. He considers different sound effects and letterings as visual identifiers that are signifiers of different concepts (McCloud, 2006). He concisely mentions about these visual identifiers being present inside speech balloons and in different styles (see figure 2.1). While the more conventional words are part of the dialogues inside speech balloons, the different symbols inside speech balloons lean more toward being visual identifiers.

McCloud argues that the lettering styles are constantly invented to represent the *essence* of sound (McCloud, 1994). His approach to understand comics is overwhelming and due to this the role of the stylized letterings however is only shown in few panels and any ideas about their broader functioning is left to the reader's understanding.

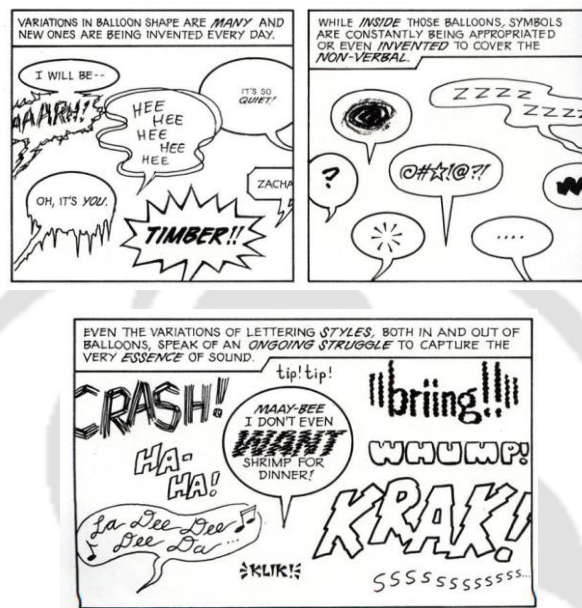


Figure 2.1 Different styles of letterings (McCloud, Understanding Comics, 1994), p.134

2.2.2 SSW in media

To make SSW popular in media, *Batman* t.v series created by William Dozier and starring Adam West in 1966 played a significant role (Oyola, 2011). Whenever Batman and Robin were involved in a fight, the punches, kicks and the breaking of objects were shown through SSW that were drawn and flashed on the screen for a second, cutting the action scenes in between. The flashing of the words '*Bam, Pow, Bang!*' will happen for few seconds and the narrative will continue then onwards. It is evident that the visual style of *Batman* series at that time was indeed more *comicky* and suited for children when compared to the dark theme and special effects oriented *Dark Knight*, 2008. While the older *Batman* series conveyed a sense of amusement and appeared campy, the post 2000 *Batman* movies drifted towards conveying a darker tone of visual style and sequences that is removed from the

humorous and comical style of the t.v series, thus no more flashing SSW were seen onscreen since then.

In popular media and films, sound effects have remained an element that evokes a comical effect to the text and infuses drama in the visuals. In films however, using sound effects appears somewhat *cartoony* than when used in comics because unlike films, the SSW in comics have become such a conventional part of the visual language of comics that while reading they almost become invisibly distinct and blend with the image and text (Oyola, 2011).

2.2.3 SSW and typography

The practice of creating SSW lies closer to the domain of typography in graphic design. From this perspective also there seems to be existing rare studies on creating SSW. Sparser is the literature available on Indian language SSW that has a very unique and different characteristic than Latin script. ‘Non-Latin scripts’, as they are generally termed, are considered most sophisticated and aesthetically pleasing scripts that is considered one of the greatest invention of man in writing systems (Ross & Shaw, 2012). They also strongly pointed and commented that when it comes to Non-Latin font design, India has mostly witnessed the demeaning of scripts to meet technology and not the vice-versa. This often led to the elimination of the esthetic value of the scripts and brought it down to simple basics forms. This notion of ignorance in research on Indian scripts has led to a scarcity of well-formed types compared to Latin script. As this research is on Hindi SSW, therefore limited number of literature on Devanagari scripts is found (Dalvi, 2009).

Few studies (Morrison, 1986) in typography posit well-established arguments through using semantic differential scales and show that different types of fonts evoke different connotative meanings to the viewer. The fonts have direct impact on the message being displayed and perceived. Similar studies (Juni & Gross, 2008) (Spiekermann, 2014) has found that serif and san-serif fonts evokes different effects, formal and informal respectively and also typography displays different personalities based on the formal and informal characteristics (Mackiewicz & Moeller, 2004)

(Brumberger, 2003). The expressiveness of typography is shown with various example Rob Carter's Experimental Typography. It is a closer look to typography from a designer's view and provides rules for typography that is more conventionally accepted among graphic designers (Carter, 1997). The knowledge from these literature were found to be helpful while designing SSW for different context.

Psychology studies (Dyson, 2014) on typography also demonstrates that type perception is different depending on the form of the letters. While most of the research in typography is qualitative and driven by subjective viewpoints of designers, there is indeed a lack of experimental research to establish why types induces various effect (Thangaraj, 2004). Typographic studies provide a foundational ground for understanding the letters and their personalities when creating SSW and helps to understand the kind of persona the sound needs to convey so that it is created with the required structural features.

Apart from these studies, any other literature, specific to SSW and its structural features is not found in typography. Any study on the structural and visual components of these words were not found that could present any idea of the relation of the structure and meaning in the comics.

2.2.4 SSW and translation

Any Western comics has been translated in India and remained popular for years (like Tintin, Phantom, Mandrake, Asterix etc.). It is found that the SSW gets effected while translation due to the lack of substituent fonts in Indian languages. This effects the original visual style of the SSW and loses the resemblance of the sound.

SSW when translated in other languages pose a challenge for the artist and the readers too. Translating sound effects is a challenging task but a deliberate translation in different languages has a very personal effect in the specific language and the reader. *Robot Dreams* by Sara Varon translated in French and German is one example where the SSW are actually drawn and translated keeping in view of the translating languages (Venable, 2011). While this is difficult practice due to the

sheer amount of time and labor it would consume to translate and draw each word in translated language (think of *Tintin* in this case, see figure 2.2), yet it is beneficial for keeping the aesthetic and meaning of the sound effects in accordance o the image.

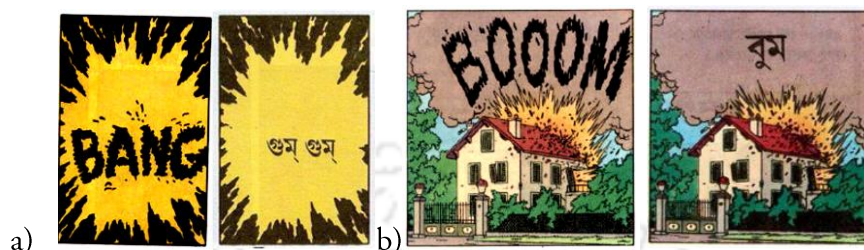


Figure 2.2 Panels from Tintin: The Calculus Affair, p.3 and p.26: Latin and Bengali version

Figure 2.2 shows the translation of Tintin in Bengali language. The SSW are significantly changed in Bengali language. They appear as a piece of text pasted on the image whereas the original panels are more effective in communicating the sounds. This happens if in the translated language the translator is not an artist and thus uses a different font for SSW. It can also happen, if the translator do not understand the structural features of the SSW required of conveying the sound.

2.2.5 SSW in digital age

With the literature on SSW, it is also checked if there exist any design support for creating SSW for English and Hindi comics. Few software are discussed here were found for creating English SSW. With the advent of technology type design has achieved greater flexibility and ease of utility. The millions of fonts that are available today and being created each day proves the need for designing and using new fonts in different context. Even in comic arts, fonts for specifically sound effects is readily found in digital interfaces and websites like *ComicLife* and *Blambot.com*. Figure 2.3 shows screenshots from three interfaces that provide separate categories of sound effect fonts that could be easily used in comics. While Blambot and Comicraft supplies fonts to the more professional comic book artists, ComicLife however with its simple interface and style sheets is more suitable for people without experience

in comic arts but still can create simple layouts of comic pages with the tools provided in the interface.



Figure 2.3 a) Screenshot from blambot.com (b) Screenshot from Comic life software (c) screenshot from Comicaft

These design supports provide variety of SSW for different context. Any such exploration or tools for Indian language SSW is still not available and that poses a challenge for designers to create sound effect in Indian scripts.

2.3 SSW in Indian Comics

Indian comics is predominantly populated by superhero and mythology titles that are mostly published in English language¹. During the early years of publication (around 1960s), few publishers produced regional language comics (like *Chandamama*) however with the turn of the century more and more publishers turned to English language publications only. There are more than 20 publisher currently in India, and majority of them is publishing English comic books.

It is surprising to find that with the rise of the publishers, there has been hardly any academic development on Indian comics studies. Few literature exist focused on Amar Chitra Katha (discussed in chapter 1) discussing it from a visual culture perspective. Other publishers have rarely received the attention of academia and

¹ See https://en.wikipedia.org/wiki/Indian_comics for more list of Indian publishers

thus literature is hardly available in Indian comics studies. Hence, it is considered important to converse with the creators and publishers in order to understand their views on Indian comics and SSW.

2.3.1 From the makers of comics

For understanding the significance of SSW, the practitioners and publishers in the field of Indian comics are interviewed and their view are synthesized. During various conversation and interviews with artists/creators/publishers of comics there are few points that reflect on the role of sound in comics. The interviews are semi-structured to give more flexibility to the respondents to present a diverse range of views and comments. As the creators are not used to the term Sound Symbolic Words, therefore they usually described them using the term ‘sound effects’ or onomatopoeia. However, the term SSW will be used in the discussion for maintaining clarity. Only when the interviewees are quoted verbatim, ‘sound effects’ will be used.

During the interview with Reena Puri, the editor of Amar Chitra Katha, she stressed on the significance of SSW as more suited towards young readers. While it was clear during the conversation that SSW are used in ACK, however it was also stated as meant to be used mostly for children related titles and subjects. Mythology and historical titles do employ SSW but sparsely, as they tend to impart a *childish* appearance to the images (Puri, 2015). It was also conveyed that for adult readers the style needs to be different and thus SSW are not thought to be suitable for them.

While ACK does remain a strongly editor controlled publishing house, in order to acquire a more diverse view, the experienced artists of ACK are also interviewed. The artists (Hazra, 2015) conveyed slightly varied view from the editor as they considered SSW more as a visual element that adds interest and flavor to the image. Apart from stressing on the importance of SSW as a dramatic visual element, any other critical thoughts did not appear during the conversation.

Subsequently articulating the viewpoints from ACK, creator from Raj comics, another major publishing house that publishes hugely in Indian and other regional

languages is consulted. While the editor was not available for the responses, another masterful and experience artist, Dheeraj Verma, who has worked for Raj comics for more than 10 years and still working in the international industry (*Transformer's series, Lady Death, Conan the Slayer*) for almost 27 years was interviewed. He has a straightforward way of looking at sound effects. On this note he says:

“Can you watch movie without background score, NO. Similarly, in comic books also. Sound effects gives you *feel* (Verma, 2017).”

While Raj comics and ACK are the most important publishers of Indian comic books, some independent creators were also interviewed. As the editor controlled publishing houses have different system of creative work, it is aimed to gather views of independent artists also who do not work in strictly editor controlled setting. In this context, Akshay Dhar, an independent comic artist (Metadesi comics) has this to say:

“...Because sound effects can add to the amusement of reading. And it comes depending on the type of story you are making (Dhar, 2015)”

Through the conversation with Akshay, a similar view like ACK's editor recurred i.e. SSW are more suited based on the reader and the type of story. If the story deals with mature and sensitive subject matter, then it's better to keep the SSW to minimum frequency.

Another artist and designer for ACK has similar views on using SSW. Sanjhiya Mayekar works for ACK and stresses the importance of SSW due to their power of creating interest in the images (Mayekar, 2017). Even though she feels that SSW are more entertaining for kids, yet she explains that it is meant for all ages. However, apart from adding emotional value to the image, sound effects according to her, plays no significant role in the narrative.

Abhijeet Kini, popular independent comic book artist, who has been in the industry for quite a long time, had a more insightful views on SSW. He writes and illustrates all his comics except few collaborations. Therefore, he does not have the constraint of an editor instructing him to use SSW. His comments also resonated the previous artists on the importance of SSW. He employs them mostly because it

adds to the fun and humour of the image (he mostly creates satirical humour comics) adding weightage to the visual medium. While he does feel that SSW are much contextualized but still he creates new words that are out of the conventional formats of SSW.

A veteran creator of Indian comic book from Indrajal comics, Mr. Abid Surti, who created *Bahadur*, however had very simple comments on sound effects:

“There are only 5-10 words for sound effects. It’s not 5000. So it’s not very difficult to use them. And they are used according to the importance required for the image (Surti, 2017).”

This type of casual approach to sound effects can be attributed to the visual style of Indrajal comics that flourished in the 60s till the 90s that is almost defunct now unable to keep with the changes of the industry. Also any other creator from Indrajal are not found for commenting on the process.

From the conversations and interviews with the artists and creators of comics, it is clear enough to deduce that there is similar conventional views on the role of SSW in comics. While the Indian comics artists did stress the fact that SSW are important in comics, what role they can play apart from just being a symbol for sound is still fuzzy. It clearly appeared that these words are simply treated for their dramatic functions and for adding visual effect to the comics. Even then any technology for creating SSW or any fonts for Indian language SSW does not exist.

During the conversations, the need to create design support for SSW was raised. The artists felt that a tool might be a good option to create Hindi SSW. However, it will still depend on the subjective choices of the creators to use or not.

2.4 Insights from Literature Review

This research initiated with discussion on broader understanding of comics in general. Over the discussion of literature review, it is realized that keeping a study in broader perspective will be of little help to the designers. Discussing the larger picture always has the risk of overlooking the minutest details that make the whole picture. A broader view of understanding comics doesn’t helps in formulating specific knowledge of the medium (Cohn, 2014). With this motivation, this

research seeks to understand the structure and meanings created through SSW as one of the visual elements in the narrative of comics. This might appear to be a small area in comics but in order to create a foundation for comic theories it is essential to focus on smaller elements of comics.

The literature on sound symbolism is concentrated around two themes: perception of sound, in which scholars primarily discussed about audible and inaudible sounds produced in nature and their related studies. Secondly, linguistic or textual representation of sound where most of the studies discussed the linguistic concerns of writing and vocalizing the sounds. Scholars have discussed onomatopoeias in linguistic viewpoints but creation of SSW for comics is not extensively discussed. The broad category of SSW has remained restricted to only onomatopoeias and does not look beyond that.

While being a medium, comics act as a mediator between society and its happenings, as an art form, comics becomes a cultural artefact. Through all the definitions and arguments in literature, it is clear that comics definitely employs two essential modes of storytelling: literary and visual. To convey the visual narrative effectively, both these modalities have to be in agreement with each other. It is possible that the visuals might dominate the texts or vice versa, but the final composition of the two should sit in harmony. Apart from these two modalities the third modality of SSW's role is not defined in any literature and how does it affect the other two modalities is not discussed and holds potential for investigation.

Sound symbolism is studied from different perspectives like semantics, linguistics, synesthesia and cognitive science. Much of the studies are experimental and quantitative in nature with findings that reverberates with other studies in sound-symbolism. Most of them agree to the form of the word and its relation with the sound has some basis in brain (but has not been pointed what), with some degree of arbitrariness. While experimental studies have discussed sound symbolism in language, any perspective looking at the visual representation of the sound is

hardly found. This provides a promising area where this study will be focusing from the perspective of visual communication design.

Creation and perception are two important aspects of SSW that helped to focus this research. Studying the creation of SSW includes its content (visual and textual) and the context in which it appears. The perception of SSW focuses on the understanding of SSW at cognitive level and how readers understand it. Most of the literature mainly focused on the perception aspect of SSW with linguistics, synesthesia and sociology being the popular domains. The creation aspect of SSW is studied by few practitioners/scholar (like Eisner and McCloud) and holds possibility for further research. However these practitioners have commented on comics as a broad medium and any detailed understanding of SSW did not appear in their studies. Thus, there is an opportunity to create a design support from the understanding of SSW which has not been done by any practitioners. The transformation of the text in the visual form of SSW and its investigation of the structure and meaning formed are found to be an area that requires attention. This research, therefore is aimed at understanding the creation aspect of SSW.

In the 21st century, few scholars (like Nick Sousanis and Neil Cohn)² have demonstrated the potential of practicing comic art while creating theories about it. Their domain of research is different, yet their research beholds the idea of practicing comic arts while testing the theories. Few early exceptions are Will Eisner, Scott McCloud, Art Spiegelman and R.C. Harvey among others, who have mastered the craft of the medium while studying the medium in-depth. For instance, Eisner's theories are tested with his own drawings to represent different properties and effects in comics. This approach is especially helpful for practice based research which is a developing area of research in comic arts. However, there is a lack of many studies

² Nick Sousanis's book *Unflattening* argues about the multimodal ways in which knowledge can be disseminated. He presents his arguments in comics format with heavy utility of visual metaphors. Neil Cohn's cognitive experiments on self-created comic strips as well existing comic strips presents strong experimental results for the comprehension of comics.

like these which presents another opportunity to create SSW based on the theories developed by understanding them.

In the context of Indian comics studies, it is apparent from chapter 1 that Indian comics have rarely received any scholarly attention so far. The only publisher that has been discussed scholarly is *Amar Chitra Katha* and scholars (McLain, 2009) (Pritchett, 1997) have studied it from mostly visual cultural perspectives. The other publishers have remained ignored in Indian comics studies. Discussing about only a single publisher is not going to provide a varied perspective of Comics studies in India. The role and contribution of other publishers cannot be ignored for the holistic development of comics in India.

The state of comics industry in India also pointed a major concern for the development of Indian comics. Majority of the Indian comics are now publishing English language comics. The regional language comic books are slowly becoming lesser in number. With more than 22 official languages, India is a rich country with such diversity in languages. To expand the global readership, while it is a good idea to publish in English, at the same time this trend is separating the richness of local languages from the comic books. Already research on Indian scripts is significantly lower than Latin script (Ross & Shaw, 2012). Following the trends of publishing in English is an additional factor that is effecting the reader's perception about Indian languages. This research tries to bring forward this concern in front of designers and scholars for contemplation and discussion.

Today there are more than 20 publishers in India with a range of content and deviations. Surprisingly, the scholarly studies has not increased with the growing number of publishers. This study therefore, focuses to analyze Hindi comics and hopefully will act as a starting point for further serious discussions in Indian context.

2.5 Methodological Framework for this research

This section discusses the methodological framework that is adapted to identify the research design required for the study. The selection of the methodology is done on the basis of its flexibility that was required to identify and explore the structural

elements of the SSW. In this context, the prominent framework used for understanding the research problem is adapted from Design Research Methodology, DRM (Blessing & Chakrabarti, 2009). The DRM proposes 7 types of research projects found within DRM framework as shown in figure 2.4. Out of the seven types of design research, the current research follows type 2 of the research projects.

Research Clarification	Descriptive Study I	Prescriptive Study	Descriptive Study II
1. Review-based	→ Comprehensive		
2. Review-based	→ Comprehensive	→ Initial	
3. Review-based	→ Review-based	→ Comprehensive	→ Initial
4. Review-based	→ Review-based	→ Review-based Initial/ Comprehensive	→ Comprehensive
5. Review-based	→ Comprehensive	→ Comprehensive	→ Initial
6. Review-based	→ Review-based	→ Comprehensive	→ Comprehensive
7. Review-based	→ Comprehensive	→ Comprehensive	→ Comprehensive

Figure 2.4 Types of design research projects and there main focus (from DRM, 2009, p.18)

Type 2 research design initiates with the review based Research Clarification of the problem. The research problem is further investigated comprehensively in a Descriptive Study I phase. Finally, the study is transferred in the Prescriptive Study phase where a design support is prescribed that is required for the research problem. This process is iterative and at any of the stages iterations can happen which is a required aspect of this approach as it provides the researcher to cross-check important arguments and helps to maintain a coherent flow of the research design.

Within the same methodology, the explanatory stages are shown in figure 2.5. This study started with the Research Clarification stage where critical discussion of literature on SSW in Comics Studies and other relevant areas like Education, Visual Arts, Semiotics and Visual Narrative studies were done. Drawing inferences and conclusions from the literature review, the research lacunae is located that helped to form the research questions.

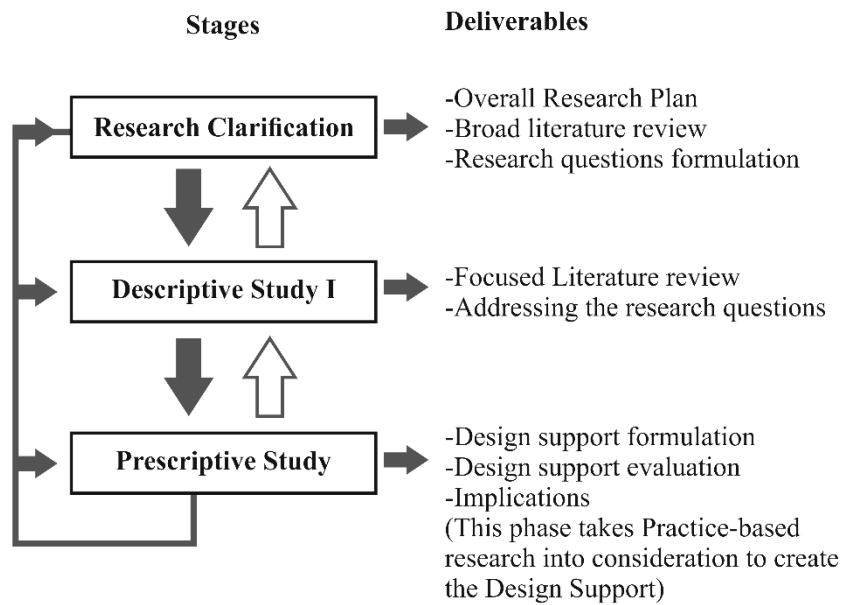


Figure 2.5 Research framework adapted from DRM (Blessing & Chakrabarti, 2009)

Through sample collection and analysis, the DS I stage is concluded by identifying the syntactic and semantic attributes of the SSW. In DS I stage, semiotics is used as a method for the analysis of SSW. It is found suitable in this stage because it leads to a better understanding of the imagery in the context of the visual communication analysis. It leads to facilitate the user for a deeper observation in visual communication (Yang & Hsu, 2015). The SSW are analyzed as visual signs consisting of signifiers and signified. Together, these two parts form a unified work for better understanding of the SSW in Indian comics.

This study further proceeds to the Prescriptive Study phase and aims to create a design support based on the analysis from RC and DS I stages. In the PS stage, the understanding of SSW (from DS I) is utilized to create suggestive design guidelines to create SSW. Along with the design guidelines, it provides a visual repository for designers to be readily used in comics.

In the present study, SSW are investigated as visual signs appearing in comic books that represent sounds. The meaning of any sign contains 2 parts: signifier and the signified (Saussure, 1916). The signifier is the first level of visual information that is received when a sign is viewed. It's the visual information like colour,

structure, form, weight and so on that is perceived whenever a sign is viewed (Martin & Ringham, 2000). While it has also been often argued that the signifier and signified might have an arbitrary relation, like why the red color is associated with aggravated emotions is not known (Yang & Hsu, 2015). Still, the understanding of the visual signs from these two aspects provide effective perspective for understanding the working of the signs (Leeuwen & Jewitt, 2004). The signified is the meaning that is constructed by the whole combination of signifiers in that particular context (Chandler, 2007) (Morris, 1944).

The signifier and signified are inseparable and they function simultaneously to create meaning of signs. However, both syntax and semantics can be studied separately in order to gain knowledge about the sign's meaning and its formulation (Goddard, 2011). However, understanding about syntax demands for the understanding of the semantics and vice-versa (Bermudez, 1995). There are semiotic cues that are used by the storyteller in order to communicate the story world to the reader. When it comes to printed text, the semiotic cues become inclusive and includes written text, sentences, images, diagrams and other visuals that help to convey the meaning (David, 2009). With this view, the present study makes distinction in SSW's signifiers and signified groups. In this study, SSW are primarily considered lying on a dichotomous ground between image and text. Thus, syntactic and semantic analysis are done to understand the structure and meaning of SSW.

In the view of images and their meaning, the semiotic analysis of signs is effective because it has been rigorously tested by many scholars. The idea of language as signs is also not new and dates back to Aristotle who states that the very urge to produce sound in turn produced certain gestures and those gestures over a time were refined and structured to create letters, words and sentences (Schirato & Webb, 2004). Similar practice may be traced in the drawing of SSW in comics also that is partially developed from the urge of conveying sounds in a static medium through the techniques of visual representation. Thus, to study the conversion of concepts

through visual representation and understand their meaning, the theory of signs seems to be the eligible framework (D'Alleva, 2005).

In the world of comics, where images play the vital role in the narrative, the theories of signs are found hugely significant and appropriate to understand the visual signs appearing inside comics. McCloud, in his abstraction to reality model, shows the photograph of a real face and keeps on eliminating details (signifiers) from it. Visual closure completes the narrative and helps the viewer remember the image through elimination and simplification of details (Medley, 2010). At one point arriving at the 'smiley' which is universally accepted as a face. Further moving to the abstraction level, it reaches the language to describe a Face i.e. F-A-C-E (McCloud, 1994). Arriving at individual letters, they do not contain meaning as such: 'F' does not mean anything apart from being the 6th letter in the English alphabet list. But in the context of signifying a face, it does not mean anything. Thus, too much abstraction detaches the meaning from reality and leaves with only a form which can be interpreted in many ways. Thus, written language always requires, grouping of words, with the use of grammar in order to convey a correct sentence/meaning. The aim of this study is similarly to understand the syntax of the SSW without stripping it from its totality. Thus, the SSW is studied as a whole and primarily looked at it as group of signifiers creating meaning.

The SSW even though primarily read as text, is a unique category among image-text modality in comics. Unique because of its duality of existence itself. The SSW is supposed to be *read* as well *viewed* while the meaning has to be understood along with looking at the combined image with it. Hence, at this level it firstly acts as a meaningful text but does not stop there. It also signifies as an image and contribute to the meaning. Conversely, if the SSW is not read and written in an undecipherable language, then it primarily acts as an image which is understood like the other elements of the image but not read. This duality of SSW acting as an image and text at the same time is a unique aspect to it that makes it an interesting visual element to study.

In comics, SSW are always given visual characteristics that resonates the nature of the sound being signified. Denotation is the primary meaning of an image in relation to a particular context. Whereas connotation is the range of secondary meaning (intended or unintended) within form of communication (Noble, 2011). Being a visual form of sound, it can be said that both denotations and connotations are deeply embedded in SSW. Based on Pierce's classification of signs into icon, index and symbols (Merrell, 2001), it is found that SSW fit more closely in the group of symbols. Since most of the studies of SSW from design domain do not show any empirical relationship of the visual attributes and their meaning, thus whatever is inferred and deduced is majorly based on the conventions and the undefined rules prevalent in the comic book design and graphic design.

So far, with the proper understanding of the literature in SSW and fixing the research premise, the methodology is hereby affixed. The lacunae and the methodology guided to formulate the research question discussed in the next section.

2.6 The Research problem

Based on the review of literature and the inferences drawn, it is thus found that sound in comics has remained an ignored ground that requires systematic investigation and study. While the phenomenon of sound symbolism is primarily looked upon from cognitive science and linguistics, any detailed study on the visual representation of SSW is not found. The review of literature evidently presented an understating of SSW and their significance in language while their significance in comics still remains an unanswered question. Also, the literature review helped to understand the methodologies and perspectives followed by scholars to study SSW.

The broader concern of this research is to improve the quality of visual discourse of Hindi comics. This can be done by improving the quality of images, text, layout and SSW. Out of these aspects, this research is focused on improving the quality of SSW. Thus, drawing from the lacunas and methodology the following objectives are affixed for this research:

- a) To enhance the understanding of SSW in Hindi comics.
 - b) To understand the role of SSW in Hindi comics.
 - c) To create design support to enhance the quality of SSW in Hindi comics.
- SSW.

This study therefore visits SSW from the perspective of visual communication design and approaches to the formulation of problem with concern of a visual designer and comic book artist.

Therefore, the main research questions (RQ) formulated are:

1. What are the syntactic attributes of Hindi SSW in Hindi comics?
2. What are the semantic groups formed out of SSW in Hindi comics?
3. What is the role of SSW in the visual narrative of comics?
4. What kind of design support can be developed for designing SSW?

The questions are formulated for improving the quality of SSW in Indian comics. For this purpose, the understanding of SSW has to be improved which will be answered in RQ1, RQ2 and RQ3. The better understanding of SSW will be utilized for creating a design support for designers that is answered in RQ4.

This thesis is rooted in visual communication studies with an analytical approach from visual semiotics and design research. It adapted the DRM framework of research design and formulated the research questions in the RC stage. The DS I phase provided the analytical ground to the research that lead to the PS stage of research design.

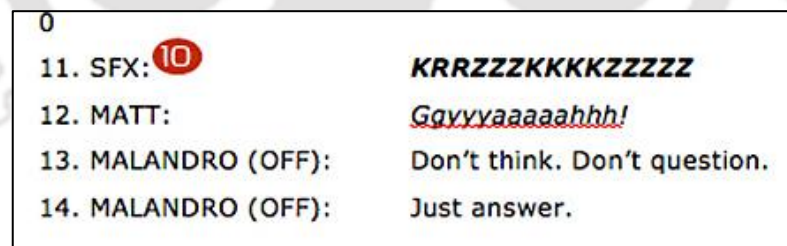
Therefore, with the necessary fertile ground prepared for the analysis, the next chapter initiates investigation to answer the research questions to enhance the understanding of SSW in Hindi comics.



3. Understanding SSW with Syntactic and Semantic Analysis

The SSW is a hybrid form of image and text that demands reading like text as well as viewing like an image. From the literature review of sound symbolism studies it is clear that while SSW is studied more as a cognitive phenomenon, any approach to define its structural components and the meaningful groups from the perspective of visual communication studies do not exist. This study thus proceeds with the underlying theme of locating and understanding SSW in visual communication studies.

In the traditional industry practice of comic arts, the sound effects are written in the script just like other piece of dialogues. For instance, figure 3.1 shows a sample script of a page from Brain Boy, Dark Horse Comics. It is a cropped image showing the script details for panel 4 of a page. In the serial number 11, the *SFX* (or sound effects) is written in bold caps as **KRRZZZKKKKZZZZZ** that denotes the sound of a shock treatment given to a character. The rest of the dialogues follows as usual in sentence case.



0	
11. SFX:	KRRZZZKKKKZZZZZ
12. MATT:	<u>Ggyyvaaaaahhh!</u>
13. MALANDRO (OFF):	Don't think. Don't question.
14. MALANDRO (OFF):	Just answer.

Figure 3.1 Script page from Brain Boy™ & © Dark Horse Comics, Inc.

This is almost a traditional practice in an editor controlled setting where the writer provides the sound effects and then it is visualized and drawn by the artist. Now, the same script is transferred and completed with colors and dialogues as shown in figure 3.2. Note that, this time the sound effect has little variations (from the spelling in the script) with some repeated letters removed as shown in the last panel. The acoustic effect more or less remains similar to the script even after the

removal of few letters. This decision is probably taken while drawing the letter in the composition and the need to shorten the word might have raised as the script SFX appears to be hugely exaggerated and long.



Figure 3.2 Complete drawn panel from Brain Boy™ & © Dark Horse Comics, Inc.

The example discussed here indicates some important aspects of SSW creation that should be considered before the analysis in this study. Firstly, the sound of electric shock must have been heard by the writer that is manifested in the script. This also indicates the presence of electric shock sound should be audible. That experience of hearing the sound is then written with using unrounded letters that emphasize the nature of the electric shock (specially the repetition of Z). In the previous chapter it is seen in synesthesia studies how unrounded vowels are related to spiky and angular shapes and features. This holds true and effective in this case also. The text thus has some relation with the audible sound and is not totally arbitrary. Lastly, the written letters are visually represented in the panel with the help of jagged letters colored in white and yellow strokes that helps to denote the blazing electric shock.

These aspects can be generalized in the form of stages of SSW creation that will help to understand SSW in a more detailed manner. At the beginning there has to be a sound that is audible and can be heard. The sounds are produced from both natural and artificial actions and phenomena. This stage is called as *Sound* where the sounds are getting originated. While the emphasis of this study is on prominently towards the audible sounds, it is also acknowledged that sounds for inaudible phenomena (like emotions or senses) also exist as found extensively in Japanese literature. However, it is considered that the sounds for emotions and senses is created based on imagination and cultural influences. This is considered

because, in the context of Indian and Western languages, sounds for emotions and senses are not used in comics contrasting to the Japanese practices. Hence, the SSW denoting emotions and senses are mainly imaginative as emotions do not produce sounds. The feelings is articulated and then transformed in a written word but that do not support the idea that emotions create sounds.

Once the sound is heard, it is then perceived in cognitive level. The *Perceived Sound* is the stage where the sound is perceived by the listener. The sound starts forming a mental concept in the mind and creates a conceptual shape of the sound. Previous experiences of hearing the same or similar sound plays a vital role in perception. Still this stage can be highly abstract as each type of sound can be associated with numerous shapes. Even it is possible to perceive the sounds as lines and textures (like sound of a heart rate meter that is commonly associated with a zig zag unidirectional line).

In the next stage the mental concept of sound is transformed through vocalization in the form of words as the *Linguistic Representation*. The form of the word is highly culture oriented as each culture has different expression for the same sounds. For instance, the barking of a dog is *Bhaw Bhaw* in Hindi, *Gheu Gheu* in Bengali, *Woof Woof* in English, *Wan Wan* in Japanese and so on³. Even in the same language there can be different words for the same sound. Like in Bengali for the dog bark there are words like, *Bho Bho*, *Gheu Gheu*, *Khek Khek* etc. depending on the type of sound the dog is making. The word formation is related to the mental shape of the sound and onomatopoeias are close examples of such category where resemblance of words and sound is closest. The type of vowels used in the words is related to the type of shape of the sound (soft, harsh, smooth, spiky etc.) and thus the words resemble the sound's characteristics.

³ See <https://www.psychologytoday.com/blog/canine-corner/201211/how-dogs-bark-in-different-languages?amp>, for some interesting use of dog bark words across different languages (accessed on 23-5-2016) .

The sound is then converted into a written form in the *Textual Representation* stage⁴. With the cultural conventions of the script of a particular language, the phonetic form is given a textual form that could be read and understood. In this stage, the type of script is highly important as it decides the amount of complexity the word will have while writing. For instance, Devanagari script is a highly complex writing system compared to Roman script and it requires several combination of words, diacritics and conjuncts in order to represent a single word. The textual representation is a direct transformation of the linguistic representation. However, as seen in figure 3.1, the written words of the electric shock can contain multiple *Z* or *K* depending on the emphasis intended to be achieved. Thus, in practice, the textual representation is flexible enough to add drama and emphasis (by exaggerating the spelling) to the sound depending on the context.

Finally, the text is converted into a *Visual Representation* that is seen in figure 3.3. This stage is the phase where the SSW takes its visual form and becomes part of the comic books' elements along with image and text. The final SSW thus created would signify the produced sound written in the script in figure 3.1. This is the stage where the current study is focused and discusses the syntactic and semantic attributes necessary for the visual representation of sound in comics. The whole purpose of these stages is to understand the creation of a SSW from a sound to its visual representation stage while understanding in macro level the visual representation specifically.

These stages are articulated in the figure 3.3 with an example of sound produced by a crow. The cawing of a crow is perceived as a harsh and sharp sound and thus in the linguistic representation stage the word *KAAV* is pronounced in Hindi language. The same is written as the textual representation. Here, note that there are four letters used in Roman script to write the SSW however, in the visual representation stage the Hindi SSW contains only 2 letters with a straight line in between called the *aakaar* and a *bindu* (dot) on top. This is the complexity that is

⁴ See Appendix 2 for the textual list of the SSW

mentioned previously that is found in different Indian scripts and thus changes the visual representation of the SSW. The visual representation of the SSW is denoted through a red colored letter with irregular lines probably to denote the violent nature of the crow as the context from which the SSW is taken depicts a crow which is kept as a pet by a ghost.

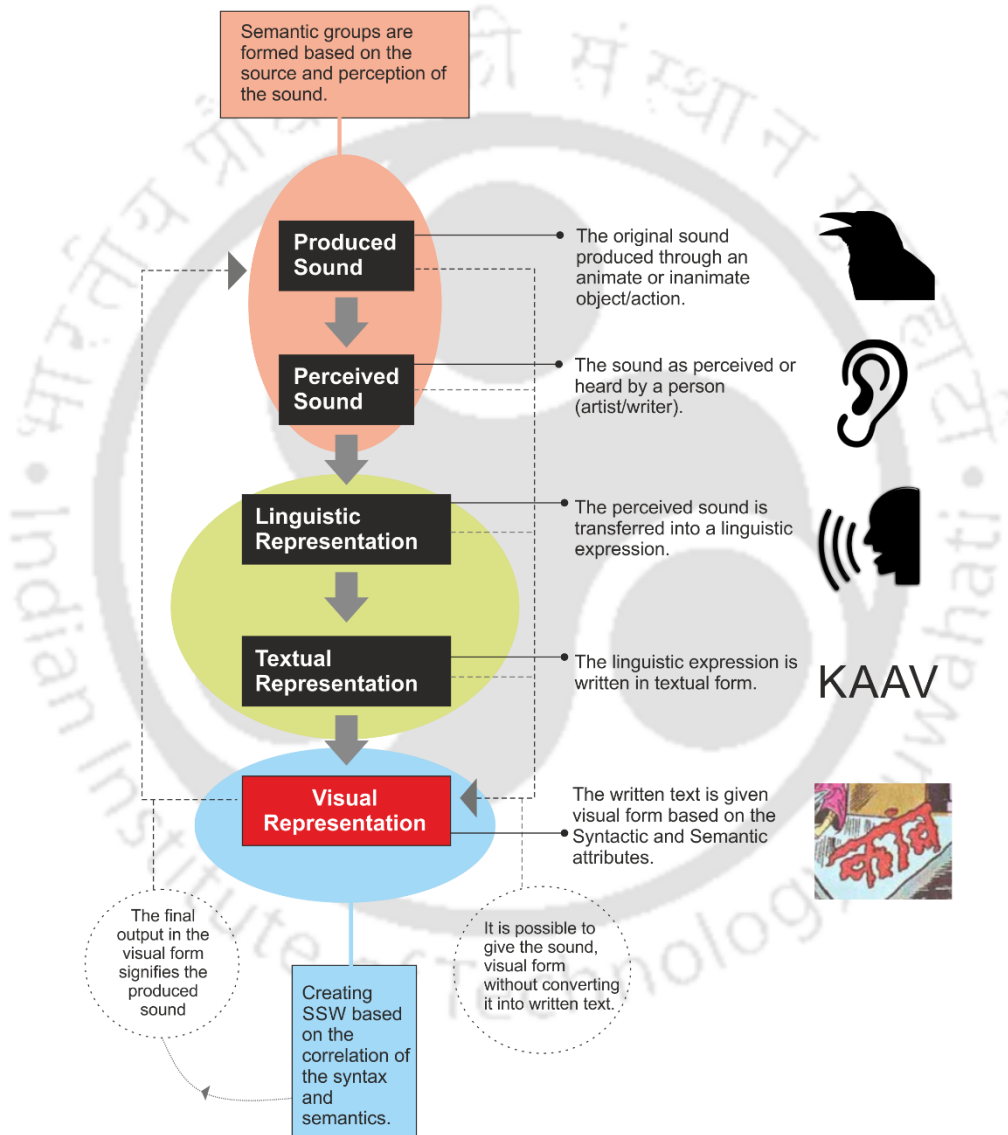


Figure 3.3 The different stages in creating SSW.

From the discussion so far it is therefore observed that creating a SSW requires the proper understanding of the sound-shape association and its linguistic representation. Most importantly as in comic books only the visual representation

of the SSW appears, therefore it is of vital significance to focus on the visual form of the word. With the discussions so far, at this junction, it would be logical to put forward the objectives of the coming chapters. These are:

- a) To understand Hindi SSW found in comic books and its structural components with syntactic analysis (discussed in Section 3.4).
- b) To understand Hindi SSW found in comic books and its meaningful categories with semantic analysis (discussed in Section 3.5).

With the understanding of the stages of SSW creation and the objectives defined, the sample selection and the criteria for the selection is discussed below before proceeding to the syntactic analysis.

3.1 Sample selection for analysis

The number of comic book publishers is rising significantly in India as discussed in the introduction chapter. However most of their published comic books are in English language. Few publishers have recently started translating their primarily English language comics into Hindi language to cater to the large Hindi speaking population (especially in North India). With the current scenario of comic book industry in India, the following criteria were created to collect the desired samples:

- a) *Only Hindi language (in Devanagari script) comic books should be chosen* — The samples have to be published in Hindi language because it is one of the main official languages of India and provides a fruitful ground to study Indian comics published in India in an Indian language. Also, the researcher's understanding of Hindi language is better than other Indian languages which assured to read and understand the samples fairly better.
- b) *The publishers with more than a decade of active publishing history should be chosen* — Currently There are more than 20 comic book publishers in India. All the publisher's portfolios were scrutinized in order to select comics in Hindi but as mentioned previously, most of them published English comics thus leaving few Hindi active publishers who are still publishing comic books.

- c) *The comic books should be from Superhero, Action and Adventure genre* — The major genres in which Indian comics books are publishing is Superhero, Action, humor, mythology and history. There are other genres in minority though like horror, science fiction, fantasy, slice-of-life etc. The Superhero and action genre involves significant amount of action depiction and fight sequences that leads to the employment of more number of SSW compared to the other subtle genres (like humor, drama etc.) thus the possibility of collecting more SSW increases.

These 3 criteria allowed to segregate the samples from the large number of publishers and their titles available.

The publishers with Hindi comic books were sorted from all the Indian publishers. Among all the 20 plus publisher's portfolio scrutinized it was found that only 4 publishers embody a portfolio of large number of Hindi comic books and with more than a decade of publishing experience and presence. These 4 publishers are: Raj Comics (founded in 1984), Indrajal Comics (founded in 1964), Diamond Comics (founded in 1978) and Amar Chitra Katha (founded in 1967) or ACK (Dey, 2016). Among these publishers, only Raj Comics was chosen for the analysis because the range and variation of SSW in Raj Comics was found to be deviant than the other 3 publishers. Raj Comics exclusively published in the genre of Superhero and Action that provided the opportunity to collect large number of SSW signifying different actions. Also, Raj Comics have remained in existence for more than three decades, hence it was possible to observe the shift in patterns (if any) in the visual style of SSW across a long span of time. The other two publishers except ACK, have a shorter history compared to Raj Comics and they are not in a functional state of publishing. This does not mean that their comics does not contain SSW. But they do not present a varied range of SSW required for the study and the criteria fixed. Adding to this, the other 3 publishers largely published in genres other than Superhero and Action. However, in the initial stages of sample collection to create a diverse sample group, SSW from the other 3 publishers were also collected and

included in order to visualize a broader picture of Hindi comics. However after initial level of observation it is considered that the samples from the other 3 publishers is not proving any interesting deviations for analysis.

The SSW are collected across 4200 pages of Raj Comics from 100 popular titles (see appendix 1). and the total number of SSW coded was 1620 Raj Comics has created almost 8-10 mainstream popular characters (*Nagaraj, Dhruva, Doga, Parmanu, Bheriya, Shakti, Anthony, Yoddha, Inspector Steel, Tiranga*) which primarily creates the Raj Comics universe. There are some other modest characters (*Gamraj, Bankelal, Fighter Toads*) which are less popular than the mainstream characters and their genre is also different (mostly humor). The samples are therefore further focused and collected from the most popular characters of Raj Comics. The narrowing of the sources for sample collection is also performed after fixing that these popular characters are representative samples of the whole Raj Comics Universe and also to the Superhero genre of Hindi comics in India. The titles were published from 1993 to 2015 thus allowing to study and analyze the SSW across a long timeline.

After fixing the publisher from which samples are collected, it is required at this point to present a short note about the visual style of the 4 different publishers and how they differ from each other. This will help to clarify the sample selection process in a further detailed manner.

3.2 A note on Visual Styles of different publishers

There are stylistic difference in the ways SSW is drawn across each publishers. The visual style of a comic book publisher is defined by the artists and their techniques and also vice-versa. Once the publishing house reaches an extent of popularity among masses, they strive to continue similar visual styles of drawing. The visual style difference is thus discussed in brief below.

3.2.1 Raj Comics

Raj Comics primarily publishes in the genre of Superhero comics. It consists of SSW in a variety of styles drawn in both hand-lettered as well digital typefaces as it is being published for more than 3 decades. Over the years the hand-lettered SSW are being used less in number though and shift has been observed towards digital typefaces (which are not meant to be used as SSW). The contrast between hand-lettered and digital typefaces is evident as hand-lettered SSW displays a more creative and dramatic nature than the rigid appearing typefaces. Visually, the hand-lettered SSW have a more *comicky* feel to the words than the digital typefaces. The digital typefaces somehow appears to be aesthetically 'odd' when surrounded by drawings which appear organic and natural. Figure 3.4 shows the SSW variations used over the years. From extreme left, the SSW is from comics of early 80s while moving towards the 90s SSW in the middle and the latest SSW (in digital typeface) in the extreme right.



Figure 3.4 SSW in Raj Comics

The SSW employs different possible combinations of word colors, letter weights and orientations and thus the visual style of Raj comics is very different among each titles and artists.

3.2.2 Amar Chitra Katha or ACK

ACK's comics did not have much SSW except their issues of *Tinkle* and other children titles which are also low in frequencies. They primarily publish material in English language thus finding Hindi SSW is difficult in it. Adding to this, ACK's popular mythological and historical titles contains rare number of SSW. During an interview with the editor of ACK, the editor stressed that using SSW in mythological and historical stories removes the realistic nature of the stories and makes the comics appear more *childish* (Puri, Significance of Sound Effects in Amar

Chitra Katha, 2015). The whole practice of employing SSW in comics stands in stark contrast with other Indian publishers that uses SSW in action comics.

3.2.3 Diamond comics

The frequency of Diamond comics has declined significantly and now it does not produce any new titles. It mostly publishes the old comics along with some other materials for children. The samples from Diamond comics were also collected and studied however, they do not provide any drastic variations and mostly maintain a consistent visual style of SSW among all the titles. The visual style of the SSW is prominently and widely black colored, heavy weighted letters with clean aesthetics and without any fancy coloring techniques. The clean aesthetics in the panels harmonizes well with the drawing of the images also. However, lacking any variations of SSW leads to employ similar style of words for all the sounds irrespective of the nature of the sound (loud or soft). Figure 3.5 shows some of the SSW that are drawn signifying different sounds. The visual style of drawing the words is similar in all the instances.



Figure 3.5 SSW in Diamond comics.

3.2.4 Indrajal Comics

Indrajal Comics is in a similar state of business like Diamond comics and not much variations and range of SSW has been found in its titles. Even though Indrajal Comics is one of the oldest publisher in India, the number of SSW is lower compared to Raj Comics and displays a monotonous style across all the titles. The SSW were all hand-lettered with either black color or hollow letters with black outer stroke only. Different sounds were represented by similar styles without any variations. Figure 3.6 shows some of the SSW in that displays a monotonous visual style. In many instances, the hollow SSW totally merges with the background making it difficult to read or even identify the word.



Figure 3.6 SSW from Indrajal comics.

It is therefore evident through this brief discussion that the visual style among these 4 publishers is significantly different. Finally, Raj Comics emerges as the definite contender for sample selection as it presents a varied range of visual styles with large number of SSW. The visual styles also brings forward another significant consideration for the analysis that decides the findings of the coming chapters. The difference in hand-lettering and digital typeface is an important point to consider while the analysis as it can change the syntactic attributes depending on whether SSW is hand-lettered or digital. It is discussed and reflected in the coming section.

3.3 Hand-letter and Digital typeface

The samples consisted of titles that are published before and after the introduction of extensive digital coloring in the comics industry therefore, the SSW are created through hand lettering as well using digital typeface. The hand-lettered SSW are those which are drawn by hand (ink or pencil on paper) and only the color is done digitally whereas digital typefaces are predefined digitally created letterforms. Even before the digital process came in Indian comics industry, coloring was done digitally. Coloring is the secondary process to finalize the print of the comics after the inking of the letters is done. After the introduction of software, both the process of drawing/inking and coloring became digitally possible.

The availability of digital typeface gradually has become the industry standard with less number of designers preferring hand lettered SSW. However, the difference in both the techniques is stark and contrasting. Figure 3.7 shows 2 panels from the samples to understand the differences among these two modes. Both the panels shows the character (Doga) shooting a gun. The SSW used for the gunshot is *Chyoom*, which is commonly used for the character of Doga mostly. The SSW in panel 3.7-a is digital typeface. The panel 3.7-b contains the same SSW in the left near the gun shot but it is hand-lettered and colored digitally. Now, looking from

a formal perspective, firstly the SSW in 3.7-a has a light weight with a white color in it. Secondly, its placement is such that the SSW is squeezed between the speech bubble and the head of the person being shot. The left side of Doga is plain and empty background with a green gradient. Instead of using the tight spacing, the left side space would have allowed the SSW a bigger size and thus making it more visible and distinct even though having a white color (which is contradictory to the color theory of warm colors for violence and action). Also, the SSW ends with two exclamation marks which totally lacks purpose and their function is not clear. Overall, the digital SSW in 3.7-a is less interesting and employs visually weak signifiers.



Panel 3.7-b contains the same word *Chyoom*, hand-lettered but colored digitally. It has bright red gradient that appears harmonious with the action being signified. The letters are heavy weighted and tilted towards the point of origin (the gun). The red gradient is also repeated in the second SSW (in the right) and in the background. The SSW and its visual style appears to be harmonious with the rest of the image. Unlike image 3.7-a where the digital typeface and the hand drawn image appears to be in an uncomfortable visual conflict, here in 3.7-b, the SSW blends with the image and creates a sense of totality in the panel.

Another example is shown in figure 8 where the sound of a siren is shown through the SSW. The word reads *Voo Voo* in Hindi. Figure 3.8-a has a digital typeface SSW in a small size and oriented such that it almost merges with the background tree branches making it difficult to read and locate. The placing of the SSW, if in case would have been extend till the middle of the panel, it would be easy to locate it and read it. Contrary to this, the SSW in 3.8-b is hand drawn and has a wavy warping with red color and smaller to bigger letter size. The wavy warping produces the effect of sound floating in the air and the ascending letter size helps to signify the gradual rise of the sound as if approaching towards the character. Overtly, the hand-lettered SSW appears more harmonious with the image and the signified sound in contrast to the digital SSW.



Figure 3.8 a) Digital SSW b) Hand lettered SSW

Similar differences are found among the samples between both the modes of SSW creation and helps to conclude that hand-lettered SSW is better in signifying the sound and also aesthetically more appealing. One major limitation of digital SSW is in the fact that there are no typefaces available which is specifically developed for sound effects in Hindi comic books. So far, fonts like *Kruti Dev 500*

and its font family is being used for SSW. This font is not meant to be used for sound effects and has a different purpose altogether (i.e. meant for official document text purposes). Undoubtedly, digital mode of SSW has many advantages over hand-lettered. Applying different effects and variations are quite feasible in this mode. Multiple explorations are also possible through this. Unlike the traditional hand-lettered mode which has constraints in editing and variations, digital typefaces do not have such restrictions.

While it is a matter of debate regarding the advantages and disadvantages of digital typeface versus hand-lettering, however it should be decided on the contextual level and based on the quality of resemblance of the SSW with the sound. The advantage of hand-lettering can be attributed to the idea that it is more flexible and spontaneous as compared to the digital typeface. It can be created simultaneously during the process of drawing a panel. Whereas digital font requires to be composed in later stages while coloring. The master of expressive comic book titles and lettering, Will Eisner states that 'Graphically' treated lettering acts as an extension of the imagery. It creates a mood for the story and implies sound (Eisner, 1985). He demonstrates examples to draw letters, titles and sounds as images to be more expressive. This type of practice is required for hand-lettering SSW to appear more expressive which is currently not found in India comics.

As mentioned before, digital typefaces that are used for the SSW are not originally meant to be used for SSW and therefore when used inside panels, appear to be alienated and creates an aesthetic disconnect between the sound and its representation. The digital typefaces are at many instances found to be tweaked and distorted digitally to create certain effects but without much success. Figure 3.9 shows some of the digital typefaces used for SSW that are distorted to create some weird and unconvincing effects.



Figure 3.9 Digital typeface distorted for the purpose of SSW

In typographic practices, tweaking, squeezing or stretching a font is considered to be an unprofessional practice. However, among the samples it is found that most of the digital typefaces suffered due to this practice. This is primarily due to the lack of a digital typeface that is exclusively meant for Hindi SSW. Without the availability of a digital typeface, the designer is lead towards using a different typeface and finally distorts it to achieve an effect which doesn't add any value to the representation, neither aesthetically nor semantically.

Hand lettering is thus found to be better as the visual style of the SSW can be drawn according to the visual style of the image. Digital typefaces not meant for SSW appears weird and fails to harmonize with the image. Here a big opportunity lies for designers to create digital typeface meant for SSW and digital images of hand-lettered fonts for SSW that could be readily used inside panels.

Through the discussion so far, it has been shown that the process of SSW creation is not arbitrary and requires a proper understanding discussed in the 5 stages. Once the understanding is achieved, the objectives were defined and the selection of the samples were justified based on the criteria defined. Now, prepared with the understanding of the samples the syntactic and semantic analysis is proceeded through section 3.4 and 3.5 respectively.



3.4 Syntactic Analysis of SSW

The samples from each title were counted as per their appearance in the comics. Each page of a single title was checked to segregate the appearance of any SSW. While collecting the samples, the syntactic attributes which were being observed as per their appearance are noted and in this process 15 categories emerged under which the SSW were grouped. During the observation it was also found that mostly onomatopoeic words are used in the samples and any words for signifying feelings or emotions are not used. Thus all the SSW represented sounds from an audible medium and do not contain any inaudible sounds and its representation.

3.4.1 Syntactic attributes of SSW

The 15 attributes that emerged from the observation are shown in table 3.1. Each attribute is further scrutinized in order to identify the values that exist within a single attribute. All the values are then assigned numerical codes to classify each sample conveniently in to the categories.

Table 3.1 The syntactic attributes and the values

Sl. No	Attributes	Values		COD E
1	Word Color	Solid Fill	Pink	1.1
			Blue	1.2
			Red	1.3
			Magenta	1.4
			Cyan	1.5
			Black	1.6
			Yellow	1.7
			Orange	1.8
			White	1.9
			Green	1.11
			No color	1.12
		Gradient	Single color	1.21
2	Outer Stroke	Single Stroke		2.1
		Double Stroke		2.2
		Multiple Stroke		2.3
		No Stroke		2.4
3		Adjoined		3.1

	Drop Shadow	No Shadow	3.2
4	Texture	Texture	4.1
		No texture	4.2
5	Weight	Heavy	5.1
		Medium	5.2
		Light	5.3
6	Shirorekha	Continuous	6.1
		Discontinuous	6.2
		Distant	6.3
		Absent	6.4
7	Diacritic	Joined	7.1
		Disjoined	7.2
		No Diacritic	7.3
8	Grouping	Welded	8.1
		Disjoined	8.2
		No Grouping	8.3
9	Letter Overlap	Single letter	9.1
		Multi-letter	9.2
		No overlap	9.3
10	Warping	Upper arc	10.1
		Lower arc	10.2
		Wave	10.5
		Peephole	10.6
		No Warping	10.7
11	Mode	Hand-lettered	11.1
		Digital	11.2
12	Perspective	One point	12.1
		Two point	12.2
		No Perspective	12.3
13	Orientation	Horizontal	13.1
		Vertical	13.2
		Angular	13.3
14	Position	Thought bubble	14.1
		Speech bubble	14.2
		Single Panel	14.4
		Multiple panels	14.5
15	External Supportive Element or ESE	Present	15.1
		Absent	15.2

Each of these syntactic attributes are discussed in the following sections.

3.4.2 Word Size

The proportion of the SSW with respect to the panel is an integral attribute for desired effect. Depending on the size of the SSW the reader could judge the impact of the action. As shown in figure 3.10-a, the SSW fills the entire panel and creates a greater impact of the bullet shot (*Chyoom*). Being bigger in size, the color red attracts attention and also helps in emphasizing the violent action shown in the panel. The External supportive element, the flash lines, surrounding the SSW adds additional effect signifying the strength of the action. In the second panel of figure 3.10-b, the SSW (*Khatti*) is contrastingly smaller in proportion to the panel. It signifies the sound of a lever being pulled down quickly. The action is subtle and fast and thus the smaller size of the SSW appear justified. The word size is an important syntactic attribute to consider as they directly influence the intensity of the sound being represented.

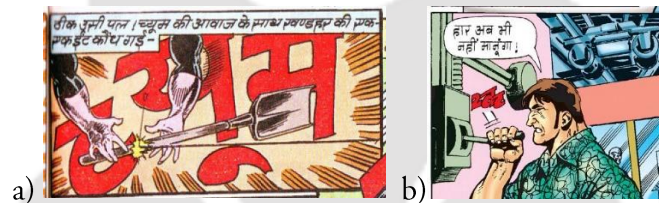


Figure 3.10 Different sizes of SSW used in different context.

With this final syntactic attribute, the observations and analysis of the samples is concluded leading to reflect on one more aspect identified from the samples. The category of emotions and feelings signifying SSW is found to be missing in the samples and it should be acknowledged at this point further in the next section.

3.4.3 Weight

The weight of the letter is defined as the thickness and thinness of the letters that contributes to the visual heaviness of the letters and finally the SSW. Three values of the weight are found: heavy, medium and light. SSW with medium weight are maximum in number, 48.8% followed by heavy weight, 27.26% and light weight, 23.84%. Figure 3.11 shows examples for the three weights in the samples.



Figure 3.11 SSW with different weights: heavy, medium and light (from left to right respectively).

The heavy SSW contained letters with thick letter strokes, small letter spacing, smaller counters of the letters and appearing to be blocky visually. The medium weight SSW usually contained more counter spaces in letters with thinner strokes than the heavy weight SSW. The light weight SSW had thinnest strokes and had big counters and large letter spacing. Due to their thinness and light weight, they often appeared as written text (like in the last image of figure 3.11).

Visually, the heavy and medium weight SSW appear to be more suitable for superhero comics because of their resemblance to big and loud sounds. Adding to the resemblance, heavy SSW also displayed word colors effectively and the SSW appeared distinct in the image. The thin weight SSW however is better to be used to signify sharp, swift or subtle sounds. In the samples, most of the thin weight SSW were digital fonts. In digital typefaces the options for bold, medium and thin are easily available but in case the typeface doesn't have these options then only the default regular weight has to be used which leads to compromise on the resemblance quality of the SSW.

Different weights should be used according to the loudness of the sound which was not found consistently in the samples. Devanagari typefaces without different weights poses a challenge to create different weights and thus limiting the designer to use the default option available.

Most of the samples displayed a preference towards employing heavy weighted letters irrespective of the intensity of the sound. In case a designer uses a typeface for SSW, the absence of different weights creates a limitation to employ different weights. Thus, the typeface which is being used for SSW should also be a point of concern for the designer for the proper signification of the sound.

3.4.4 Word Color

The colour of the SSW is the first syntactic attribute that is observed which is used in all of the samples. Color is an important syntactic attribute as it has the quality to attract attention of the reader effectively and also it is significant for expressing emotions. For instance, a page colored in bluish tone will emit a calmer and colder effect whereas red coloured page would mean contrastingly different emotions (Furino, 2016). In the samples also color emoted strong expressions depending on the action and context depicted.

A dominant percentage of red is found among the samples, with minor appearance of yellow, blue, green, white and black. Red is the most used color in the samples with 52.2%, followed by white, 12.2% and Black, 8.3%. The dominance of red is attributed to the fact that red is the most intense color and also stands for pain, scream, fear, loudness and similar emotions (Burchett, 2002) (Nummenmaa, 2014). However, when there is an action showing water splash or any cool-liquid splashing sound, mostly blue color is found. Thus, in these instances the color of the SSW is based on the physical nature of the sound.

Color is further divided in two values: Solid fill and Gradient. The solid fill word colors contain a single color uniformly filled in the words. Whereas, the gradient filled words contained a mix of different colors. In the samples from early 90s, SSW are mostly found in solid flat colors (hand colored) whereas the post 2000, comics uses the combination of both gradients and solid fills (due to digital ease of application). Figure 3.12 shows the use of different colors in some of the samples.



Figure 3.12 Some examples of color in SSW: (a) Solid fill red, (b) Gradient of orange and red (c) Solid fill white.

Color is affected from 2 aspects of the page design. First is the kind of action being represented that affects the choice of color in the SSW. Second is the color of the image in the panels that affects the color choices. Mostly it is noticed that the

more contrasting color combination is provided between the SSW and the image, the more distinct it appears from the image. Thus reducing the saturation of the color reduces the emphasis on the SSW. Even in instances where the SSW is hollow with just outer stroke, the emphasis on the SSW is least as the background color is seen through the word.

3.4.5 Texture

The texture of the SSW is a syntactic attribute which is seldom used in Hindi comic books. 98.14% of SSW did not use any texture while only 1.85% of SSW used some texture. In the digital typefaces, it is very difficult to include texture as compared to hand-lettered SSW. In the recent comics that uses typefaces for SSW, there are not texture used. The only few examples were found for samples from before a decade.

The texture can be employed to depict different types of effects and feelings. As shown in the figure 3.13-a, the first SSW is given the texture of the wall itself. Thus it appears to be merged on the wall and the punch is shown visually breaking the SSW and coming through. This kind of effect can bring the SSW in the diegetic world and can be used to communicate with the characters as well. As there can be range of color for SSW, similarly there can be a range of textures that can be used for different sounds. The texture can be in the form of solid fill or as a gradient as in the second example of figure 3.13. Some of the examples of texture can be grunge, grunge gradient, half-tone, splattered etc.



Figure 3.13 SSW with textures

As the printed medium solely relies on different types of lines, and techniques to represent the sound, texture is an important technique to achieve this. It is especially helpful for sounds representing animals, birds or explosion which can be depicted

by using different textures inside the words. For this the word requires to be thick to include the texture in it.

Textures can be used for interesting visual effects that resembles the textural qualities of a sound. The tacit nature of different surfaces can be visually achieved through different lines and techniques. For example, animal sounds can have textures resembling to that animal or an explosion can have a broken texture in the letters. However, any explorations in texture is not seen in recent samples therefore creating a possibility to explore new styles of texture for SSW.

3.4.6 Outer Stroke

Outer stroke is the outline of the SSW and could be found in different variations from single stroke to multi-strokes with various thickness. Among the collected samples it is found that most of the SSW has a single outer stroke. SSW using single stroke are the most, 88.6% followed by SSW with no outer strokes, 8.7% and double stroke, 2.2%. The color of the outer stroke in most samples is found to be black. The essential function of the outer stroke is to separate the SSW from the background in the panel. For instance, a SSW in red color with no outer stroke and placed against a red background will be hardly visible. Once a black or white colored stroke is applied, it immediately segregates the SSW from the image. In case of no outer stroke the distinction is further less whereas with thicker outer stroke the distinction is much higher.



Figure 3.14 SSW with thin and thick outer strokes

The visibility of the outer stroke is directly proportional to the thickness of the stroke. Figure 3.14 shows two samples having thin and thick outer strokes. The thicker outer strokes fill the counters of the letters making the words appear more filled.

The color of the outer stroke is also simultaneously identified with the value. The color of the stroke is related to the thickness of the stroke. A thin stroke provides less chances of adding color to the stroke whereas a thick outer stroke could be easily filled with color that is easily identified. As shown in figure 3.15, the SSW have different stroke colors: black, white and blue respectively. As compared to the black stroke color, white and blue are more visible mainly due to their thickness and their contrast with the background. This could be attributed to the stroke thickness of the word. Moreover, for coloring the outer strokes, complimentary color schemes will be more helpful to create a contrasting word than using harmonious colors.



Figure 3.15 SSW with different stroke colors

The outer strokes are important because they effectively make the SSW distinct from the image and creates a sticker like effect for the SSW. Employing different colored multiple outer strokes is also an interesting (but rarely used) possibility and create a reverberating effect.

Double outer strokes are less in percentage but they too are helpful to create a sticker like effect to the SSW that makes it distinct. Possibilities include for creating SSW with multiple outer strokes with different colors and also explore possibilities for texture variations in the outer strokes.

3.4.7 Drop Shadow

The drop shadow is the shadow created by the SSW depending on imaginary source of light. It can be either attached with the SSW or may be present at a distance. Shown in figure 3.16 are few examples of drop shadows that are attached to the SSW. SSW not using a drop shadow were in highest percentage (94.2%) followed by SSW with adjoined shadows (5.7%).

The drop shadow is effective in signifying a floating effect of the word as well providing depth and distance between the SSW and the image. The farther the shadow is from the word, the more it appears to be floating and distinct from the image plane. In the samples, the drop shadows are always found to be attached with the word. Also the color of the drop shadow is always found to be black. Any other use of shadow color is not found.



Figure 3.16 SSW with adjoined drop shadows

Form the samples, figure 3.16 shows examples of drop shadow used in SSW. The use of drop shadow provides a distance between the image plane and the SSW. If the shadow is falls on the image plane and is not distorted by the presence of any other object then it signifies that the SSW is external placed from the diegetic space of the panel. However, if the shadow is distorted by the presence of any object (like the shadow falls on a sphere and appears rotated), then the SSW enters into the diegetic space of the panel and interacts with the image elements. In this way, keeping the drop shadow distinct or distorted makes the SSW part of the image plane or the diegetic plane.

SSW for sound appearing in skies or air also has different connotations attached. In those instances the drop shadow kept distant from the word create a greater distance and feel for an aerial sound. In case of sound appearing near any surface (ground, walls or water etc.) the drop shadow is kept closer for creating an effect that the sound is near and confined than the aerial sounds.

3.4.8 Shirerekha (Topline)

The Shirerekha is defined as the head-line joining the individual letters in *Devanagari* script (Dalvi, 2009). Four types of variations (figure 3.17-a, b, c, d) are identified in this context: continuous, discontinuous, distinct and absent. The continuous Shirerekha is found in the conventional system of Devanagari writing.

This is used in SSW also (fig. 3.17-a). The discontinuous Shirorekha is used partly over some letters and the rest of the letters are used without it (fig. 3.17-b). The distinct Shirorekha is used over all the letters however they are not joined with a continuous line (fig. 3.17-c). In the fourth instance the Shirorekha is totally absent (fig.3.17-d). Discontinuous Shirorekha was used by SSW mostly, 50.96% followed by continuous Shirorekha, 32.54% and Absent Shirorekha, 9.42%.

Unlike diacritics, Shirorekha is a simpler structural feature of Devanagari script that provides a unique identity to the script. It joins the letters and forms a whole word which is contrastingly different from Latin script.



Figure 3.17 SSW with variations in Shirorekha: a) Continuous b) Discontinuous c) Distinct d) Absent

The Shirorekha is one of the features of the Devanagari script that gives a unique visual identity to the words. In the regular texts of magazines and newspapers, the Shirorekha is always present but the SSW in comics are exceptional cases where the Shirorekha is found to have so many variations. The Shirorekha, if considered as an external element to the SSW, can be played upon in various ways. It can be given different shapes, sizes, form etc. while retaining the initial meaning of the Shirorekha. Making the Shirorekha absent can give the letters more flexibility and freedom to move in the space and helps in the creative arrangement of the letters based on the sound.

Shirorekha is a structural feature in the Devanagari script and few other Indian languages share the same element like Bengali and Assamese. While in the reading text it is an important feature to make the letters distinct and make reading faster, in the case of SSW, since they are mostly single letters, shirorkcha can be completely removed also to treat the letters more flexibly and creatively.

3.4.9 Diacritics

Diacritics in Devanagari script are the *matras* and joineries that are added to the letter to alter the pronunciation. Whether the SSW will have diacritics or not depends on the linguistic choice of the word firstly. In figure 3.18-a the SSW does not contain any diacritic because of its linguistic representation and the way it is spelled. Similar words like, *dhadaam*, *bhadaam* and, *fataak* etc will also not have any diacritics. Figure 3.18-b shows a SSW with joined diacritics which is standard practice while writing also. Whereas figure 3.18-c shows a disjoined diacritic which is not joined with the letters.



Figure 3.18 SSW with (a) Word without diacritic (b) Joined diacritic (c) Disjoined diacritic

Diacritics are another special structural feature of Devanagari script that is found in other Indian scripts also. While the presence of diacritics depends on the choice of word, the creative exploration depends on the sound and the designer. It is possible to include diacritics in imaginative ways such that they also become part of the image. They can be creatively drawn and distorted depending on the type of sound signified. Possibilities also exist to use them as swashes similar to swashes used in calligraphy.

3.4.10 Grouping

The grouping of the letters was found to be in two values: welded and disjoined. Figure 3.19 shows different types of grouping found in samples. In figure 3.19-a the whole body of letters appears to be a seamless image as there are no outlines that distinguishes each letter. The interior of the word is without any outlines. The diacritics also do not have any distinct joineries and merges in the Shirorekha. Whereas, the disjoined letters in figure 3.19-b are distinct set of letters that have distinct outlines to define each letters. Each letter and Shirorekha stands as a separate part and evidently distinct from the following letters. The disjoined

grouping of SSW was highest, 48.96%, followed by welded grouping of 41.61%. Rest of the SSW had no grouping as they were symbols (question marks or exclamation marks), hence the value of grouping does not apply on the symbols.



Figure 3.19 SSW grouping: a) Welded b) Disjoined

In the traditional writing system of Devanagari, the letters are joined with Shirerekha to form a word. In Devanagari script, if the letters are disjoined, then they are treated as separate words. In case of SSW this appears to be an exception that when the letters do not form a single body of the words, still they are recognized as one word and read as a single unit. Grouping in the digital lettered SSW helps to fill colors faster as it quickly helps in the selection of the interior area and apply color as compared to when the letters are ungrouped and each letter has to be selected for filling color. Possibilities include in creating Disjoined SSW so that the letters can be freely placed and creatively explored in the image.

3.4.11 Orientation

The orientation of the SSW is the angle and alignment at which the letters or the whole SSW is placed inside a panel. Horizontal, vertical and angular orientation is found in the category of orientation. Among the samples, 50.5% of SSW were in horizontal orientation, followed by 33.83% with angular orientation and 15.63% with vertical orientation.



Figure 3.20 a) Horizontal orientation b) vertical orientation c) angular orientation

Figure 3.20 shows the values of the orientations among the samples where in 3.20-a the SSW is horizontally placed, in 3.20-b the SSW is vertically placed and read from top to bottom and in 3.20-c the SSW is placed in an angular orientation. The horizontal orientation is commonly found in all regular reading text. The orientation decides the reading pattern of the words. For instance, in the vertical orientation figure, the word is read from top to bottom and this will be effective if the explosion is also shown starting from top to bottom. However, a constraint posed by vertical orientation is to maintain the continuous Shirorekha that will not be possible in this orientation and thus has to be broken. The angular orientation also helps to infer the direction of the sound depending on the reading pattern of the SSW. Among the samples, there is a diverse range of orientations found that effectively conveys the direction of the sound.

3.4.12 Letter overlap

The overlapping of letters creates an effect like objects are toppling and crumbling on each other. It also helps to create distance within the image depending on whether the first letter is overlapped on top or sent to back and overlapped by the last letter. Two values are found in overlapping category: single letter overlap and multi-letter overlap. SSW with no overlaps of letters were highest with 89.72% followed by Multi-letter overlap, 7.35% and single letter overlap, 2.92%. Figure 3.21-a shows a single letter overlap with the middle letter and its '*akaar*' overlapping the third letter. In figure 3.21-b multi-letter overlapping is shown with the first and the last letter overlapped on the middle '*akaar*' shows the overlapping styles of SSW.



Figure 3.21 SSW with different letter overlapping (a) single letter overlap (b) multi-letter overlap

Single letter overlapping depends on the type of sound it is representing. Whereas multi-letter overlapping is appropriate for the use of explosion, collision

and similar actions. The multi-letter overlap is also similar in functioning and it's a creative technique (like graffiti lettering) that gives the words a singular form and makes the look interesting. This attribute is also difficult to achieve in digital typefaces as overlapping will require each letter to be typed individually and then arrange them. Hand-lettering in this case is more effective and faster. However, there is a possibility of creating interesting fonts based on the overlapping technique because the overlapped letters have an unusual visual style to them that is distinct from the conventional style of writing. It will suit in the context of comics better.

3.4.13 Warping

Warping is primarily done by bending and distorting the SSW out of its usual linear shape. The different values of warping found are: Upper arc, Lower arc, Wave warping, Peephole warping (or fish eye projection). Figure 3.22 shows all the values of the warping found in the samples. Among them, 84.93% of SSW did not use any warping followed by 8.56% SSW using upper arc only, 1.52% using lower arc, 3.99% SSW using Wave warping and 1% using peephole warping.



Figure 3.22 Warping of SSW (a) Upper arc (b) Lower arc (c) Wave (d) Peephole

Warping is effective to convey a sense of directionality of motion and intensity of sound by twisting/bulging the otherwise static appearing words. In figure 3.22-b the lower arced words help to convey the source of the sound coming from the top and it appear as if the words are getting pushed by the explosion. The wave arc is helpful to convey sound which have a floating quality like siren or flute sounds. The fourth value, the peephole arc was lowest in number as it requires specific context

Here also, warping in digital typeface requires few technical steps to convert the regular text in a warped text. Through hand-lettering it is easy to create warped letter and draw flexibly than typefaces.

Inside the panels, there are various positions and elements where the SSW can be placed depending on the effect and intended meaning. The sample SSW are found inside: thought balloon, speech balloon, inside single panels (including SSW crossing panel border) and across multiple panels. Among the samples, 88.39% of SSW were positioned inside single panels, which means that the SSW was only present with the image and not inside other elements like speech balloons or thought balloons. Further, 7.2% were placed inside thought bubbles and 2.21% were positioned inside speech bubbles and 2.2% are found across multiple panels.



The different positions are shown in figure 3.23. Figure 3.23-a shows a panel with an exclamation marks inside a thought balloon. Exclamation mark is not a

word but a symbol used of expressing surprise or shock. Placing it inside a thought balloon signifies that the character is in a state of surprise and astonishment which is further confirmed by the character's facial expression. In figure 3.23-b, the telephonic conversation is shown inside the speech balloon and the dialogue breaks with a SSW '*KADADA*' signifying the breaking of the telephone connection. Figure 3.23-c shows the SSW inside single panels that solely is attached with the image and is not placed with any other element. Figure 3.23-d shows panels where the SSW is placed across two panels. The SSW reads as '*Dhad dhad dhad*', a word to signify sound of an engine or motor. In the first panel the actual source of the sound is not known/seen but it is only confirmed in the second panel that the character Dhruv has arrived to rescue the policeman in his motorcycle. The first panel creates a tension in the narrative regarding the policeman getting hit by the monster, but the SSW lets the reader know that somebody is arriving to rescue the policeman which is validated in the next panel. The SSW here firstly acts a sound effect and secondly it leads towards the next panel and creates a narrative sequentiality between the panels.

While the position of SSW in single panels is the most common trend, its positioning in other elements can help to signify deeper level of meanings and can connect the narrative in interesting ways. Possibility also includes to use SSW inside Narration boxes to create interesting effect through the narrator's voice. For positioning SSW inside speech balloons or narration boxes immediately shift the SSW from the image space to the diegetic world of the characters. For instance, if the SSW is present inside the narration box along with narration, it would mean that the sound is not originating in the image rather it is implicitly happening in some other space from where the narration is coming. Similarly, when a character is describing something with sounds, placing the SSW would mean that the sound is a part of the person's dialogues and event rather than actually happening inside the panel action. These possibilities are least explored in the samples and mostly

common trend is followed throughout the samples. Thus, there lies an opportunity to include the SSW in the narrative of the panel through different positioning.

3.4.15 Perspective

Perspective in the SSW helps to provide a visual effect of rotation in space and based on the type of perspective (one point or two point) seems to be receding or advancing towards the reader. In the samples however, the use of perspective is far less compared to other syntactic attributes. Among the samples, SSW using no perspective were 96.93%, whereas SSW in perspective is only 3.06%. Perspective is difficult to draw but with practice and few basics it becomes easier. To draw the grid lines and draw the letters in perspective requires more time and skill which often holds the designer to use perspective in the words.



Figure 3.24 a) SSW in one-point perspective (b), (c) SSW in 3D perspective

Figure 3.24 shows some of the samples that uses perspective to show dimension of the words. In image 3.24-a, the SSW is *Juump*, with extra emphasis on the 'u' and 'm', the SSW signifies a long leap of the character kicking in the air. With regard to this action, the letters ascend towards the reader and break out of the panel. The first letter of the SSW starts near the right leg of the character and crosses the panel. This signifies the point of origin of the sound is near the right leg when the character started the action. The reading pattern also helps us in determining the action is coming from the back to the front. Here, the SSW do not show the dimension of the word and appears to be in 2D appearing perspective.

In figure 3.24-b the SSW signifies a huge explosion reading *Badaam*. The letters are in bright colors with harmony of the image color and action. The letters have a heavy weight to signify the expanse and loudness of the explosion. The letters are

oriented vertically in a top down reading pattern that further confirms the origin of the explosion from the top. The overlapped attribute of the letters signifies a crumbling effect of the explosion. The SSW is positioned such that it is behind all the other elements in the panel making it actually a part of the diegetic world of the action. The letters are drawn as 3D appearing words and it feels as if the words are actually floating in the story world and creates a convincing visual affect for the explosion. In figure 3.24-c, similar treatment of perspective is seen. The letters are drawn in perspective and showing the dimension of the letters that helps in conveying the floating characteristic of the SSW in space.

Perspective can also be achieved by placing the SSW either in foreground (on top of all the elements), middle ground (in line with other elements) or background (overlapped with other elements). These three planes allow the SSW to interact in the diegetic space and induce an effect of perspective in the image. Perspective achieved through these three planes is also not much explored in the samples which remains as a significant area to explore.

Perspective is thus found to be a highly unused syntactic attribute among the samples. It is a very important visual technique to achieve depth in the otherwise flat 2d image of the panels. It can create a sense of realism in the word and can make the word appear as a part of the story world. However, for the purpose of comic arts only one-point perspective SSW is sufficient to convey the desired depth and visual effect. Drawing the SSW in two point or more requires more skill and should be used only when the context demands specifically these type of perspectives.

3.4.16 External Supportive Elements or ESE

The External Supportive Elements or ESE are the external elements that are not part of the structural components of SSW. However, they are attached with the SSW and acts as additional signifiers for enhancing the meaning. The ESE most commonly identified in the samples are: flash stars, lines, waves and blinking stars. However, SSW not using ESE were highest, 92.86%, followed by SSW using ESE, 7.13%.



Figure 3.25 SSW with External Supporting Elements. (a) Blinking star (b) Motion lines (c) Waves (d) Flash star

There can be a number of ESE present according to the context. Figure 18 shows some of the ESE found in the samples. Figure 3.25-a shows (*Klick*) blinking stars that are mostly used in the context of machine sounds or any instantaneous sound (that happens very quickly in a *flash*). Figure 3.25-b shows the SSW (*Saay Saay*) inside motion lines. The motion lines are elements that when attached to an image creates the illusion of a moving body or object (Cohn & Maher, 2015). The motion lines are more effective when mostly used with the SSW that signifies a body or object in motion (like a swinging sword or speeding car). Figure 3.25-c shows the SSW (*Skriish*) with a wavy line that signifies the scratchy and uneven sound produced. 3.25-d shows a SSW (*Dhay*) with a flash star which functions similar to the blinking star.

Apart from the elements acting as ESE, there is a small letter 's' that also function as ESE. However it mainly enhances the duration of the sound and it follows the syntactical attributes like the rest of the letters in SSW. It is not a part of the Devanagari letter chart still it is widely used in Hindi SSW as a feature to elongate the sound. Even for sounds like screams, grunts etc. this letter is use in a repeated manner.



Figure 3.26 SSW using repeated 's' for elongated sounds.

Figure 3.26 shows examples of SSW that uses 's' in different positions of the word. The first image reads *Kreeek* and represents the sound produced by a flying dinosaur. The second image shows the sound of a car break that reads *Kriyaaaaa*. In the first image the 's' is placed in between the word to emphasize on the longer 'kre' while in the second image it is placed after the 'Kre'. Interestingly, 's' is only used either in between the letters or after the letters (like a suffix) and never before a word (like a prefix). Using it as prefix will make the word in the first image as '*sskreek*' and in Hindi it does not make sense while reading. It only becomes readable and meaningful only when placed between or after the word.

The ESE are interesting elements as they can enhance the meaning of the SSW and make it more dramatic. However, through the analysis it was found that most of the SSW did not contain any ESE and relied only on the word alone to signify the meaning. The function of each ESE also depends on its original function. For instance, the ESE motion lines are mainly used for objects and bodies in motion, similarly, flash stars or fight clouds have their specific connotations. When these are used in combination of the SSW the meaning is further strengthened and the visual effect appears interesting and meaningful.

3.4.17 A Note on Psychomimes and Phenomimes

Defining the broad category of Sound Symbolism, psychomimes consists of those words that are used to represent psychological sounds or bodily feelings. While phenomimes are those sounds which are used to signify non-auditory senses. In Japanese culture, especially in Manga, these two categories are variedly used and have a wider variations than in other culture (Kakehi, Tamori, Schourup, & Emerson, 1996) (John J. Ohala, 1994). Whether use of these two categories is really required or not depends on the context and the cultural practices of a particular language. In Indian context, readers of comics are not habituated to see or read SSW representing anger, sadness, touch or smell. Even while conversing and expressing there are rarely any words similar to Japanese culture that is used to describe inaudible sounds.



Figure 3.27 Question mark and exclamation marks used as psychomimes.

The only words or rather symbols used for psychomimes are ‘question marks’ and ‘exclamation marks’ which signify the state of mind. The category of phenomimes do not contain any symbols for SSW at all. Question marks are mainly used to signify a character’s confused state of mind. Also, the question mark is positioned only inside thought bubbles thus signifying the invisible status of a person’s psyche. Similarly, the exclamation mark is also used to represent sudden shock or a feeling of awe. This is again positioned only inside a thought bubble (figure 3.27). No other symbols or words are found as psychomimes or phenomimes.

The two categories are thus rarely explored in Indian comics. Comic arts is a creative medium where exaggeration and inventions of new words is necessary to create interest and fun in the images (like Don Martin’s funny and innovative word inventions). The use of any words for these two categories also depends on the amount and frequency of appearance in Hindi comics because with frequent use of some new words, the reader also becomes accustomed with them and is able to identify their meaning.

With the observation and analysis of the syntactic attributes appearing in the samples all the attributes are hereby defined as:

1. **Word Color** — The colours that are used inside the words. They are found in two values Solid fill and Gradient fill. It is important to use color according to the context and intensity of action. It helps to attract attention of the reader.
2. **Outer Stroke** — The outline of a SSW that can be either present (from single to multiple strokes) or absent based on the choice of the designer.

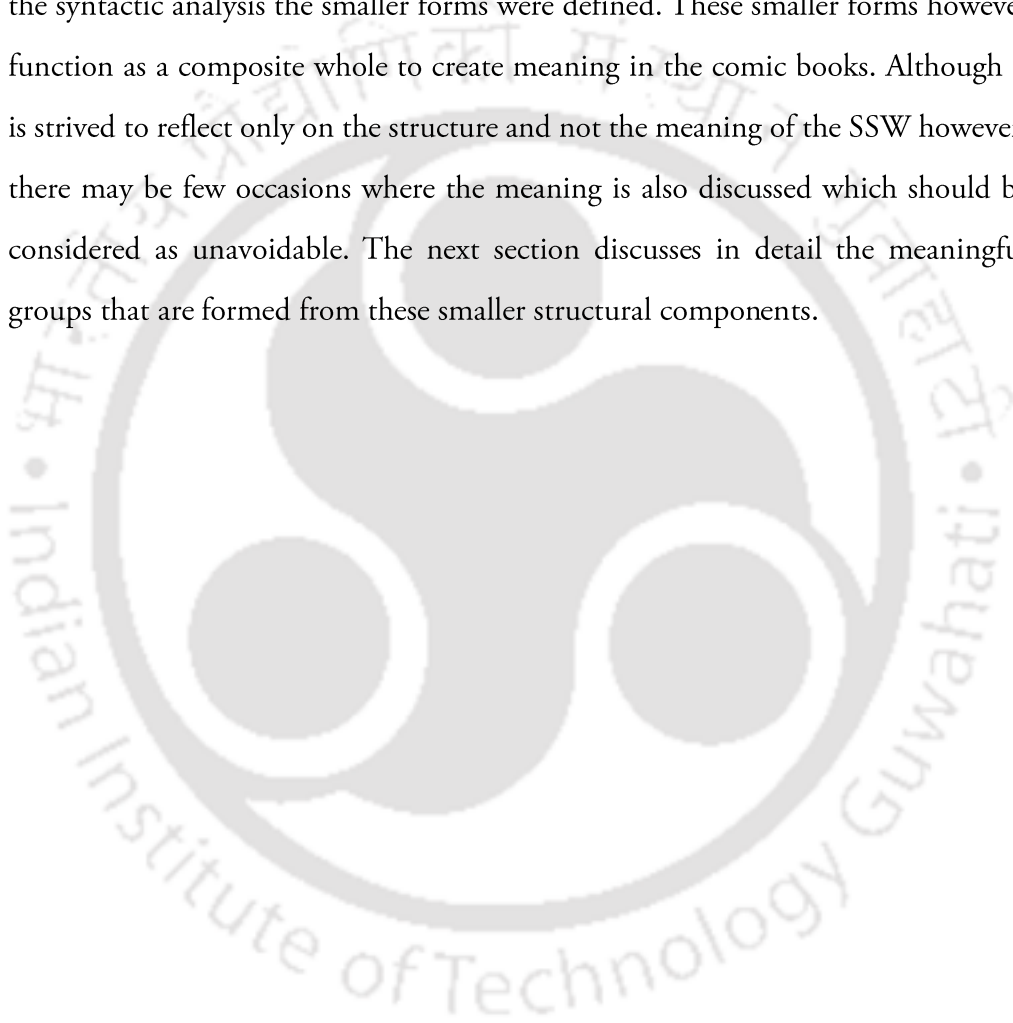
It helps to segregate the SSW from the image and makes it distinct. The thicker the stroke is, the more distinct it appears from the image.

3. **Drop Shadow** — The shadow of the SSW that falls on the background and can be attached to the word or kept at a distance. It creates a floating effect and provides depth to the word. Letting the shadow of the word to distort with the background object brings the SSW in the diegetic world and creates more interest.
4. **Texture** — The visual effects achieved through lines inside the letters of SSW in order to create illusion of different textural surfaces. It is easily achieved in hand lettering while it is difficult through digital typeface.
5. **Weight** — The thickness of the SSW that can vary from thick to thin and either denotes the softness or loudness of the sound.
6. **Shirorekha** — The top line that joins the letters of a word to create a meaningful unit. The breaking/elimination of the Shirorekha helps the letters to arrange flexibly in the composition in different orientations and this practice is unique in comic arts only.
7. **Diacritic** — The marks or symbols added to the letters that alter the pronunciation of the letter. Using diacritics is depending purely on linguistic considerations of the word. Similar to Shirorekha, isolating the diacritics helps in composing the words flexibly in the composition.
8. **Grouping** — The joining of letters in SSW with or without letter outlines such that without outlines the inside space is a single continuous space compared to a distinct space when letters are given separate outlines. The closer the letters are grouped, the more compact sound it signifies while the farther the letters are kept, it signifies a scattered sound. For quick coloring purpose, joined grouping is found to be the best.

- 9. Letter Overlap** — The placement of letters on top of one another to create an effect of tumbling and collision.
- 10. Warping** — The twisting of SSW in different styles like wavy, upper arc, lower arc and so on to give an effect of scattering, floating or disorientation. Warping the letter also helps in indicating the direction and reading pattern of the sound.
- 11. Mode** — There are two modes of creating SSW by either hand-lettering or using digital typefaces. Hand lettering has more flexibility for creative exploration of SSW while digital typefaces has the advantages of editing and variations. However, currently there are no typefaces available for Hindi SSW therefore hand-lettering is more effective for creating and exploring SSW.
- 12. Perspective** — The visual technique of drawing the SSW such that it either looks receding away or coming towards the reader creating illusion of depth and distance. It gives the word realistic looking dimension and makes the word part of the story world. Improper knowledge of perspective drawing however results in visually deformed words so if used, it should be skillfully drawn.
- 13. Orientation** — The alignment of the SSW in horizontal, vertical or angular directions with respect to the sound. It helps to signify the direction of the sound and also guides the intended reading pattern for the word.
- 14. Position** — The placement of the SSW inside the elements of a panel or page. Apart from employing the SSW in the image, placing it in other elements like speech balloons, narration boxes, multiple panels etc. can provide varied narrative effects to the story.
- 15. External Supportive Element or ESE** — The ESE are not actually SSW but other external elements (like lines, different shapes, flash stars, clouds etc.) that surround the SSW to add emphasis to the word.

Different elements and shapes can be added with the SSW to enhance the drama in the SSW. The individual function of the element should be considered while attaching them with the word.

The syntactic attributes hereby identified formulates the structural components of Hindi SSW and will be further considered while creating design guidelines in chapter 4. Till this section the SSW were mainly observed as a form and through the syntactic analysis the smaller forms were defined. These smaller forms however function as a composite whole to create meaning in the comic books. Although it is strived to reflect only on the structure and not the meaning of the SSW however, there may be few occasions where the meaning is also discussed which should be considered as unavoidable. The next section discusses in detail the meaningful groups that are formed from these smaller structural components.



3.5 Semantic Analysis

The samples used for the syntactic analysis were investigated in order to observe the semantic categories emerging. The meaning of each SSW is identified and according to their appearance they are affixed to a semantic category. In order to gain knowledge about the semantic categories a schematic diagram is shown in figure 3.28.

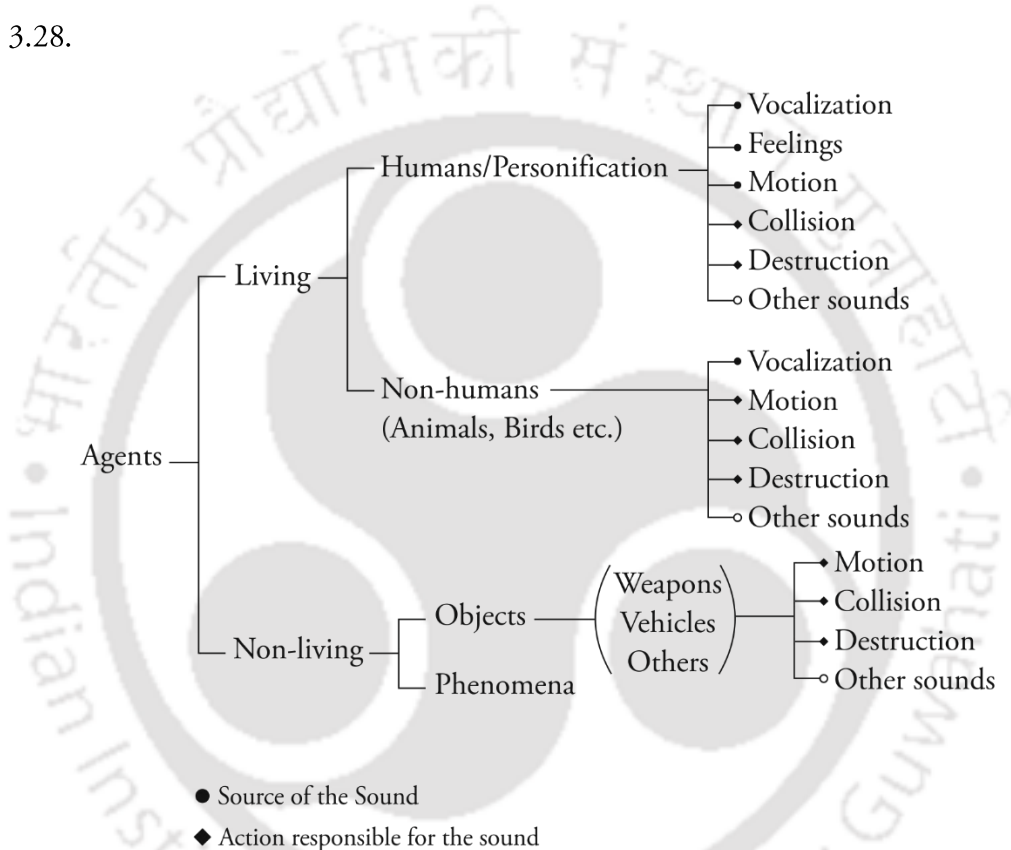


Figure 3.28 Schematic diagram of the semantic categories under which different sounds are categorized⁵.

The *Agents* are the main active or passive cause that produces the sound. Agents are observed in two categories as *Living* and *Non-living agents*. These two categories broadly consists of all the causes of sounds. Living agents are found as *Humans/personification* and *Non-humans*. The sounds can be either produced from a source termed as *vocalization* (audible sounds) or *feelings* (inaudible sounds), it is marked with a black circle. Also, sounds can be produced through some actions like

⁵ Temporality (sustained and instantaneous) is not included in the diagram as it is common among all the categories.

motion, *collision* and *destruction*, shown with a black diamond. Whichever category is producing the sounds is marked with the responsible source or action. Similarly, Non-human agents consist of sounds from animals, birds, insects, aliens etc. Here also, the source and actions are mentioned with an exception of eliminating feelings because Non-human agents could not produce sounds though feelings and thus it is only included in human agent category.

The Non-living agent, *Objects* contain weapons (of any class), vehicles (of any type) and others (objects making sound like doorbell etc.). This category contains sounds created by motion, collision, destruction and other types of sound (like sound of typewriter or keypad etc.). *Phenomena* is another category in non-humans and it includes sounds from any natural occurrences (like fire, flood, lightning etc.).

The process of identifying the meaning and affixing the categories finally helped to construct four major semantic categories under which all the SSW are affixed. These four semantic categories are: *Source*, *Action*, *Temporality* and *Feelings* as shown in table 3.2. The semantic categories are further segregated in values that are identified depending on the context of the image. The values are coded alphanumerically to label the samples as per their appearance in a specific category. These categories were formed after analyzing each SSW and the type of meaning they signify in a particular context (inside a panel).

Source is defined as the semantic category that is responsible for producing the sound. The sound can be either produced by a Living being (Humans or Animals) or by a Non-living entity (Weapons, Vehicles, Natural phenomena etc.). The semantic category of *Action* is defined as the happening inside a panel performed by an actor or event. It has three values: Motion, where the SSW signifies an actor or object in motion; Collision, where the SSW signifies two or more objects or bodies colliding with each other and Destruction, where the SSW signifies all types of exploding objects. *Temporality* is defined by the duration of time signified by the source of the sound. The SSW can represent an Instantaneous time or a Sustained

duration of time depending on the source. Lastly, *Feelings* consists of those SSW that purely represents emotions and feelings. There are no values to this category.

Table 3.2 The semantic categories and their percentage of appearance identified from the samples.

Sl. No	Attributes	Values		Code	Out of 1620	Total (Category wise)
1.	Source (A)	Living	Humans (personification)	A1	772	(A1+A2+A3+A4+A5+A6) 1620 = 100%
			Non-humans (animals,birds etc.)	A2	89	
		Non-living	Weapons	A3	361	
			Vehicles	A4	121	
			Phenomena	A5	40	
			Others	A6	237	
2.	Action (B)	Motion		B1	332	(B1+B2+B3) 1380=85.18%
		Collision		B2	650	
		Destruction		B3	398	
3.	Temporality (C)	Instantaneous		C1	939	(C1+C2) 1620 = 100%
		Sustained		C2	681	
4.	Feelings (D)			D	483	483 = 29.8%

3.6 Source — Semantic Category A1-A6

The first semantic category is identified as the *Source* from which the sound is produced or originated. In the samples it is identified that none of the sounds could be affixed in the category of Phenomimes but all of them could be placed only in the category of Phonomimes (resembling to onomatopoeia). The Source is also the first phase of the SSW creation process (see figure 3.3) and decides what type of visual representation will be manifested to it in the final phase. It is further segregated into six values: Humans, Animals, Weapons, Vehicles, Phenomena and Others. Table 1 shows the number of SSW found under each value and also the total percentage of Source.

3.6.1 Semantic Category: Living

The semantic category of *Living* consists of two values: Humans and Animals. The sounds produced by any living being or creature is affixed under this category including all forms of life like aliens and imaginary creatures.

3.6.2 Humans

This category is found to be the most inclusive since most of panels contained a living entity involved in action. It consists of the SSW that signifies any action or movement that is fundamentally produced by a human agent involved in hitting with any body parts (punches, kicks etc.) or clapping, clenching of teeth and so on. From table 3.2 it is deduced that Human sounds makes for 47.6% of the total samples. The large percentage is primarily due to the genre of the comics i.e. Superhero comics that involves abundance of human actions. In some other genres like funny animals or horror, the percentage of human entities will be different. Figure 3.29 shows samples showing punch and kick from the samples. The actions performed by the characters in Superhero comics are mostly meant to disorient an opponent in fight. The disorientation is expressed by broken Shirorekha, overlapping of letters and angular orientation. The colors are dominantly red for stronger signification of the action shown.



Figure 3.29 SSW showing punches and kicks (a) Dhadaak-Punch (b) Ghummm- Kick (c) Dhadaam- Punch

3.6.3 Non-humans

The semantic category of *Non-humans* comprises of the sounds produced by animals, birds or any other creatures apart from Humans. In this category diversity in visual style is not found compared to the previous category. Majority of the SSW appears in similar visual style like Humans. Animal sounds are only 5.49% of the total samples. The reason for lesser variations in Animal sounds can be attributed

to their percentage of availability also. Figure 3.30 shows samples of SSW representing animal and bird sounds. In the SSW of Animals, the immediate syntactic attributes noticed are a gradient or solid fills of red and orange colors, heavy weight of letters, overlapped letters, and angular orientation. The word color represents a violent feel whereas the heavy weight letters signifies the loudness of the sound.



Figure 3.30 SSW showing (a) dog bark (b) crow cawing (c) bird chirping

Besides the linguistic representation of the word, rest of the syntactic attributes are employed in similar styles like the Human category. An important syntactic attribute lacking in this category is the employment of texture. Animals and birds have a varied texture on their bodies that is a primary identification of the creature itself. None of the samples have used this attribute to the benefit of the visual representation thus making the SSW similar in visual style resembling other categories.

3.6.4 Semantic Category: Non-Living

The semantic category of Non-living is divided in four values: Weapons, Vehicles, Phenomena and Others.

3.6.5 Weapons

The category of *Weapons* consists of sounds of all the weapons used in actions. The total percentage of SSW for weapons is 22.28% of the samples. The weapons range from hand-held traditional style to automatic machine type weapons. However, the Superhero genre predominantly employed weapons that are automatic and

mechanical. In this context mostly guns are used that vary from pistols and small guns to huge machine guns or even canons. Figure 3.31 shows samples of SSW representing different weapons.



Figure 3.31 SSW showing sounds of weapons: (a) Dhay-pistol (b) Tad Tad -an automatic gun and (c) Jing Jing- big machine gun (d) Badddddaam- Tank canon

In figure 3.31(a) the sound is produced by a pistol that is linguistically represented by the word *Dhay*. The red color of the word supports the violent meaning of the action, the heavy weight letters signify the loudness of the sound and angular orientation supports the overall image composition that is slightly angular in orientation. In figure 3.31(b) the automatic sound of the gun is aptly represented by the words *Tad Tad Tad*. The SSW has similar syntactic attributes like the previous image. In figure 3.31(c) the SSW reads *Jing Jing Jing* used to represent a heavy machine gun firing. The linguistic sound resonates the rotating minigun type weapons that has a different sound from a pistol (*Dhay*). The SSW is a digital typeface used to support the mechanical nature of the weapon whereas the orientation in different angles signifies the rotation of the gun. Figure 3.31(d) shows the SSW of a tank canon that reads *Badddddaam*. The syntactic attributes are heavy weight letters in red color and with discontinues Shirerekha.

It is seen that red or any warm color with continuous Shirerekha is more meaningful for small weapons whereas, discontinuous Shirerekha is suitable for big weapons.

3.6.6 Vehicles

The semantic category of Vehicles comprises the SSW that represents the sound of a moving or stationary vehicle on road, water or in air. The vehicles range anywhere from a bicycle to a helicopter or a spaceship. The percentage of SSW of vehicles is

7.4% of the total samples. The sound of the vehicles is predominantly found with repetition of letters to emphasis the longer sound of the engine and movement. The words also varied with the type of vehicle represented. Figure 3.32 shows some samples of SSW showing different vehicles in motion. Figure 3.32(a) shows a SSW that reads ‘Vrroooooom’, a conventional word appearing in Western comics equally. The SSW appears with ESE, motion lines to signify the movement of the van. The angular orientation is aligned with the motion of the van that coalesce to form the meaning of a speeding van from left to right of the panel. Figure 3.32(b) shows a SSW for a train and the syntactic attributes are similar to the previous figure. The SSW reads ‘Dhadada Dhadada’ linguistically sounds heavier when spoken. In figure 3.32(c) the SSW shows the sound of a speed boat that reads ‘Ghurr...’. The angular orientation is supporting the disorientated movement of the boat. In figure 3.32(d) the SSW reads ‘Wheee’ that is used to represent the sound of a flying jet plane. The word color is in white with thin weight of the letters. The angular orientation of the word is kept aligned with the motion of the plane. The SSW is a digital typeface and appears aesthetically weaker than the other hand-lettered SSW.



Figure 3.32 SSW showing sounds of vehicles: (a) ‘Vrroooooom’-speeding van (b) ‘Dhadada Dhadada’ -train (c) ‘Ghurr...’ - speedboat (d) ‘Wheee’ – Flying Jet plane

It is suitable to use green or blue color SSW with continuous Shirorekha for the vehicles and the orientation should be dependent on the movement of vehicle. Also, motion lines are important to signify motion and movement and must accompany the SSW to emphasize more impact.

3.6.7 Phenomena

The semantic category of Phenomena consists of all the SSW that are employed to represent any type of natural happenings like fire, lightning, electricity, sounds of

nature, waterfalls, volcanic eruptions and so on. The total percentage of phenomena representing SSW is 2.4% only among the samples. Figure 3.33 shows some SSW showing different sounds of phenomena. Figure 3.33(a) shows SSW for electricity that reads ‘*Tirradd*’. The primary signifiers are Red word color with overlapping or letters in vertical orientation. Figure 3.33(b) represents a lightning that is shown by the SSW ‘*Kadada*’. The word is thin weighted in yellow color and in wavy orientation. The word color and the orientation appears disconnected with the nature of the sound. This is primarily because the SSW is a digital typeface and not hand-lettered and makes the SSW appear organized and plain whereas the sound demands more organic and scattered appearance. Figure 3.33(c) is a SSW signifying fire that reads as ‘*Bhakk*’. It denotes the sudden catching of fire so the word sounds closer to the happening. The SSW is in blue color which would have been better if expressed by red color. The letters are heavy weighted and warped with some motion lines.



Figure 3.33 SSW showing sounds of Phenomena: (a) ‘*Tirradd*’- electricity (b) ‘*Kadada*’ - Lightning (c) ‘*Bhakk*’- Fire

In this category there is a possibility to create different textures related to the phenomena signified which is so far was not found in the samples.

3.6.8 Others

The last attribute in *Source* is *Other* category that includes the SSW that do not fit in any of the three categories discussed above. For instance, SSW for a musical bell might emote a happy feeling but it is originating from a non-living object (the bell). The total percentage of SSW in this category is 14.2% of the total samples. Figure 3.34 shows few samples affixed in this category. Figure 3.34(a) shows SSW for a musical bell. The primary signifiers are red color, heavy weight of letters, continuous

Shirokekha and wavy warping. The visual appearance of the word would have been more suited given the color is subtler or cool colors as the signified sound is supposed to be subtle and sweet. Figure 3.34(b) shows a SSW for pulling down a lever with a '*Khat*'. The SSW is red in color with heavy weight letters and vertical orientation of letters that creates a discontinuous Shirokekha also. In figure 3.34(c) the SSW bears a similar visual style even though it signifies the sound of falling drums.



Figure 3.34 SSW showing sounds in Other category: (a) 'Tin Tunan Tun' - musical bell (b) 'Khat' – Lever pull (c) 'Khadada' - Drums falling

3.7 Action— Semantic Category B1-B3

The second semantic category identified from the samples is *Action*. It is further divided in three values depending on the type of action performed: *Motion*, *Collision* and *Destruction*. Each value is discussed below.

3.7.1 Motion

When a living or non-living body or object is moving from one point to other, then the action is considered to be signifying *motion* and the SSW were affixed accordingly. From the samples it is identified that most panels representing motion were showing vehicle chases and fights. The SSW in this category accounts for 20.49% of the total samples. Figure 3.35 shows four examples from the samples.

The nature of motion is in all the instances signify a sustained movement. A body is perceived in motion when it at least moves from one point to other within some duration. The duration can be short or long which will also decide the type of sound created for the motion. Figure 3.35(a) shows a leaping bike from a cliff. The accompanying motion lines and dust clouds are drawn from the left of the panel and crosses more than half of the panel. The jump signifies a sustained sound

in mid-air. The SSW added to this is reads as ‘Vrrrooo’ signifying a sustained motion. The repetition and weight of the word contributes to the duration and intensity of the motion.



Figure 3.35 SSW showing (a) Vrrrooo- Jumping Motorbike (b) Barrrrr- Bike in motion (c) Surrrrr- Iron particles flying (d) Varoooooshghurr -Speeding car

Figure 3.35(b) shows a character riding a motorbike. Contrastingly in this panel the SSW is smaller and reads ‘Barrrrr’ signifying a different meaning than the previous image. The reason for employing a SSW starting with ‘Ba’ is due to the fact that the character is riding a heavier bike (Bullet) as compared to the previous character (figure 3.35-a) driving a lighter bike (Yamaha Rx100). In 3.35-a, SSW starts with an unrounded vowel ‘Va’ and appears appropriate for a sharp sound. Whereas in 3.35-b to indicate the bike’s heaviness ‘Ba’ is employed. The representation of the SSW with respect to the vehicle type holds true when compared to real life also. The engine of Yamaha Rx100 makes a shrilled noise (Vroooo) whereas Bullet is known for its heavy bass driven sound (bud-bud-bud). The signifiers in both images are primarily heavy weight letters with broken Shirorekha and angular orientation. The meaning in both instances is firmly supported by the linguistic choices of the words.

Figure 3.35-c shows a pile of iron dust being pulled to a magnetic weapon fitted to a character’s eyes. The SSW used here is ‘Surrrrr’ that gives the impression of swift and light motion. However, the weight of the letters is similar to the SSW in 3.35-b. The primary signifiers in notice are the metallic appearing gradient (suggesting

the metallic powder being pulled), the angular orientation for the direction of the action and repetition of letters for suggesting the motion.

Figure 3.35-d shows a car pulling in a quick pace from back to front. The SSW is '*Varoooooshghurr*' and is placed in an angular orientation from left to right almost covering the panel. The SSW is in perspective and gives the effect of the car in perspective. The colors used are a gradient of orange and yellow signifying the aggressive motion of the car. The positioning of the SSW also adds to the meaning to the image. It is placed in the background overlapped by the car suggesting the car's precedence over the sound. This type of overlapping can create interesting effects signifying the sound appearing from the background and moving towards the reader. Motion is shown in comic art through the literal and metaphorical use of elements. For the literal representation of motion artist uses the angle and position of figure to suggest motion whereas for metaphorical representation they use motion lines or supporting images (Juricevic & Horvath, 2016).

The SSW is identified as signifying motion primarily due to the linguistic selection of the words. After the proper selection, the other signifiers like orientation, perspective and ESE should be added for the desired effect.

3.7.2 Collision

This category is defined as when two or more living or non-living bodies/objects come in contact with an impact, then the action is considered to be signifying *collision*. The impact may or may not result in a produced sound. However, all the samples representing collision created sound and involved SSW. The total percentage of SSW for collision is 40.12% of the total samples. Most frequently occurring events of collision were found in the category of *Living (Humans)* followed by *Vehicles*.

Figure 3.36 shows four examples of SSW representing collision. Figure 3.36-a shows the SSW '*Dhaad*' signifying a head banging on floor. The predominant signifiers are red word color for the violent action depicted, heavy weight of the word, overlapped grouping for the conveying the collision and discontinuous

Shirokekha. Figure 3.36-b shows a body being thrown and colliding with a SSW 'Dhadaak'. The primary signifiers are the heavy weighted red colored words with broken Shirokekha. The color of the word however merges with background making it difficult to read on first instance. In figure 3.36-c however the SSW consists a white outer stroke that effectively distinguishes the word from the background. The shirokekha is also absent suggesting a destroyed impact of the collision. In figure 3.36-d again the SSW color and background color are in similar shades which is not suggested for distinction of the SSW. Overall red color is predominant in this category irrespective of the compositional considerations.



Figure 3.36 SSW showing (a) Dhaad- Head banging (b) Dhadaak- Body banging (c) Bhadaak- drone crashing (d) Dhammm –Body banging

For collision, the syntactic attribute of letter overlap is more meaningful than a scattered arrangement of words. Red color or other shades of warm color is more suitable for the collision. Also, the discontinuous Shirokekha or absent Shirokekha adds more meaning to the broken effect of the collision.

3.7.3 Destruction

This category arises due to the result of the previous categories. When the bodies/objects collide then there can be an effect of *destruction*. The level of destruction can be mild to severe. This semantic category contains the actions signifying explosions, blasts either through weapons, living beings or through natural phenomena. The total percentage of SSW in this category is 24.5%. Figure

3.37 shows some examples of events representing explosion. The nature of an explosion is usually loud, scattered and disoriented. Figure 3.37-a uses a SSW 'Badoom' with a lower warping and green colored text. The letters are heavy weighted with continuous Shirorekha. Figure 3.37-b shows another SSW 'Dhadaam' for explosion however the explosion is actually implied and not shown directly. It is only represented through the SSW and the character's dialogues and expressions. But the weight of the SSW shows the intensity of the explosion and acts as an identifier in the absence of the actual event.



Figure 3.37 SSW showing destruction (a) Badoom- Explosion (b) Dhadaam- Explosion (c) varoom- Blast (d) Fachaak- Face blast

In this case the word color is red with heavy weight letters and continuous Shirorekha. In figure 3.37-c, another blast is shown by 'Varoom'. The primary signifiers are the red word color, discontinuous Shirorekha and angular orientation. In figure 3.37-d the SSW shows a face blast with 'Fachaak' that consists of similar signifiers as the previous image, discontinuous Shirorekha, red color and angular orientation. The SSW sounds as if something soft or squishy has exploded (i.e. the face). In Hindi language, this word is often used to describe explosions of balloons, water and other liquid substances.

For signifying destruction, red color, heavy weight of word, disjointed grouping, and discontinuous Shirorekha should be used for appropriate effect. A big possibility includes using perspective to show dimension and texture to add more interest to the action.

3.8 Temporality— Semantic Category C1 & C2

The actions inside the panels happens in a certain amount of time and it also signifies certain duration of time as an effect. The SSW is capable of conveying the duration of the actions happening inside panels. In the premise of our study and analysis, *temporality* is defined as the quality of the time conveyed by the SSW. The quality of time refers to the amount of time depending on the duration perceived by the SSW. Temporality is thus divided in two values: SSW representing *Instantaneous* sounds and SSW representing *Sustained* sounds.

3.8.1 Instantaneous

Superhero genre involves abundance of fast actions and fights which created an assumption of SSW showing instantaneous time will be more than sustained time. It is then found that 57.9% of the total samples conveyed instantaneous time. SSW signifying instantaneous time are considered as those events that happens from a fraction of seconds (like pressing a switch) to few more seconds (like a gunshot) but within a minute. Figure 3.38 shows some examples of SSW showing instantaneous actions.



Figure 3.38 SSW signifying instantaneous time: (a) Click-Door button (b) Chatt- finger snapping (c) Beep-Digital signal

Figure 3.38-a shows a character pressing a door button. The SSW 'Click' is often used with actions for pressing buttons or switches (like camera buttons). The primary signifiers in this are the red color of the word, medium weight, welded grouping, angular orientation and warping. The nature of the sound is short and thus a SSW of a light weight would have been more appropriate. Moreover, red color does not aesthetically enhance the meaning of the action as the action is casual rather than aggressive. The warping of the SSW suggests a rotating motion though.

Figure 3.38-b shows a person snapping his fingers. This is also an instantaneous act that takes fraction of seconds to complete. The letters are in light weight but a medium weight would have made the SSW more legible. The white color is better suited than the previous image. The SSW reads '*Chatt*' (pronounced with a heavy *t*) and shown with an ESE, the small flash lines with a different color than the background. The SSW doesn't appear to be aesthetically fitting with the ESE firstly because the SSW is a digital typeface and displays a different visual style than the image and secondly the positioning of the SSW is not deliberately decided as it floats between the finger and the face. A more sensitive decision would have been shifting the SSW within the flash star.

Figure 3.38-c shows a SSW for digital signal that reads '*Beep Beep*'. This word is commonly found in Western comics also and mostly used for signaling machines to signify counts or alarm. The red color of the word in this figure is suitable as the character is approaching an alarming situation. The continuous Shirorekha helps to bind the word and create a rhythmic word for the signal.

For instantaneous sounds, medium and light weight of word, welded grouping, and continuous Shirorekha is more suitable. Possibility also includes using ESE for enhancing the effect of quick time through flash stars or some other shapes.

3.8.2 Sustained

The SSW falling in this category involves sounds that represent events signifying a prolonged duration of time that sustains in the environment for some time. The total percentage of SSW in this category is 42%. A sustained sound is fundamentally signified by words or letter repetition. In this context, single words do not signify sustained sound unless even a single letter is repeated in it. The more repetition of letters or word is shown; the more duration of time is conveyed.

A prolonged pronunciation of the word fundamentally depends on the linguistic choice of the word. In English onomatopoeia it is often found that the repetition of a vowel changes the manner the word is read. For instance, '*Bam*' signifies a punch or explosion with shorter duration whereas '*Baaaaam*' signifies an explosion with a

stretched duration of time. Similar effect and practice of stretching time is identified in the samples.



Figure 3.39 SSW showing sustained time: (a) Tad-Tad-gunshots (b) Ghurrr-Speeding car (c) Bhammmmm- Character's fighting

Figure 3.39 shows examples of SSW signifying sustained sound appearing in the samples. In figure 3.39-a, the action shows multiple gunshots fired by police. Here, the SSW is repeated six times and spreads across the panel from top left to bottom right. The SSW an individual word is overlapped to show the continuous and overlapping sounds of gunshots. The sustained time is primarily shown by the repletion of the word. Any other signifier doesn't contribute significantly to convey the longer duration. In figure 3.39-b, the action shows a car rushing in front of a character. Only a small part of the car is visible suggesting the car is in motion and has passed through. The placement of the SSW in perspective along the line of the car helps to draw a coherent connection of the movement of the car. To show the sustained sound of the car, the letter 'ra' is repeated four times. The placement of the SSW also synchronizes with the reading pattern such that after finishing reading the dialogue, the eyes hit the SSW and comes to the car and leaves the panel from right forwarding to the next adjacent panel. The number of panels with such deliberate designs is however low in the samples. Contrasting to the previous image, the sustained time is shown here by letter repetition rather than word repetition.

In figure 3.39-c, the SSW shows a sustained time with a greater impact than the previous images. The SSW starts from top left corner and in a rhythmic pattern ends at the right bottom of the panel covering the whole background suggesting a sustained and loud sound. Since the characters clashing in the image are also non-humans with large physical structure, the elongated SSW helps in conveying their

impact. The SSW is overlapped by the foreground characters and this provides SSW with an interesting placement possibility. Here, the repetition is shown through the conjunct and letter '*ma*'.

Majority of the samples utilizes word or letter repetition for showing sustained time. Positioning SSW across multiple panels is a technique for representing longer duration which is identified in fewer samples. Apart from these signifiers, any other creative exploration to produce a visual feel of stretching the word is not found, which can be new exploration.

For sustained sounds, it is more suitable to use letter or word repetition and perspective. Possibilities also include using multiple outer strokes for a sustained and reverberating feel and using creative ways of drawing Shirorekha and diacritics to induce a visual feel of a stretch in the word. Words positioned across multiple panels is also a possibility of sustained time representation.

• 3.9 Feelings— Semantic Category D

Unlike Phonomimes and Phenomimes, Psychomimes is the only category where only two types of SSW or rather *symbols* were found in the samples: the exclamation mark (!) and the question mark (?). As a rhetoric device, these symbols are frequently used while writing to express surprise, excitement, interrogation or questioning. As a similar approach, these two symbols are used in comics for conveying similar emotions. Only 29.8% of the total samples employed these symbols to express emotions. Any other symbols are not found among the samples.

Figure 3.40 shows the two symbols used for conveying feelings. In figure 3.40-a, the exclamation mark is positioned inside a thought balloon. Like repetition of multiple letters suggest a sound with more duration, similarly repeating these symbols emphasizes on the amount of surprise. Increasing the size of the symbol is another technique to give emphasis to the amount of surprise/shock. The symbol placed inside a thought balloon appears logical as feelings are inside bodies and essentially invisible to others.



Figure 3.40 SSW showing feelings (a) Double exclamation (b) Question mark (c) Interrobang

In figure 3.40-b, the symbol shows a character's confusion through a question mark placed inside a speech balloon. Now, the function of a speech balloon essentially is to contain dialogues *spoken* by a character. In this instance what the character must be saying remains an ambiguity because question mark is not read literally rather perceived. It mostly signifies the character expressing a half finished 'What?' or 'Wha--?'. However, the ambiguity in meaning still remains as it is not clear whether the character is saying *What?* *Why?* *How?* or *When?* or any other words. It is thus better to position question marks inside thought balloons instead of speech balloons for better clarity of the context.

Figure 3.40-c shows both the symbols together inside a thought balloon and it is also called interrobang. The combination of both the symbols is not a frequent practice in writing literature but in comics this seems to be a different feature than literature. Symbols can be combined according to the context to bring out meanings in images. In this example, the feeling of surprise, shock and confusion all work together inside the character's head. Other examples also exist among the samples however all of them follow the same patterns discussed above.

In printed comics emotions and feelings are primarily conveyed through visuals and texts. Unlike web or motion comics, where emotions can be conveyed through different experiences in an interactive format (Campbell, 2008), printed comics has to solely rely on the visual dimensions to convey emotions. Web-comics reading experience can be totally different as they cannot be touched and lacks the tactile nature of printed comic books. This alienation from the sense of touch makes it *unreal* and we perceive it in a virtual world (Hague, 2012). To induce a sense of reality, it is still a challenging issue for Indian comics designers to express feeling

through SSW. This issue has never been studied in Indian context neither there exist any diverse examples to create a study from the limited samples.

Japanese language consists of well documented dictionary of expressions (Takehi, Tamori, Schourup, & Emerson, 1996) that includes a vast range of words that expresses emotions and feelings. Likewise, Basque also contains large lexicon of SSW compiling more than 4500 examples of Basque onomatopoeias which are varied in range (Antunano, 2009). Japanese comics or Manga utilizes a diverse range of SSW to express emotions whereas in Indian comics mostly onomatopoeic words are used. This made the category of Psychomimes very limited and difficult to study and understand.

While this category is the least explored in the context of variations, it also poses a challenge to create new words to signify different feelings. Even though in Hindi language, there is rarity of such words that expresses feelings, creating such words in comics might be an interesting area and for now it can be assumed those words will become conventions to express feelings in due course of time.

3.10 Conclusion

This chapter followed the framework of DRM and discussed the Descriptive Study phase of the research design. In this phase it is tried to understand and describe the SSW in its structural form and components. While DRM provides the basis of the exploratory study, semiotic analysis of visual signs is employed to understand the SSW further so that its relation with the meaning created is understood better. Thus the SSW are studied as visual signs which consists of two parts: signifiers and signified.

This chapter started with an understanding of the process of SSW creation from its origin stage till its visual representation stage shown through the 5 stages diagram of SSW creation. It is understood that SSW being a less studied visual element of comics, consists of a creative process that requires proper understanding of its form and meaning. Keeping in view the present study's objectives, the rest of the

observation and analysis is focused on understanding the visual representation stage of SSW.

The samples were collected from all Hindi comic book publishers however only Raj Comics is chosen for analysis as it fitted well in the 3 criteria affixed for sample selections. While collecting the data from Indian publishers, it is found that the range and explorations in SSW are very limited in contrast to the practice in world comics. The category of SSW employs three sub-categories out of which Indian comics uses only phonomimes or onomatopoeias to represent sound. In contrast to Japanese language which consists all the three categories of sound symbolism, Indian language does not have such a structure.

A total of 1620 SSW were collected from Raj Comics superhero titles and the syntactic and semantic analysis is conducted on them (see appendix 3 for the data). This chapter also briefly discussed the visual differences of drawing SSW among the 4 Hindi publishers. Apart from Raj comics, the other 3 publishers do not produce variety of SSW and also employs limited number of SSW. Thus, Raj comics formed the maximum corpus for this study followed by other publishers.

The samples consisted both hand-lettered and digital typefaces however, lack in the availability of digital fonts for SSW is noticed that lead the artist to use typefaces (meant for formal documents) which appears inappropriate in the context of the comics as the language of comics is different from a newspaper or novel.

The syntactic analysis provided with the understanding and identification of the structural components of Hindi SSW. As it is written in Devanagari script which is contrastingly different from Roman script, therefore many variations of structural features were identified and defined. The syntactic attributes are analyzed as individual contributing factor but it is also found that these variables are interconnected in themselves. It is not only a single factor on which the signified sound depends, but a collective inclusion of different signifiers.

With sufficient knowledge about the structure of SSW, section 3.5 then initiated the semantic analysis of the samples. The semantic categories emerging

from the samples were categorized and defined accordingly as shown in the schematic diagram figure 3.41. The semantic categories found are *Source*, *Action*, *Temporality* and *Feelings*. These four categories are further divided in values that includes different SSW signifying different meanings.

In each of the semantic categories the prominent signifiers are noted and possibilities for newer variations are discussed. Among the three categories of sound symbolism, psychomimes are identified as least explored and utilized group to convey feelings. This limitation is a significant point for designers to contribute in the form of design support by creating either new words or symbols.

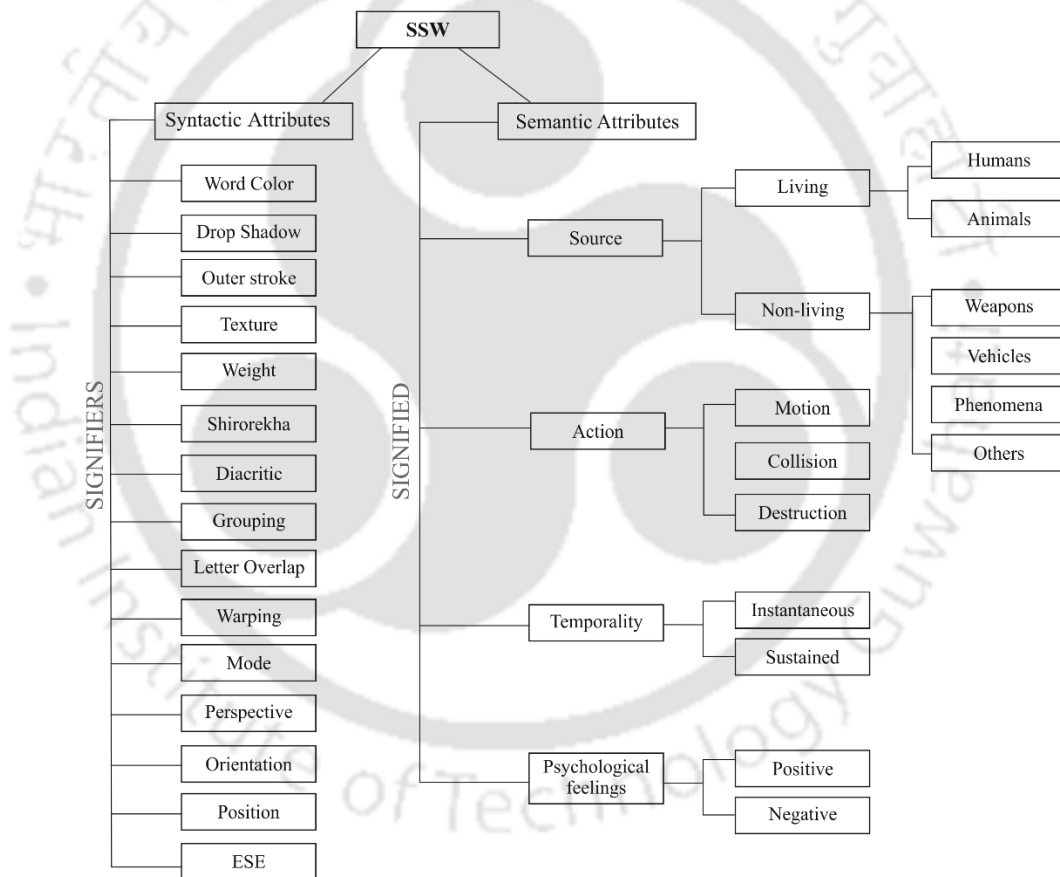


Figure 3.41 Structural diagram showing the syntactic and semantic attributes of SSW.

Together, section 3.4 and 3.5 make the larger body of chapter 3 and provided with sufficient understanding and knowledge about the structural features and the meaningful groups that is conveyed through SSW (see figure 3.41). In conclusion, the inferences and findings that are articulated from here will be utilized in the next

chapter in order to create design guidelines for Hindi SSW. Thus, the understanding of the SSW that generated knowledge will be reflected through practice and will help to improve the current situation of employment of SSW.



4. Towards Creation of SSW for Hindi comic books

In the domain of Comics studies, the practice of comic arts is as important as its scholarly discussions. Both should move hand in hand in order to create a holistic understanding of the medium. The theories created through analysis should reflect in/through the practice. This way the practice provide further insights to strengthen the created theories.

With the intention of understanding SSW, the previous chapter provided the syntactic and semantic attributes. Its structural features and meaningful groups were identified in the context of Indian Superhero comics.

The current chapter utilizes the understanding of SSW in order to create a design support for comic book designers. This chapter provides foundational ground towards creating SSW in Hindi as part of the prescriptive Study phase of DRM. Thus, the objectives of this chapter are:

- a) To explain the process flow of designing SSW by the knowledge gained from syntactic and semantic attributes.
- b) To create a set of guidelines for designing SSW formulated from the process flow.
- c) To create a visual repository of SSW in each semantic category that is readily usable by designers.

The process flow shown in appendix 6 consists of the overall steps required to be considered while designing SSW. This leads to the creation of guidelines for each syntactic attributes. Finally, a visual repository is created for the ease of designers to directly use the SSW in comic books. The visual repository contains around 150 SSW comprising of all the semantic categories including new words to represent feelings.

The creation of guidelines for SSW is based on observation and understanding of the SSW. These guidelines are the prescriptive interpretations of the researcher

himself as a practicing artist of comic arts. For the purpose of clarification of the creative process, one example from each semantic category is demonstrated. The demonstrations are presented in section 4.4 following the discussion on design guidelines.

The design guidelines for the visual representation of the SSW are based on two aspects. First is the context of SSW that includes decision making about the format, genre, narrative, and image and textual representation. Second is the creation of SSW that includes decision making about its visual form.

4.1 Guidelines for Creating SSW

This section provides the suggestive design guidelines for creating SSW. The guidelines are presented here not to restrict creativity (as some may feel), but to help as additional support to enhance creativity. These guidelines are intended to act as the beginning point for motivating the designers to create SSW. At the end of each section consolidated guidelines are provided in tabular form for recalling the suggestions and other details.

4.1.1 Format

Comics are produced in variety of formats like comic strips, comic books, graphic novels, web comics, motion comics etc. Every format has its own requirements, functions and objectives. The format many times decides the scope for the inclusion of SSW and the extent of its use (like in wordless graphic novels there are no word at all). In a '3-4 panel comic strip' (like *B.C* by Johnny Hart) there might not be enough space for including lots of SSW whereas a 'full length comics' (any mainstream DC or Marvel comics) is filled with SSW. Many times graphic novels (like *Shortcomings* by Adrian Tomine) do not employ SSW or even if they do, it is just handful. With the formats, thus it is decided whether there is a scope to include SSW or not and if yes then to what extent.

Apart from the decision about the inclusion of SSW, format allows to decide about the color production too. Whether the format of the comics is in print or

black and white effects the decision of color choice in SSW. In web comics and motion comics (like comics by Madefire comics and motion books), the range of using colors is unlimited unlike printed formats where color production is related to the cost involved. Therefore, the designer should consider the format of the comic while creating and selecting SSW.

Table 4.1 Considerations of format while creating SSW.

Format	Remarks
Comic books	Lots of scope to use SSW both in color and black and white. It helps to enhance the <i>comicalness</i> of the comic.
Graphic novels	Less scope for including SSW. Even if included, the SSW are not varied in visual forms and kept subtle.
Comic strips	Less scope for including SSW unless very specific narrative demands in the limited number of panels.
Web comics/ digital comics/ motion comics	Unlimited scope for including SSW in full color. SSW can be animated and given special effects in motion comics. The possibilities are endless in digital platform.

4.1.2 Genre

The genre in comic books is unlike any other medium (like novels or film) where a range of diverse themes is found. It is category of comics with specific style and characteristic features along with a distinct visual style. The genre is an important concern for the designer to decide about the visual look and feel of the entire comics. A specific comic should have a uniform visual style reflecting the genre unless it's an anthology of different creators. This helps the reader to connect to the world of the comics and its surroundings in a seamless fashion. It also suggests about the content of the comics.

While drawing SSW, the designer should consider an important question here i.e. what type of SSW should be employed for the entire comic book? The answer to this will be directed from the genre itself. If the genre is a horror comic, then the SSW will have a distinct visual style resembling feeling of horror. And if it's a funny animal genre then the SSW will appear more 'cartoony'.

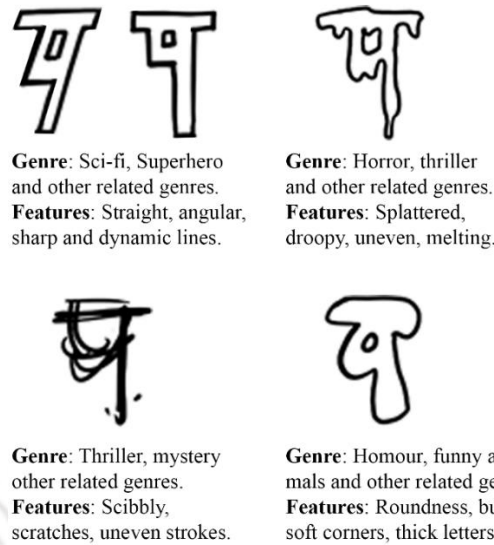


Figure 4.1 Variations of letter 'Pa' for different genres.

Figure 4.1 shows a single letter drawn for different genres. Even though it is not explicitly annotated, yet the style of the letters conveys clearly about the letters and the genre they resemble. However, since genre is seen mostly as a combination of various visual styles therefore it is possible to recombine different genres for creating SSW. For instance, horror and crime comics have SSW with similar appearance and science-fiction and superhero comics has similar visual style of SSW. Whatever be the genre, it is mandatory for the designer to maintain a visual style of SSW that harmonizes with the genre of comics and blends with the image aesthetically.

Table 4.2 Considerations of genre while creating SSW.

Genre	Letterforms	The visual style
Superhero, Sci-fi, Action		Straight and angular sharp lines of letters, dynamic feel, geometric letters, gradients and shines in the words.
Horror, thriller		Dripping letters, unstructured letter forms, splattered and grunge feel.
Thriller, Mystery		Scratchy letters, unstructured letterforms, uneven letters.
Humor, funny animals		Rounded and cartoony letterforms, curvy feel to the letters with lots of bright colors.

4.1.3 Narrative

The story takes place inside the panels in comics. The small panels in different shapes and sizes carries small events that forward the narrative. The events are described in the scripts with the dialogue, narration and sound effects that has to be placed inside a panel. There are varied practices on the writing and drawing from the script. Some scripts are detailed with all the description of the scenes and sound effects whereas some scripts provide minimum description and relies on artist's creativity to draw SSW. In case the SSW is provided in the script then the artist can start creating the SSW based on the syntactic attributes. If the word is not provided in the script then the artist has to select and create the SSW for which the suggested guidelines of syntactic attributes are provided in the coming sections.

In the narrative, the SSW transcends from a visual representational world to the diegetic world of the comics. It is not a necessity to combine SSW with every panel. That would make the page appear visually cluttered. Rather the design process should lead to a deliberately placed SSW that would appeal to the reader contextually significant. Thus, whether the image demands for an action oriented SSW or a feeling conveying SSW that is determined with respect to the narrative of the panel. The narrative helps to decide the rhythm and pacing shown in the SSW. The type of sound (harsh, soft or flowy etc.), the type of effect (loud or low) and the type of space available inside panels is important points to consider in the narrative.

4.1.4 Image

The image impacts the appearance of SSW and a designer should consider whether the SSW is represented in 2D plane or a 3D plane. There can be two possibilities of designing SSW. First is while drawing the panel image, the SSW is also drawn along with the image. In this case the image and SSW are composed as a 2D image. Second way is to draw the image and place the SSW separately on top/middle/back of the image. Here, the SSW is treated separately from the image and acts as an individual 3D element which is placed in the 3D space of the image.

Figure 4.2 shows a panel with a gunshot and an SSW *Bang!* The image is 2D with all the elements (image and SSW) composed in a single image. The viewing frame is the angle from which a scene is perceived and drawn by the artist in the panel.



Figure 4.2 A panel as seen from the viewing frame in a comic book.

In figure 4.3, the 3D space shows the action happening in 3D with the SSW placed in the back of the action. Thinking in terms of such 3D space and composition, it is easier to arrange the SSW and include it in the diegetic world of the image.

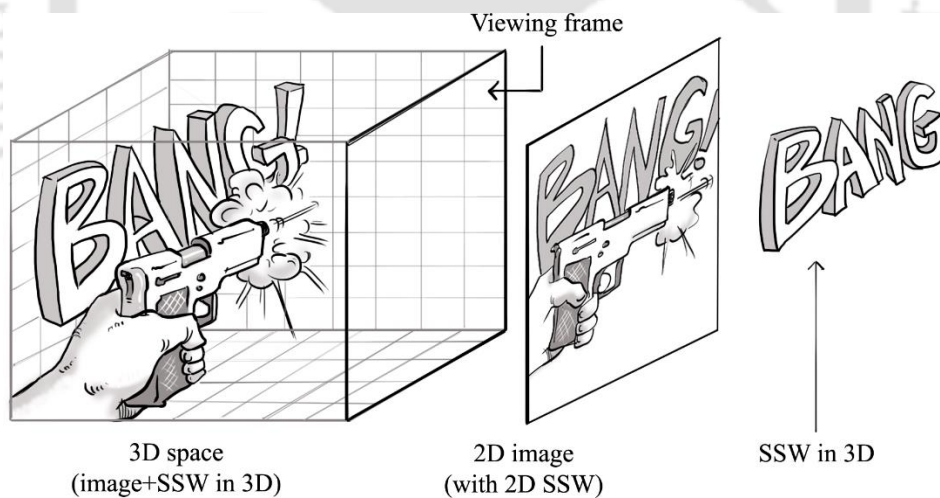


Figure 4.3 The 3D space and 2D image where SSW can be placed.

Composing the image and SSW in a single panel poses a challenge to the translation of the comics many times. In translation, mainly the text is changed while retaining the image. SSW is both text and image and it is also changed however with the absence of similar original style of SSW, the translated SSW is sometimes written a regular text. It thus loses the essence of the original sound (an

example of *Tintin* translated from English to Bengali is discussed in chapter 2). It is therefore advised that if a comic is going to be translated, the SSW should be composed separately from the image so that while translation it can be removed and new style of SSW could be placed in the panel.

The image color is another important point to consider while creating SSW. Depending on the image colour inside the panel, the designer needs to decide the colour saturation. It can be either high saturated colour if the genre is Superhero, humour, horror or similar genres or it can be low saturated colours for genres with different visual styles (like graphic novels). Figure 4.4 shows six examples of a SSW colouring against different backgrounds. In order to achieve a contrasting colour scheme complimentary colours are the best to employ whereas, analogous colours are more harmonious in visual appeal (Edwards, 2004) . Thus, for more degree of importance and attention, complimentary colours are better suited in SSW.



Figure 4.4 Color combinations for SSW against different panel color.

Deliberate thought process before creating an appropriate SSW is an essential part for making an interesting panel (or a page). An effective SSW, could lead the reader's eye in progression of the narrative, it could create a pause in the story, and it could indicate a presence of a secondary object which is not visible in the panel, could emit the feeling of the noise and texture of the sound and so on. Thus, these considerations should be well thought before selecting and creating any SSW.

Table 4.3 Considerations of image while creating SSW

Image space	SSW	Remarks
2D	2D	Drawing the SSW with the image poses a problem while translation as the SSW cannot be removed from the image. SSW should be carefully drawn in a 2D space.
3D	3D	SSW can be thought of as an individual element and thus can be placed anywhere in the panel. It's good for entering the SSW in the diegetic world.

4.1.5 Textual representation

This phase may vary across cultures and same sound can be written in different words in other cultures. However, linked with the phenomenon of *kiki-bouba*, broadly the representation is generalized in the form of rounded and unrounded sounding words. This phase is also where the designer can be as creative as possible and experiment with new pronunciations (think of Don Martin's famous and funny onomatopoeias).

The creation of new words should not be restricted by the conventional SSW and should be thought of as a possibility to establish words that could become conventions. Among graphic novels and comics, while the former may have subtler and realistic sounding SSW, the latter have more flexibility for inventing newer words (especially in children-humor genre).

This phase is highly depended on the script being used of writing. In the current study, Devanagari script forms the main basis of the creation SSW. It is unique in many aspects from Latin script and its syntactic attributes should be deliberately considered while designing as the position or placement of even a small dot- ‘.’ (known as *bindu*) alters the pronunciations and in some cases meaning also. The designer of course has the freedom to exaggerate some letters in the word to emphasis on certain meanings (like repeated letters for a stretched sound) however the decision should be carefully taken while verbalizing the words and saying it loud and check how it feels.

Table 4.4 Considerations of textual representation while creating SSW

Letter Starting With	Use for
ग,घ,ध,ब,भ,थ	Loud sounds like explosions, collisions, destruction etc. Also for punches and kicks.
क,ख,च,छ,ठ,त	Moderately loud actions like punches, kicks, splashes, weapons etc.
स,श	Sounds for motion, speed etc.

The concluding guidelines for textual representation could be formulated as:

- For louder sounds use words with rounded sounds.
- For sharp sounds use letters with a sharp sounds.

4.1.6 Lines and Shapes

The lines and shapes are discussed here in the same length as they are intertwined and complimentary among them. Also, while drawing SSW these two elements are thought together and not individually.

Lines composed together forms the shapes. Without drawing the letters of SSW, the shapes should be considered first with respect to the composition of the panel. Figure 4.5 shows three types of visual shapes represented by an unreadable text. The first example of the word resembles a geometric solid shape due to its characteristics like straight edged lines, thick letters, and an overall rectangular (or box like) shape. The second image resembles a liquid body with its attributes specially warping and rounded edges signifies a word for liquid form. Lastly, the gaseous shape of the word is shown which is warped (*wavy* because of the nature of gas), and the wavy lines (ESE) combined together signifies a word resembling a gaseous form.

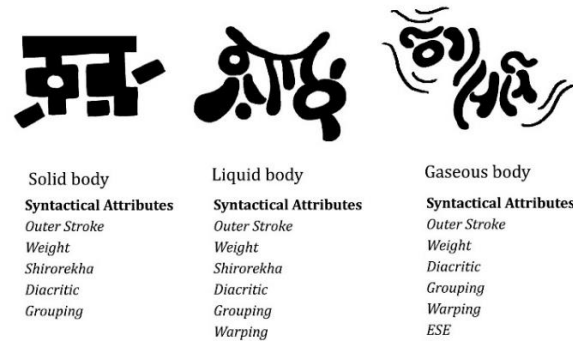


Figure 4.5 Visual shape of a gibberish word

As shown in figure 4.5, the word are gibberish yet they convey some meaning related to the kind of shapes and sounds. Similarly, there can be more shapes for each type of sounds that needs to be considered. Figure 4.6 shows some shapes for motion, collision and destruction. Since these are the main category in which Superhero comics represents sounds, so these shapes are chosen.

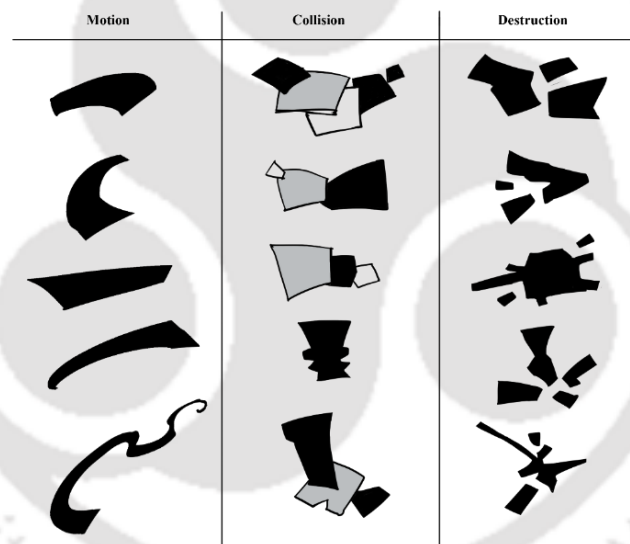


Figure 4.6 Visual shapes for different actions: Motion, Collision and Destruction.

The shapes of Motion are mostly dynamic appearing with a suggestion of direction by either the angle and contortion of the shapes or the structure of the shape. The shapes of collision are fragmented and broken with disjointed parts. The grey parts are shown to differentiate the parts and joints and provide a feel of collision. The shapes for destruction are mostly broken and scattered with a

We are continuously surrounded by forms and always perceive forms in a relative manner. Visual shapes and lines are all seen in relation to each other and

understood. A jagged line might suggest sharpness, excitement and hurting whereas a curve is gentle, calm and welcoming (Sousanis, 2015). These types of contrasts even though not tested and theorized are *felt* and seen in design and visual arts practices. In totality it could be generalized that SSW when made unreadable, can still evoke the meaning with its visual shape and textures. The only requirement is the understanding of the context and its relation to represent a SSW by using the appropriate lines, shapes and textures.

Table 4.5 Considerations of lines and shapes while creating SSW

Lines	Shapes	When to use?
Rounded	Curvilinear	Suitable for motion, softer sounds of wind, animals, liquids etc.
Straight	Blocky	Suitable for collision, punches, kicks etc.
Straight	Broken/ scattered	Suitable for explosions, destruction and loud sounds.

The concluding guidelines for texture could be formulated as:

- a) For softer sounds use rounded and curvy shapes.
- b) For collisions and harder sounds use blocky shapes with straight lines.
- c) For explosions and destructions, use broken and scattered shapes.

4.1.7 Texture

In this stage it is possible that even without employing any other syntactic attributes, the SSW created with different types of lines, shapes and textures conveys certain meanings. Figure 4.7 in this context shows the variations of lines and textures that are useful for drawing the SSW conveying different meanings. In order to achieve some visual textures, treatment of lines plays a significant role. At this point the textures which can be created digitally through a software is not considered, rather the practice of creating textures through hand lettering is the main objective.



Figure 4.7 Textures created by using different lines.

In this figure, only the treatment of lines have been done differently for each letterforms. This much only provides the letter with a varied range of meanings and visual style. A SSW that is drawn considering this much knowledge also will be appropriate to convey the desired meaning. Adding other syntactic attributes will be more helpful to strengthen the meaning as it will be shown in coming sections.

The printed image relies on the different techniques (of combining lines, shapes etc.) to create visual textures that can evoke certain feelings. Some of the letters are filled with different textures whereas some of the letters merge the lines and texture as one (like spiky and doodles). This kind of treatment will be more appropriate in the context of comics and graphic novels that is printed in black and white only. By adding colors the meaning becomes stronger as shown in figure 4.8. The letterforms are drawn with the lines and textures and then color is applied according to the texture.

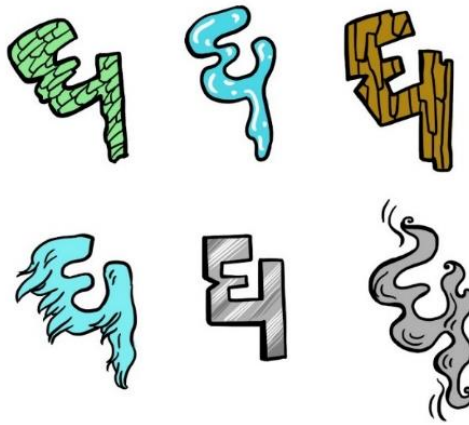


Figure 4.8 Letterform created for different textures (a) reptile skin, (b) slimy, (c) rough, (d) soft furry, (e) metallic and (f) vaporous

Whenever an image is viewed, the details of the image are perceived in two ways: in parts and in whole. Which is the dominating mode of perceiving and meaning processing is a debatable issue. By the laws of gestalt, it could be said that while looking at forms, we not only look at the positive space but negative spaces also. Both the spaces are necessary in order to make the complete form and generate meaning. In the context of SSW, if the reading comprehension is separated from the word, then a reader will be only able to see the SSW in relation to its shape and its visual properties (like color, texture etc.).

Table 4.6 Considerations of textures while creating SSW

Texture	When to use?
Rough	Good for animal sounds, explosions or similar actions where broken or rough texture is required.
Scribbles	For sounds of steams, vapors, smoke etc.
Spiky	For electric currents, shocks, surprising sounds, spiky animals etc.
Slimy	For slimy animals, liquid sounds, blood splatters etc.

The concluding guidelines for texture could be formulated as:

- For harsh sounds use a rough texture.
- For subtle sounds use scribbles and doodle textures.
- For sharp sounds use spike and pointed textures.
- For slithering animals and liquid sounds, use slimy textures.

4.1.8 Word Color

The word color in superhero comics has a varied range of options especially with the availability of printing technology. The word color of the SSW has a direct relation with the image color discussed in section 4.1.4. The color of the word should be selected depending on the action represented and emphasis needed (Dey & Bokil, 2017) (Morton, 1997) (Edwards, 2004) (Ou, Luo, Woodcock, & Wright, 2004). High saturation colors are most attractive while subtle color SSW are better suited for subtle actions.

Table 4.7 Considerations of word color for SSW

Word Color	When to use?
 Warm colors	Creates high emphasis for action sounds that are louder. Good for superhero genre to show violence and action.
 Cool colors	Suitable for cooler liquids and subtle sounds.
 Neutral colors	Less emphasis on SSW. Suitable for comics with color restrictions (like graphic novels).
 No color	Least emphasis on SSW. Only the outline is visible and the word is hollow. The image is seen through the SSW.

The concluding guidelines for word color could be formulated as:

- For violent and aggressive actions use warm colors with high saturation.
- For subtle sounds use cool colors.
- Use neutral color for a clear line artwork style or graphic novel.
- For less emphasis use a hollow SSW with an outer stroke.

4.1.9 Weight

The weight of the letter can be manipulated by creating a double outer line of the letter and making it thicker. In table 3, the three basic variations of the weight of the SSW is shown. The first image has a thin weight with only single color shown

(black). Two colors can be added in thin letters but that would require filling the letter with one color and the outer stroke with another. In thin weight letters due to the thinness using two color is not suggested. Thus, two colors should be mostly used when using SSW with medium or heavy weight.

The variations in the weight of the letters should also be considered depending on the quality of sound represented. A loud and big sound is better suited with heavy letters whereas discreet sounds are better represented with thin weight SSW.

Table 4.8 Considerations for weight of SSW

Weight	When to use?
 Light	Suitable for small actions and sounds with less intensity and loudness.
 Medium	Suitable for moderate intensity sounds like guns, punches, collisions.
 Heavy	Should be used for loud sounds like explosions, big weapons, crashes, big animals etc.

The concluding guidelines for weight could be formulated as:

- For smaller intensity sounds and sharp sounds, use a thin weight SSW.
- For medium intensity sounds like punches, kicks, small weapons etc. use medium weight SSW.
- For loud intensity sounds like explosions and big animals, use heavy weight letters.
- Use a combination of thick and thin weight letters for sounds with different high and low pitch.

4.1.10 Outer Stroke

The outer strokes can be single stroke to multiple strokes and depending on the requirement the colors of each strokes can be different. Most importantly the color

of each strokes should be in complimentary palettes to created stark contrast between the background image and the SSW.

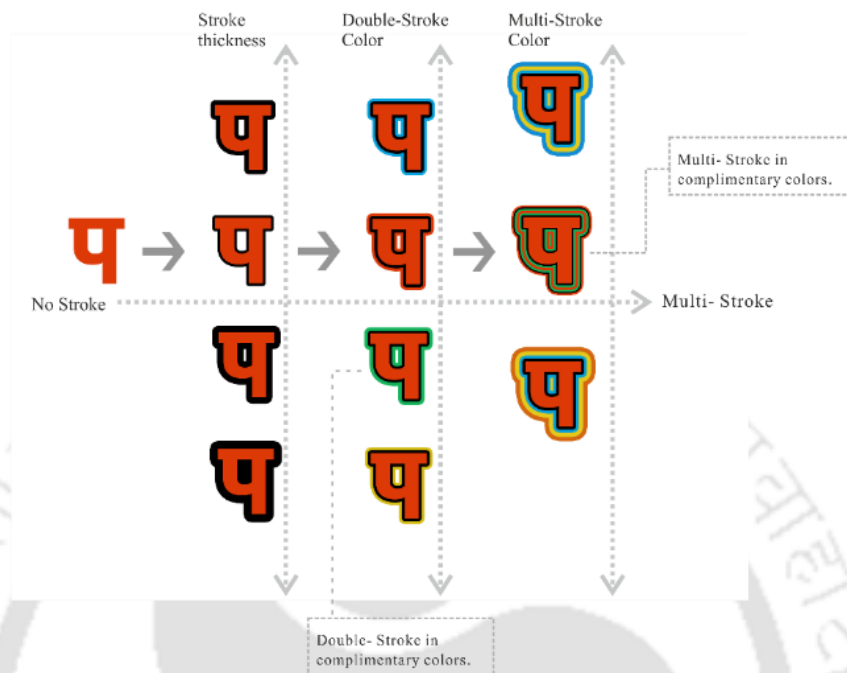


Figure 4.9 Outer stroke variations.

In figure 4.9, on the horizontal axis from left to right the letter consists of no outer strokes to single strokes to multiple strokes. If the designer is using multiple strokes, then it is suggested to uses complimentary colors for each strokes. On the first vertical axis, the single outer strokes can have varied thickness starting with a thin outer stroke to thick outer stroke that fills the counter of the letters. In the second and third vertical axis the combination of multiples strokes has been shown.

Table 4.9 Considerations for outer strokes

No. of Stroke	Stroke color	When to use?
प No stroke	--	Less emphasis in SSW. Makes SSW dull. If background color is same as SSW, it merges.
प Single	Black	Suitable for all SSW. Creates distinctness.
	Other colors	Suitable for SSW for animals, weapons. Creates more distinctness and interest.
प	Complimentary colors	For more emphasis. Good for loud actions and non-human sounds.

Double		
	Multiple colors	High emphasis on SSW. Creates a reverberating effect. Good for ultrasonic and psychedelic sounds.
Multiple		

Depending on the number of outer stroke, the color should also be chosen and each combination is suitable for different categories mentioned in the table.

The concluding guidelines for outer stroke could be formulated as:

- For less emphasis, do not use outer strokes in SSW or using an outer stroke and keeping the SSW hollow also creates less emphasis.
- For little emphasis, use a thin black stroke in SSW.
- Use a thick outer stroke with different color than the SSW to create a vibrant effect than using only black strokes.
- Use multiple strokes in multiple colors to create a psychedelic effect.

4.1.11 Drop Shadow

Drop shadow can function as creative technique to denote the presence of the SSW in the diegetic space of the comics. The casting of the shadow of the words on a surface or object or person inside the panels can immediately signify the SSW is inside the diegetic space. Whereas, not using the drop shadow affixes the SSW on the visual space where the characters are not aware of the SSW but the readers are.

Table 4.10 shows the different possibilities of drop shadows. The first image has an adjoined drop shadow while the second image has a drop shadow at 50% distance from the letter. The last image shows the drop shadow at 100% distance from the letter making it appear as a separate letter. There can be in-between distances of drop shadows but that would be a subjective choice of the designer though. In table 4.10, the background is white therefore the shadow is appearing distinct. Careful consideration should be given to the images where the background is full colored so that the drop shadow does not merges with the background and neither does it makes the SSW appearing cluttered and illegible. In that case the

color of the drop shadow can be changed to complimentary colors that stand out from the image and provides a distinct appearance to the SSW.

Table 4.10 Considerations for drop shadow

Drop shadow distance	Drop shadow color	When to use?
 Adjoined	Black	Suitable for small actions and weapons.
	Other colors	Good for emphasis for any actions and weapons.
 50% distance	Black	Suitable for sounds near ground.
	Other colors	
 100% distance	Black	Should not be used as it will create confusion because of the distance.
	Other colors	Better than black. To create more interest the shadow should be distorted on the background objects.

The concluding guidelines for drop shadow could be formulated as:

- For a floating effect, use an adjoined drop shadows in black color.
- Use a different complimentary color of the shadow to create emphasis and interest.
- For more creative exploration, distort the shadow of the SSW according to the background objects on which it is falling.

4.1.12 Shirorekha

The Shirorekha is unique structural feature of Devanagari script. In Latin script the letters are all independently placed side by side to form a word whereas in Devanagari script the letters in a word are all joined with Shirorekha. This feature posed difficulties to the participants while drawing the SSW because in order to break the alignment and orientation of the words the Shirorekha was also becoming discontinuous and that partly resulted in confusion among participants. For

addressing this, there are four variations suggested for utilizing Shirorekha in a creative way.

Table 4.11 Considerations for Shirorekha

Shirorekha	When to use?
 Continuous	Suitable for human sounds with less intensity, vehicles,
 Discontinuous	Suitable for sounds of destruction, scattered and broken sounds.
 Disjoined	Suitable to be used or explosions, collisions. The distance should be maintained with the words otherwise it loses relevance.
 Absent	Should be used for destructions and aerial sounds so that the letters can be arranged individually.

In table 4.11, the SSW are drawn keeping the Shirorekha as continuous, as discontinuous but with letters, as discontinuous but disjoined from letters and as completely removed from the letters. The breaking and removal of Shirorekha creates similar flexibility of drawing SSW as drawing English SSW. In this manner, the letters can be creatively placed and oriented with the image.

The concluding guidelines for Shirorekha could be formulated as:

- For continuous sounds (like punches, kicks, bullets) use a continuous Shirorekha.
- Use a discontinuous and broken Shirorekha for explosions and scattered sounds.
- For a more flexible arrangement of letters, do not use Shirorekha.

4.1.13 Diacritic

The diacritic is the second structural feature of the Devanagari script that poses challenge for the designers while drawing the SSW. Table 4.12 shows the two possibilities to use the diacritics in either joining it with the letter or keeping it distant that provides more flexibility to employ the diacritics.

Table 4.12 Considerations for outer diacritic

Diacritic	When to use?
 joined	Suitable for sounds with a compact and smaller intensity.
 Disjoined	Suitable for sounds of explosions, scattered and broken sounds.

The concluding guidelines for diacritics could be formulated as:

- For continuous sounds (like punches, kicks, bullets) use joined diacritics.
- Use a disjoined diacritics for explosions and scattered sounds.

4.1.14 Grouping

The variation in grouping of letters is shown in table 4.13 with two types for grouping possibilities. The letters can be grouped without any letters distinction and as a welded shape or the letters can be grouped with distinction between them through the outer strokes of each letters.

Table 4.13 Considerations for grouping

Grouping	When to use?
 Welded	Suitable for sounds of continuous motion, vehicles, sustained sounds etc.
 Disjoined	Suitable for sounds collision, different actions like punches, kicks, or falling objects, object clashing.

The concluding guidelines for grouping of SSW is formulated as:

- For continuous sounds (like punches, vehicle etc.) use welded letters.
- For quick digital coloring of the letters, use welded letters.
- Use a disjointed grouping to scatter the words and for explosions, collisions etc.

4.1.15 Orientation

The orientation of the SSW also adds to the direction of the source of the sound. In table 4.14 three possibilities of orientation are shown. The first one is horizontal orientation, the second is vertical orientation and the third one is angular orientation. The angle of orientation can be changed as per the sound's origin point.

Table 4.14 Considerations for orientation

Orientation	When to use?
 Horizontal	Suitable for sounds of objects or motion happening in horizontal directions.
 Vertical	Suitable for sounds of objects falling from above or motion from above or below in a vertical direction. The reading of the letters and the direction of the sound is better suited in same direction.
 Angular	Suitable for sounds of objects or motion in angular directions. Similar conditions should be followed like vertical orientation.

The concluding guidelines for orientation of SSW is formulated as:

- For the sound from left to right direction use horizontal orientation.
- For sounds from top to bottom or reverse direction, use vertical orientation.
- For angular sounds direction use an angular orientation.

4.1.16 Letter Overlap

The letters of SSW can be overlapped with two possibilities: single letter overlap or multiple letter overlap. Table 4.15 shows the two possibilities of overlapping. A

single letter can be overlapped on rest of the letters or all the letters can overlap on each other depending on the effect designer wants to achieve.

Table 4.15 Considerations for letter overlap

Letter overlap	When to use?
 Single letter	Suitable for sounds of objects colliding and falling. Creates less depth in the word.
 Multi-letter	Suitable for sounds of objects falling with more intensity. Creates more depth and distance among the words.

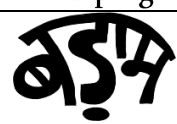
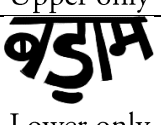
The concluding guidelines for overlapping of SSW is formulated as:

- For a receding effect of the letters, use overlapping.
- For collisions, use multi-letter overlapping.

4.1.17 Warping

Warping is effective to convey a sense of movement and to signify the direction of the sound, table 4.16 shows different possibilities of warping the words. In many of the samples studied where typefaces are used for SSW, warping the typeface has been noticed as a challenge to the designer. Warping a typeface distorts its preset structural features and creates an odd appearing SSW. This is one of the features which can be achieved by hand lettered SSW. Hand lettering provides the flexibility to draw a warped SSW in any of the shown possibilities which is otherwise difficult and time-consuming if a typeface is modified in these variations.

Table 4.16 Considerations for warping

Warping	When to use?
 Upper only	Should be used for explosions, punches, kicks, loud sounds.
 Lower only	Should be used for explosions, punches, kicks, loud sounds.

 Upper arc	Should be used for explosions, punches, kicks, loud sounds. The lower part indicates the origin of the sound that is pushing the word upwards.
 Lower arc	Should be used for explosions, punches, kicks, loud sounds. The upper part indicates the origin of the sound that is pushing the word downwards.
 Wave	Should be used for aerial sounds, sirens, musical instruments, snakes, gases, smokes etc.
 Peephole	Should be used for explosions, loud sounds, and sounds receding away. This requires more skill to draw the fish eye perspective so should be drawn carefully.

The concluding guidelines for warping of SSW is formulated as:

- For a pushing effect of the sound, use upper arc or lower arc of warping.
The source of the sound should be near the center of the warping always.
- For aerial and floating sounds, use wavy warping.
- Use peephole warping for sound of explosions and for a bulging effect.

4.1.18 Position

The position of the SSW can be fixed at five locations: inside a single panel, across multiple panels, inside speech balloons, inside thought balloons, and inside narration boxes. The positioning of the SSW effects the perception about the sound in the narrative. The SSW placed inside a thought balloon suggests that the character is thinking about a sound whereas inside the narration boxes it would mean that the narrator is describing a sound. These aspects can be creatively used in the comics to achieve interesting effects in the story which is rarely found in Hindi comics. Figure 4.10 shows the different positions of SSW.

Based on the importance needed to be given for the SSW, it could be positioned either in background or foreground of the image. When the SSW contains only outline, the intention of the artist is to represent the sound but at the same time less

वाउ, वाउ, वाउ, वाउ

अटक

बेंग

बेंग

बेंग

Table 4.17 Considerations for position

Position	When to use?
Inside panel only	Suitable for all types of SSW. However, it should not be placed in any other element except on/with the image.
Multiple panels	Suitable for sounds of sustained motion that joins different panels. This is a good possibility of making interesting narratives based on the same SSW across different panels.
Speech balloons	Suitable for sounds that are spoken/described by a character.
Thought balloons	Suitable for sounds that are thoughts including sounds for emotions and feelings.
Narration boxes	Suitable for sounds which are narrated. Another good way to connect the SSW with a different time line of the narration.
Foreground	SSW can be placed on top of the image giving more emphasis on the sound. It could cover part of the image so it should be carefully placed.
Middle ground	SSW can be placed in same line with the image. No overlapping is done here and the SSW appears on the same plane of action.
Background	SSW can be placed in the background, overlapped with the image. It gives less emphasis to the sound as it is partly seen.

The concluding guidelines for position of SSW is formulated as:

- a) For all types of sounds, place the SSW inside panels but without overlapping other elements.
- b) For sustained sounds use SSW across multiple panels.
- c) For the feelings, place SSW inside thought balloons.
- d) For spoken sounds, place SSW inside speech balloons
- e) For narration sounds, place SSW inside narration boxes.
- f) For more emphasis, place SSW over all the elements in image in the foreground.
- g) For equal emphasis with the image, place SSW with the image in middle ground.
- h) For less emphasis, place the SSW in the background, overlapped with the image.

4.1.19 Perspective

Drawing the SSW in perspective adds depth and dimension to the image. It creates a sense of approaching sound from the source of origin. Perspective has been rarely used effectively in Hindi comic books. While there are different types of perspectives (one-point, two-point etc.), it is suggested that one-point perspective is used for SSW. More complicated perspective is unnecessary in Superhero genre comics and might consume additional time to create the perspective. Also, if not drawn properly, the perspective might appear distorted and create a flawed looking SSW. One-point perspective is simpler to draw and consumed less time than other types of perspective. Table 4.18 shows a SSW in one-point perspective. The orientation of the SSW can be changed to signify different directions and length of the sound.

Table 4.18 Considerations for perspective.

Perspective	When to use?
 One point	Suitable for sounds of vehicles, flying weapons, jumps, kicks, gives the effect of sound receding or coming forwards. Should be drawn carefully without distorting the perspective.

The concluding guidelines for perspective of SSW is formulated as:

- Use perspective for showing a receding effect to the sound.
- Use only one-point perspective for SSW.
- Use perspective with a heavy weight letters for big sounds like explosion.
- Use perspective with thin or medium weight letters for showing motion of weapons etc.

4.1.20 External Supportive Elements or ESE

These are the final syntactic attribute that accompany the SSW and actually are not the structural part of the words. There can be as many shapes and elements possible in this category however in the Superhero genre comics, the five element that are sufficient are: motion lines, flash stars, wavy lines, and clouds as shown in table 4.19. The motion lines signify a word in motion, the flash starts can be used for words denoting fights, explosions and sudden sounds, the wavy lines can be used for sounds signifying vibrations or rhythms and the cloud is famously used for fights or smoky objects.

Table 4.19 Considerations for ESE

ESE	When to use?
 Motion lines	Suitable for sounds of objects/vehicle in motion, fast action like punches, kicks, thrown weapons etc.
 Flash stars	Suitable for sounds of explosions, collisions, destructions, and shocking sounds.

 Waves	Suitable for sounds of vibrations, weapons, thunders, trembling objects, confusion.
 Cloud	Suitable for sounds of explosions, punches, kicks, fights etc.

The concluding guidelines for perspective of SSW is formulated as:

- For sounds in motions, use motion lines. They can also be used to suggest direction.
- For explosions and surprising sounds, use a flash star.
- For vibrating sounds, use wiggly lines.
- For fights and explosions, use a cloud.
- For a sustained and elongated sound use repeated 's' in between the SSW or after the SSW but never before the SSW.

4.2 Suggestive design guidelines

The context and designing of SSW together thus forms the the complete process flow that is the objective this chapter. The guidelines of the individual syntactic attributes is hereby collated:

- For louder sounds use words with rounded sounds.
- For sharp sounds use letters with a sharp sounds.
- For softer sounds use rounded and curvy shapes.
- For collisions and harder sounds use blocky shapes with straight lines.
- For explosions and destrutions, use broken and scattered shapes.
- For harsh sounds use a rough texture.
- For subtle sounds use scribbles and doodle textures.
- For sharp sounds use spike and pointed textures.
- For slithering animals and liquid sounds, use slimy textures.
- For violent and aggressive actions use warm colors with high saturation.

11. For subtle sounds use cool colors.
12. Use neutral color for a clear line artwork style or graphic novel.
13. For less emphasis use a hollow SSW with an outer stroke.
14. For smaller intensity sounds and sharp sounds, use a thin weight SSW.
15. For medium intensity sounds like punches, kicks, small weapons etc. use medium weight SSW.
16. For loud intensity sounds like explosions and big animals, use heavy weight letters.
17. Use a combination of thick and thin weight letters for sounds with different high and low pitch.
18. For less emphasis, do not use outer strokes in SSW or using an outer stroke and keeping the SSW hollow also creates less emphasis.
19. For little emphasis, use a thin black stroke in SSW.
20. Use a thick outer stroke with different color than the SSW to create a vibrant effect than using only black strokes.
21. Use multiple strokes in multiple colors to create a psychedelic effect.
22. For a floating effect, use an adjoined drop shadows in black color.
23. Use a different complimentary color of the shadow to create emphasis and interest.
24. For more creative exploration, distort the shadow of the SSW according to the background objects on which it is falling.
25. For smaller intensity sounds and sharp sounds, use a thin weight SSW.
26. For medium intensity sounds like punches, kicks, small weapons etc. use medium weight SSW.
27. For loud intensity sounds like explosions and big animals, use heavy weight letters.
28. Use a combination of thick and thin weight letters for sounds with different high and low pitch.

29. For continuous sounds (like punches, kicks, bullets) use a continuous Shirorekha.
30. Use a discontinuous and broken Shirorekha for explosions and scattered sounds.
31. For a more flexible arrangement of letters, do not use Shirorekha.
32. For continuous sounds (like punches, vehicle etc.) use welded letters.
33. For quick digital coloring of the letters, use welded letters.
34. Use a disjoined grouping to scatter the words and for explosions, collisions etc.
35. For a receding effect of the letters, use overlapping.
36. For collisions, use multi-letter overlapping.
37. For a pushing effect of the sound, use upper arc or lower arc of warping.
The source of the sound should be near the center of the warping always.
38. For aerial and floating sounds, use wavy warping.
39. Use peephole warping for sound of explosions and for a bulging effect.
40. Use perspective for showing a receding effect to the sound.
41. Use only one-point perspective for SSW.
42. Use perspective with a heavy weight letters for big sounds like explosion.
43. Use perspective with thin or medium weight letters for showing motion of weapons etc.
44. For the sound from left to right direction use horizontal orientation.
45. For sounds from to bottom or reverse direction, use vertical orientation.
46. For angular sounds direction use an angular orientation.
47. For all types of sounds, place the SSW inside panels but without overlapping other elements.
48. For sustained sounds use SSW across multiple panels.
49. For the feelings, place SSW inside thought balloons.
50. For spoken sounds, place SSW inside speech balloons
51. For narration sounds, place SSW inside narration boxes.

52. For more emphasis, place SSW over all the elements in image in the foreground.
53. For equal emphasis with the image, place SSW with the image in middle ground.
54. For less emphasis, place the SSW in the background, overlapped with the image.
55. For sounds in motions, use motion lines. They can also be used to suggest direction.
56. For explosions and surprising sounds, use a flash star.
57. For vibrating sounds, use wiggly lines.
58. For fights and explosions, use a cloud.
59. For a sustained and elongated sound use repeated 's' in between the SSW or after the SSW but never before the SSW.

The guidelines hereby mentioned are further used to demonstrate the designing of SSW chosen from each semantic category in the next section.

4.3 Creating SSW

This sections demonstrates creation of SSW considering the five phases as reference and the other design aspects discussed so far. The demonstration is shown by selecting one word from each semantic category and proceeding stepwise from the conception of the shape to the final SSW. Table 4.20-4.32 shows the creation of the words for: Punch, dog bark, automatic gunshot, speeding vehicle, water splash, branch breaking, body flying, collision, destruction, finger snapping, siren, anger, and surprise.

The produced sound is the semantic category from where the sound is being produced. The perceived sound shows the mental shape that is formed after listening to the sound. This shape may vary among the designers. The shapes are defined with words like, solid, curvy, curvilinear, and blocky and so on. The feeling shows the type of feel the sound is producing. The linguistic and textual

representation are affixed together in order to create the word⁶. The SSW is written in Devanagari and Latin script. The syntactic attributes column consists of all the significant attributes for the visual representation. The visual representation column consists of the process of drawing and coloring the final SSW. The row with color variations shows some of the possible variations in color. There can be many variations and should be limited to the one shown here.

Table 4.20 Designing SSW for a 'Punch'.

Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Humans (Punch)	 Shape = Solid/Blocky Feeling= Strong	*Word color= Red or warm colors Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Heavy</i> *Shirorekha= Broken/ stylized Diacritic= <i>No</i> Grouping= Welded Letter overlap= <i>No</i> Warping= Upper Perspective= <i>No</i> Orientation= Horizontal ESE= Motion- lines	
Linguistic and Textual representation	Devanagari- धाड़! Latin- Dhaad		
Color Variations			

*The star marked syntactic attributes are the most important for the respective SSW for the visual representation phase.

⁶ Appendix 2 contains the extended list of Hindi SSW that can be chosen as per the semantic category. The designer has to locate the source and under that the exhaustive range of possible words used in Indian comics is provided. The SSW are written in English as well in Devanagari script so that if the designer is unaware of the language, the words can be drawn like any other object by referring to the Devanagari text.

Table 4.21 Designing SSW for a 'Dog bark'.

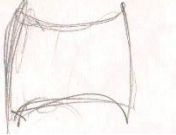
Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Animals (Dog bark)	 Shape = Pointed/sharp Feeling= Strong	*Word color= Red or warm colors Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Heavy</i> *Shirorekha=Broken/ stylized Diacritic= Joined Grouping= Disjoined Letter overlap= <i>No</i> Warping= Upper Perspective= <i>No</i> Orientation= Horizontal ESE= No	
Linguistic and Textual representation	Devanagari- वूफ Latin- Voof		
Color Variations			

Table 4.22 Designing SSW for a 'Automatic gunshot'.

Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Weapons (Gunshot)	 Shape = Solid angular Feeling= Dynamic and sharp	*Word color= Warm colors Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight=<i>Medium</i> *Shirorekha= Continuous Diacritic= Joined Grouping= Disjoined Letter overlap= <i>No</i> Warping= <i>No</i>	
Linguistic and Textual representation	Devanagari- च्यूम! Latin- Chyoom		

		Perspective= <i>No</i> Orientation= Horizontal ESE= <i>No</i>	
Color Variations			

Table 4.23 Designing SSW for a 'Speeding Vehicle'.

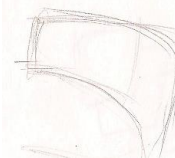
Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Vehicles (Speeding car)	 Shape = Solid-curved Feeling= Dynamic	*Word color= <i>Blue</i> Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Medium</i> *Shirorekha= Discontinuous Diacritic= <i>No</i> Grouping= <i>Welded</i> Letter overlap= <i>No</i> Warping= <i>Upper</i> Perspective= <i>No</i> Orientation= <i>Angular</i> ESE= <i>Motion lines</i>	
Linguistic and Textual representation	Devanagari- वरसूम Latin- Varoom		
Color Variations			

Table 4.24 Designing SSW for a 'Water splash'.

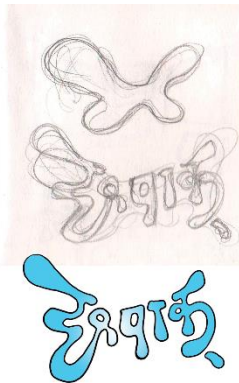
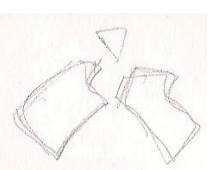
Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Phenomena (Water splash)	 Shape = Curvy-flowy Feeling= Strong	*Word color= <i>Blue</i> Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Medium</i> *Shirorekha= Discontinuous Diacritic= <i>No</i> Grouping= Disjoined Letter overlap= <i>No</i> Warping= Upper Perspective= <i>No</i> Orientation= Horizontal ESE= <i>No</i>	
Linguistic and Textual representation	Devanagari- झपाक् Latin- Chapaak		
Color Variations			

Table 4.25 Designing SSW for a 'Branch breaking'.

Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Others (branch breaking)	 Shape = Solid-broken	*Word color= <i>Brown</i> Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Medium</i>	

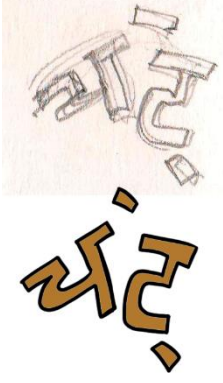
	Feeling= Fragmented	*Shirokekha= Broken/ stylized Diacritic= <i>No</i> Grouping= Disjoined Letter overlap= <i>No</i> Warping= <i>No</i> Perspective= <i>No</i> Orientation= Horizontal ESE= <i>No</i>	
Linguistic and Textual representation	Devanagari- चट Latin- Chatt		
Color Variations			

Table 4.26 Designing SSW for a 'Body flying'.

Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Motion (Body flying)	 Shape = Curvilinear Feeling= Pouncing	*Word color= <i>Blue</i> Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Light</i> *Shirokekha= Broken/ stylized Diacritic= Disjoined Grouping= Disjoined Letter overlap= <i>No</i> Warping= Upper Perspective= <i>No</i> Orientation= Angular ESE= Motion lines	
Linguistic and Textual representation	Devanagari- स्वूश Latin- Swoosh		

Color Variations	
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Table 4.27 Designing SSW for a 'Collision'.

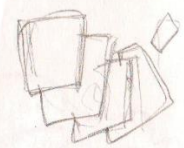
Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Collision (Dhadaak)	 Shape = Solid/Blocky Feeling= Collapsed	Word color= Red or warm colors Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Heavy</i> *Shirorekha= Discontinuous Diacritic= <i>No</i> Grouping= Disjoined *Letter overlap= <i>Yes</i> Warping= <i>No</i> Perspective= <i>No</i> Orientation= Horizontal ESE= <i>No</i>	
Linguistic and Textual representation	Devanagari- धडाक Latin- Dhadaak		
Color Variations			

Table 4.28 Designing SSW for a 'Destruction'.

Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Destruction (Badaam)		*Word color= Red or warm colors	

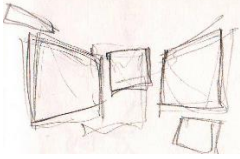
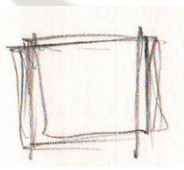
	 Shape = Solid/Blocky Feeling= Scattered	Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Heavy</i> *Shirorekha= Broken/ stylized	
Linguistic and Textual representation	Devanagari- बड़ा! Latin- Badaam	Diacritic= <i>No</i> Grouping= Disjoined Letter overlap= <i>No</i> Warping= Lower Perspective= <i>No</i> Orientation= Horizontal ESE= No	
Color Variations			

Table 4.29 Designing SSW for a 'Finger snapping'.

Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Instantaneous (Finger snap)	 Shape = Square Feeling= Stable	Word color= <i>Green</i> Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Light</i> *Shirorekha= Continuous Diacritic= Disjoined Grouping= Disjoined Letter overlap= <i>No</i>	
Linguistic and Textual	Devanagari- चट् Latin- Chatt	Warping= <i>No</i> Perspective= <i>No</i> Orientation= Horizontal	

representation		*ESE= Flash lines	
Color Variations			

Table 4.30 Designing SSW for a 'Siren'.

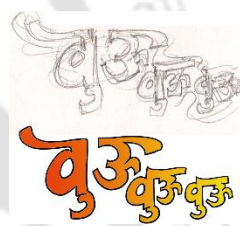
Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Sustained (Siren)	 Shape = Curvy Feeling= Floating	Word color= Red or warm colors Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Heavy</i> *Shirorekha= Discontinuous Diacritic= <i>No</i> Grouping= Disjoined Letter overlap= <i>No</i> *Warping= <i>Wavy</i> Perspective= <i>No</i> Orientation= Horizontal ESE= <i>No</i>	
Linguistic and Textual representation	Devanagari- वुऊ वुऊ Latin- Voo Voo		
Color Variations			

Table 4.31 Designing SSW for 'Anger'.

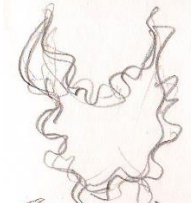
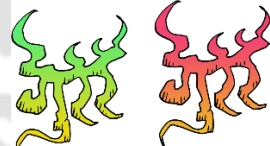
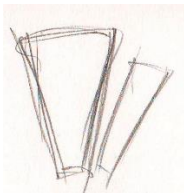
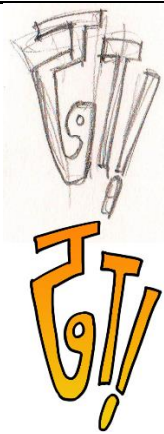
Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Emotions (Anger)	 Shape = Spiky Feeling= Fiery	*Word color= Red or warm colors Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> *Texture= <i>Yes</i> *Weight= <i>Heavy</i> *Shirorekha= Continuous Diacritic= joined Grouping= Welded Letter overlap= <i>No</i> Warping= Upper Perspective= <i>No</i> Orientation= Horizontal ESE= No	
Linguistic and Textual representation	Devanagari- गुर्र Latin- Gurr		
Color Variations			

Table 4.32 Designing SSW for 'Surprise/Shock'.

Produced sound (Semantic category)	Perceived sound	Syntactic attributes	Visual representation
Emotions (Surprise)	 Shape = Solid/Blocky	*Word color= Red or warm colors Outer Stroke= <i>Single</i> Drop shadow= <i>No</i> Texture= <i>No</i> *Weight= <i>Medium</i>	

	Feeling= Emanating	*Shirokekha= Broken/ stylized Diacritic= <i>No</i> Grouping= Disjoined Letter overlap= <i>No</i> Warping= Upper Perspective= <i>No</i> Orientation= Horizontal ESE= <i>No</i>	
Linguistic and Textual representation	Devanagari- दा! Latin- Dha!		
Color Variations			

4.4 About the digital typefaces

The previous section demonstrated the designing of SSW when it is done by hand-lettering. However, the current scenario of Indian comics is such that, it uses digital typefaces mostly. For those publishers and designers who do not wish to hand-letter SSW and continue using digital typeface, figure 8 shows the possible explorations in digital typeface also.

The SW shown here are created by Devanagari font *Kokila* and *Mangal* (default in Photoshop). The modifications are done in Adobe Photoshop. This is mainly done to show that even if digital typeface is being used, still it is possible to work under the constraints of typeface while modifying few features. It almost gives similar visual style as shown in the previous section of hand-lettering. Even though the aesthetics of the SSW are not equally appealing compared to the hand-lettered SSW, yet they appear better than the current practices.

‘Dhaad’

Features modified:
Individual letterforms typed, outer stroke applied, orientation and size changed.

‘Voof’

Features modified:
Only warped the end of the letters.

‘Chyoom’

Features modified:
Only gradient color applied and italics used.

‘Vroom’

Features modified:
Skewed the letters from small to big.

‘Chapaak’

Features modified:
Only white highlights added for water drop effects.

‘Chatt’

Features modified:
Individual letters arranged in different orientations.

‘Swoosh’

Features modified:
Skewed the letters in a wavy form.

‘Dhadaak’

Features modified:
Individual letters arranged in an overlapped style and with different orientation.

‘Badaam’

Features modified:
Individual letters arranged with skewing.

‘Voo Voo’

Features modified:
Liquified the letters for a wavy effect.

‘Gurr’

Features modified:
Gradient filled and liquified the letters for the flame like shapes.

‘Dha!’

Features modified:
Skewed the letters downwards and filled with multi-color gradient.

Figure 4.11 Digital typeface after modifying few features (created in Adobe Photoshop).

Working with typefaces provides lots of flexibility for color corrections, editing, arrangements etc. yet they are not explored this much in Indian comics. Hopefully,

this opens and provides new possibilities to the designer to use the benefit of software for enhancing creativity without sticking to the conventional trends.

Table 4.33 Features that can be adjusted in digital typeface (in Adobe Photoshop).

Fixed Features	Modifiable Features
Letterform	Word color
Shirorekha	Weight (if available)
Diacritic	Outer stroke
Position	Drop shadow
ESE	Grouping
	Orientation
	Letter overlap
	Warping
	Perspective

The table 4.33 shows the features that can be easily modified in Adobe Photoshop in a digital typeface. It also shows the features that cannot be changed. Even though the list of modifiable features is more than fixed features, yet modifying the typeface do not create pleasing letterforms (like in figure 4.11) like hand-lettered SSW is able to. Also, the forms that can be created by hand lettering, those are difficult to create in a typeface.

4.5 Visual repository of SSW for Hindi comics

The final objective of this chapter is to create a visual repository of SSW to be used in Hindi comics. For each semantic groups there are some syntactic attributes that were essential in representing the meaning. From our study of the samples the key syntactic attributes are identified that are necessary in order to represent a specific semantic group. There are some new words for representing feelings that are included in the repository. The words are created for the basic emotions: anger, sadness, happiness, excitement, tenderness and scariness. Then an exclusive visual repository of SSW for Hindi comic books is created and resented in appendix.

In digital comics, since the coloring and drawing is digitally done, it has been found (through the samples) that the fonts used for SSW is usually not made for comic sound effects. There are categories for comics sound effect (like in *blambot*) that is effectively used in Western comics. Any such digital category of fonts or styles

is lacking in Indian context. Due to the lack of such a category, the digital artist is left with no options but to use regular Devanagari font. The visual feel and look of the SSW then appears static and breaks the harmony of the image/action. Therefore, it is decided to create a repository of SSW that can be readily employed in the artwork without breaking the harmony of the image. It will make the image appear aesthetically more pleasing and better communicative.

The visual repository of SSW will be helpful for the designers as they can achieve multiple variations of a SSW. From these variations any of the SSW can be combined with the image to check its final quality. The visual vocabulary is presented in digital format (.PNG) that is readily usable⁷. The process of adding SSW is kept as simple as possible for convenience and to save time. The designer has to simply drag and drop the required SSW on the image. The size of the SSW may be adjusted as per composition however all other syntactical attributes will be intact in the SSW. The new designs thus provide the artist, with newer choices that appear semantically and aesthetically better than the current SSW in use. The visual lexicon thus acts as a model to employ SSW so that the final meaning and aesthetics of the image is conveyed to the reader with best possible selection.

4.6 Conclusion

Through the literature and interviews, it was found that there exists no design support for creating SSW for Hindi comics. Through this chapter it is aimed to create design support for designers. Logically progressing, this chapter therefore demonstrated and prescribed the various aspects related to the creation of Hindi SSW. The guidelines presented in this chapter can be used by not only designers but also interested person who are new to the field of comic arts and are seeking for references to create Hindi SSW. The suggestive guidelines will assist the designers to create SSW with deliberately considering the syntactic attributes while the textual vocabulary will help them to select the words that are used to signify different

⁷ See Appendix 5 for the list of Visual repository of the Hindi SSW.

actions and sound in comics. Finally, the visual vocabulary will function as a repository of readily usable SSW that can be employed in the comic book illustrations. For the current study the visual vocabulary consists of files with .PNG format that can be easily placed in a comic book page. The variations that the designer can achieve is through manipulating the size of the word or changing the color of the words. Any drastic changes like perspective, warping, overlapping etc. in the digital file should be avoided as this would affect the appearance of the word.

This research thus created a design support for creating SSW that was lacking in the field of Indian comics. With this support at least an initial level of change can be brought in the ways SSW are used currently and improve the visual quality of Indian comics.

Finally, with the sufficient understanding of the syntactic and semantic categories formed by the SSW this study proceeds to frame the role of SSW in the narrative of comics. Until this chapter the samples are observed, analyzed and design guidelines are created in a restricted sample group from Hindi comic books. The next chapter broadens the scope of the study and discusses the role of SSW in a larger context that include samples from international graphic novels. It will discuss about the different aspects through which SSW becomes embedded in the narrative.

5. SSW in the Narrative of Comics

The previous chapters helped to understand and create SSW for Indian Superhero comics. From the understanding of the SSW, few important questions were further raised that are part of the investigation in the current chapter. The questions are related to the role of SSW in the narrative of comics and how it functions. This line of enquiry is felt necessary because till the previous chapter, the SSW is analyzed as an element to represent sound in comics. Any other approach to understand its function in the narrative is not discussed till now. Therefore, it is taken up as a crucial point to identify and discuss the broader function of SSW apart from signifying only sound.

As this chapter defines the role of SSW in the narrative, it is important to understand the narrative structure and its various elements. Figure 5.1 shows the narrative structure proposed by Chatman that consists the essential parts of a narrative— *Story* and *Discourse*. While the story part deals with the ‘*what*’ of the narrative. The discourse consists of the ‘*how*’ of the narrative. The narrative is understood through the coherence of the events for which it is essential that the existents do not change when narrative progresses from one event to the other. The events essentially consist the episodes and incidents of the story that progresses in time. The events are further divided into *Actions*— the activities that is done or performed by the characters of the narrative, and *Happenings*— the occurrence that happens to the character and then the characters perform action (Chatman, 1975).

While Chatman’s narrative structure discusses the structure of narrative, the key elements in a narrative are also discussed by Dehejia et.al. In this context, the discourse in static visual narratives is represented through three key elements: Actor, Time and Space (Dehejia, 1990) (Hanfmann, 1957). These three elements also

have similar characteristic proximity with the events and existents seen in (figure 5.1) Chatman's narrative structure.

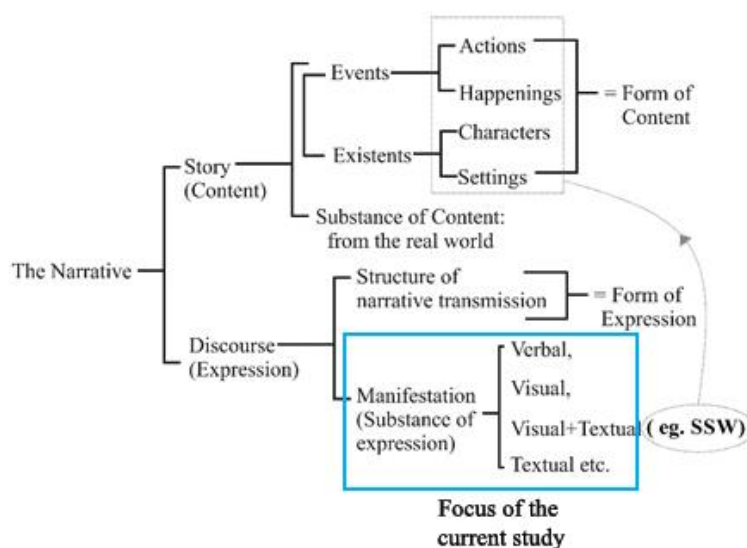


Figure 5.1 The modified narrative structure diagram: adapted from (Chatman, 1975), p.300

In figure 5.1, the manifestation of the narrative can be found through different media which are visual (e.g. films), verbal (e.g. oral stories), textual (e.g. novel), visual-textual (e.g. comic books) and so on. The manifestations can be as varied as the imagination of the creator though these four modes are found predominantly. SSW are a type of visual element of comics through which the sounds are being represented. The SSW appear in variety of shapes and sizes and signify different meanings (audible and inaudible). Moreover, for a single sound there can exist multiple words and styles to represent the sound. All of these depends on the writer and the artist who is creating the SSW. Therefore, it can be concluded that SSW are part of the discourse of the narrative because *how* the sound is being visually represented is decided through SSW.

Before discussing the significance of SSW in the narrative, a preliminary exploration of SSW is discussed through figure 5.2 and 5.3 that shows comic strips from Jerry Scott and Jerry Borgman's popular and award winning comic strip, *Zits*®. It tells the story of a high school teenager named Jeremy Duncan and portions of his life that is surrounded by his parents, friends and his love. It is a humor and coming of age genre based narrative that employs a cartoony visual style of

representation. *Zits* is particularly interesting in the context of the present study because it deliberately and humorously weaves SSW within the narrative such that in many instances, the punchline is ineffective in absence of SSW.

It should be noted that *Zits* is a comic strip and not a full length comic book. However, the narrative structure and the objective remains same like in comic book i.e. to tell a story. Format of the comics should not be considered as giving less opportunity to employ SSW in the narrative. Rather comic strip is selected to show that if in a limited number of panels SSW can contribute in the narrative then there is far more scope to explore SSW in long format comic books that is rarely found in Indian comic books.

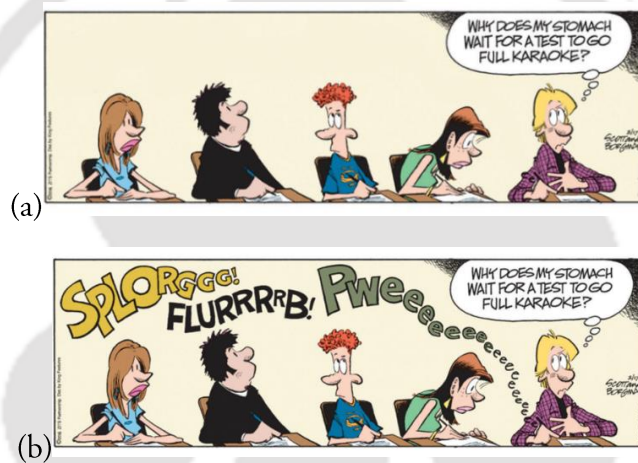


Figure 5.2 Comic strips (a) with edited SSW (b) Original strip with SSW from *Zits*® by Jerry Scott and Jim Borgman ©2016

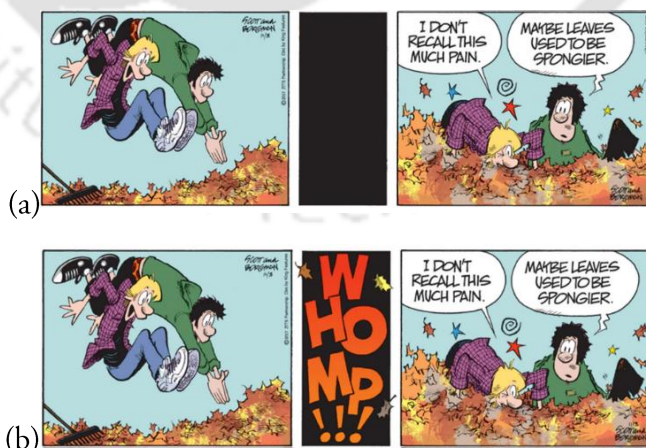


Figure 5.3 Comic strips (a) with edited SSW (b) Original strip with SSW from *Zits*® by Jerry Scott and Jim Borgman ©2017

In figure 5.2(a), starting from left we see some teenage characters writing papers. Each one of them is facing in different directions with the second and third character looking upwards (we are not sure what they are looking at). Finally reaching to the thought balloon where Jeremy questions himself, *“Why does my stomach wait for a test to go full karaoke?”* The punchline does not make sense as we are left wondering about ‘karaoke’ and what does Jeremy mean by that during the test day. Also the character’s gazes appear curious and providing incomplete information.

In the figure 5.3(a) another strip from Zits is shown where we see Jeremy and his friend jumping in a heap of leaves. The second panel is black that might suggest a blackout because in the third panel we read the punchlines indicating their pain after jumping in the leaves. Here also, it is curious to know what happened in the middle black panel and since Jeremy talks about pain, how badly they got hurt? The narrative loses some information hence looks incomplete.

The original top strip in figure 5.2 (b) can be seen with SSW that are indicative of sounds of something squeezing or mushiness and sustained sound with gradually reducing intensity (suggested by decreasing size of letter ‘e’). This time while reading the strip we do not counter the teenage characters first, rather we start reading the SSW and simultaneously see the character’s gazes. The middle two characters are looking at the sound with the punchline making full sense of the meaning of ‘karaoke’. The color of the SSW suggests stomach gases or acids that are shown with yellow, dark green and black color while the wavy warping signifies the floating sound in the air.

Similarly, figure 5.3(b) contains the SSW *‘Whomp!!!’* that signifies a collision. It is supported by ESE, the small leaves that create additional effect of leaves scattering due to the jump. Now it is clear that they did get hurt after jumping and the size, weight and the color of the SSW strongly signifies that the intensity of the impact must have been terrible and that lead to the punchline. The SSW is placed on the borderline of the pre-impact and post-impact action and plays a crucial role in holding the exact moment of impact without showing it.

Zits is abundantly rich with many more cases where the SSW acts more than just a signifier of the sound and links the narrative, making it more communicative and interesting. The instances discussed hereby suggests that SSW are not just a visual element to convey sound but plays a larger role in the narrative. Its presence can be either simply for enhancing the action/event or it is a part of the discourse and removing it would create a confusion in the narrative.

The importance of SSW is noticed in some levels. Its presence is secondary in the story, and it is added for amplifying the visual effect of the scene or action. In these cases, the story could be understood without the SSW. There are instances where the SSW is absolutely necessary to understand the story. Its absence will create confusion in communication (like shown in figure 5.3-a). In these cases, the SSW is a part of the discourse and has similar importance like image and text in the narrative.

In this chapter it is argued that apart from conveying sound, SSW functions as marker suggesting different aspects of narrative. They help in uniting different element in the panel letting the reader decipher the relations between actions and events (Guynes, 2014). SSW conveys the idea of time in the narrative, they convey the idea about the space in the composition, they convey the emotional states of the characters, they bind disparate images and create a stronger meaning and also they are able to identify characters and ideas to the reader. All these aspects of SSW in narrative is discussed in detail in the following section.

5.1 Corpus for this study

Graphic novels arguably have a different visual style of presenting the story. Some of the immediate differences can be noticed in the use of monochromatic palette, with hard back covers and diverse range of themes and other formal differences. Even though graphic novels in full color are available, the visual style of drawing the image and the storytelling is very different from Superhero genre. Graphic novels are usually found with subtle and composed drawing style contrary to the flashy and over the top actions sequences of Superhero comics. More specifically,

they differ from comic books in terms of (a) form (b) content (c) publication format, and (d) production & distribution (Beatens & Frey, *The Graphic Novel: An Introduction*, 2015). Analyzed and discussed at all these four levels of differences, Beatens and Frey in their substantial book on graphic novels distinctly states that:

“We consider then that the graphic novel is a medium, the key features of which can sit on a spectrum on whose opposite pole is the comic book.”⁸

They argue and demonstrate throughout their book discussing the four aspects. In agreement with their arguments and discussions resolve that there are indeed differences in the discourse of comics and graphic novels. Without arguing about the differences in formats and styles between graphic novels and comics, examples and cases from graphic novels were included for this chapter.

Popular and award winning graphic novels (see appendix 4 for the list) were selected and SSW appearing in them is overserved and analyzed. All of them are written and illustrated by the author themselves that gives the chance to perform outside editor controlled setting and utilize full creative potential in exploring different styles and techniques. This is why these titles displays experimental style of SSW that was different from superhero comics. Therefore, these titles were chosen for the analysis.

5.2 SSW as Temporal-marker

The events in a comic book is drawn inside panels and in some cases extending the drawing to full splash pages even without any panels. Panels can be designed and composed in numerous creative ways considering the narrative. The time in comics is represented through smaller panels and pages (meta-panel). Will Eisner, through his practice, demonstrated how time can be accelerated and slowed down in the narrative. In Will Eisner's terms time in comics is *encapsulated* inside panels (Eisner, 2008). He comprehensively illustrates and explains the timing shown through panels as:

⁸ For a full length discussion on graphic novels see *The Graphic Novel: An Introduction* by Jan Beatens and Hugo Frey, Cambridge University Press, 2015.

“...when there is a need to compress time, a greater number of panels are used. The action then becomes more segmented, unlike the action that occurs in the larger, more conventional panels (Eisner, 1985).”

His demonstrations show a relation between time and panels because his main focus was on drawing the image and its composition. While he discusses about different techniques of time manipulation through panels, there is no mention about use of SSW for representing time. Understanding time in a panel can be done through understanding its different elements. Like Gombrich claims that to understand the time represented in the image it is essential to understand the event represented in the image (Gombrich, 1964). Similarly, in the panels, to understand the time, it is important to study the image, text and SSW in the panel that creates the whole image. In chapter 3, the semantic category of instantaneous and sustained time represented through SSW highlights the same idea of representing time through SSW. A crucial point for time representation is the elongation of the sound by repetition of the letters or words.

The temporal and spatial aspects of a visual narrative have always remained central for discussion among scholars. In visual narratives, it is almost impossible to selectively study time without referring to space and vice-versa. This interdependency of time and space also is noticed in Comics Studies. As McCloud said:

“In learning to read comics we all learned to perceive time spatially, for in the world of comics, Time and Space are one and the same (McCloud, 1994).”

While McCloud summarizes that time and space are same in comics, it posits a crucial problem of understanding the type of time and space he is referring to. For discussions in this section, two types of time is considered in the comics’ narrative: diegetic time and reading time (Chatman, 1975). In printed comics, time and space are shown in the 2D plane i.e. the page. And thus, the time discussed here is in the context of pages and not screen (for motion comic or Virtual reality comics).

In figure 5.4, McCloud shows the time progression in a single panel. While at first reading it appears that the panel is single, therefore showing a single event, but

a closer analysis reveals something different. Reading the panel from left to right, the words ‘*Smile!*’ appears first and initiates the events. Followed by a SSW, ‘*PAF!*’ which is immediately followed by the next speech balloons. The girls laughing ‘*Hee-Hee!*’ is where this event concludes. This much only signifies that the Uncle Henry shouted smile and clicked the camera with a *PAF!*. This much at least has taken up few seconds based on our personal experience. The flash of the camera is followed by the boy’s ‘*Aagh!..*’ suggesting the flash is disturbing him as it is blinding. This must have taken few more seconds. Proceeding further we continue reading the dialogues of other characters and finally reach the far right end of the panel with the person playing chess and another SSW ‘*Thump*’ under the table for the sound of the pawn placed on the chess board.

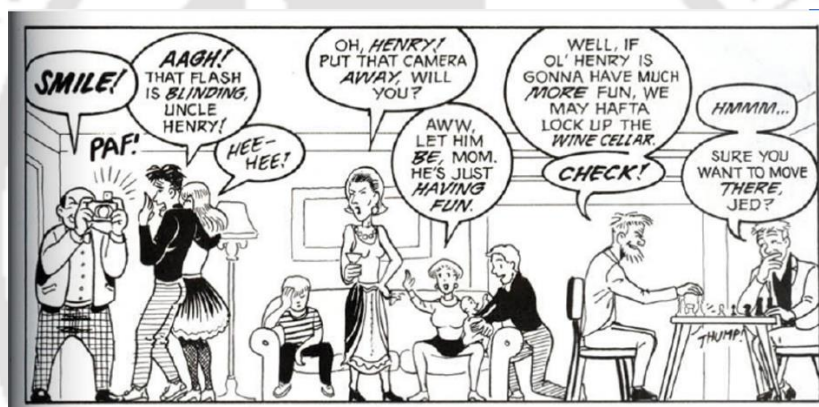


Figure 5.4 Time progression in a single panel through different events (McCloud, 1994), p.95

In this manner, while we perceive reading a single panel as a single moment of time, in reality it shows more time than what we perceive. For this, each dialogue and action needs to be analyzed and progression of time happens so forth. While image and text in figure 5.4 helps to proceed the narrative time mostly, the SSW ‘*PAF!*’ also lies in the linearity of progression and communicates a span of time. It also acts as an element to establish the sense of passing time (McCloud, 1994). Similarly depending on the nature of the SSW used, time can either be shown pacing or slowing down.

In figure 5.5, panels from *Anya’s Ghost* by Vera Brosgol is shown. In the first image (with 2 wordless panels), the SSW ‘*STOMP STOMP..*’ signifies the angry

stomping of Anya as she was forced to go to school and she climbs the stairs with heavy and strong steps.

The SSW is placed across 2 panels signifying a sustained sound for a longer duration. The repetition of the word also helps to signify the continuation of the sound as Anya climbs up and goes inside her room. Interestingly, the repetition of the SSW 4 times across the panels convincingly conveys the whole action of her climbing the stairs, and entering her room. Even though she must have taken more than 4 steps (represented by the 4 SSW), the action is completed in just two panels. The second image shows Anya pointing angrily at the ghost and is about to finish her dialogue when the school bell interrupts her with a loud and sustained sound of 'RRRING'. Here again, the repetition of big letters signifies the longer duration of a louder sound of the bell.

In figure 5.5, a splash page from the same book serves as another example where the SSW is strongly functioning as a temporal-marker. The event is about a physical test (called the Bleep Test) where Anya and other girls has to run back and forth in a given distance with the sound of a 'Beep'.



Figure 5.5 © Brosgol, Vera, 'Anya's Ghost', Square Fish, New York, 2011, p.41, 51, 64-65.

The whole event is about timing and how fast one can run with the beep sound. Both the pages are wordless except a laugh (*HAHAHA*) in the second last panel. From the second panel in the first page, we see the big and bold SSW that marks the first lap and the girls run back for the second lap. With another SSW '*THUDTHUD..*' we almost start feeling the panic and urgency felt by the girls as in the third tier we see their faces with bulging eyes and heavy panting. Proceeding to the next page the '*BEEEEP*' sound is repeated consecutively till the second tier where we now see tired and fallen girls. The page ends with Anya getting distracted by Sean's laugh.

The SSW keeps the reader in a moment of continuous action inducing a sense of sustained time and also including them in the panic felt by the girls. The reading time shortens with the increasing frequency of the Beeps simultaneously shortening the diegetic time felt by the characters. After the first beep, there are action shown (running and panting) whereas the second, third and fourth beep are consecutive, conveying the decreasing duration of time between each beep. This connection of the diegetic time and the narrative would remain incomplete incase the SSW is not provided. Similar to the instances discussed (figure 5.2) in the beginning of the chapter where absence of SSW created incomplete communication in the narrative.

Blue is the Warmest Color by Julie Maroh, is a popular and award winning graphic novel that presents the story of two young women (Emma and Clementine) in love. In figure 5.7, Emma's ex-lover, Sabine, screams at Clementine and abuses her for being the cause of break-up with Emma. Sabine's confrontation was so quick and spontaneous that Clementine hardly gets a chance to speak while Sabine hurriedly rushes away in her car after abusing her. Clementine is still in a suspended state staring at the car which is revving its engine. The car leaves in a haste leaving Clementine numb at the moment.



Figure 5.6 © Maroh, Julie, 'Blue is the Warmest Color', Arsenal Pulp Press, Canada, 2013, p.114

The passing of time is shown here through sequence of panels with SSW. The starting and ending of the words are cropped signifying that the word extends beyond the panel, this in turn signifies that the sound is loud enough to fill the air around Clementine. The warped and cropped SSW half-fills the first panels indicating the direction of the car. The SSW in the second panel decreases in size and leaves from the panel in a floating manner. Thus the SSW in these two panels perform the temporal function (Forster, Borgwalt, & Neef, 2012) and helps to signify the passing time. These two panels also confirm the truth-value (Guynes, 2014) of the action and confirms that the car started and left. The third and fourth panel do not contain the SSW, conveying the car has gone far away. While the presence of SSW in the first two panel suggests the presence of the car, till the time we arrive at the third-fourth panels, its absence also suggests the absence of the car. All the four panels show minor alterations (in position of her eyes) in the image except the SSW. Finally, the third and the fourth panels show Clementine (still shocked) with only rolling her eyes to the start, making a full circle to the event.

SSW mostly appears inside the panels with images, but in many examples SSW were also found as a single element in a whole panel as shown in figure 5.8. The image is from panels of *Miss Moti and her Short Stories* by Kripa Joshi.



Figure 5.7 © Joshi, Kripa, 'Miss Moti and the Sands of Time' from the book 'Miss Moti and Her Short Stories', Self-published, Nepal, 2012.

This specific comic shows her surreal adventure while visiting a dentist. We see Miss Moti reading a book. The perspective is first person where we only get to see the hands of the protagonist as if *we* are reading the book. The next panel contains no image but a SSW that reads 'TICK'. The following panels show similar moments with Miss Moti flipping half way through a single page (with a SSW 'FLIP' in fifth panel). The 6 small panels portray time required to flip a page half way through the book.

While waiting in the doctor's chambers she starts feeling sleepy when she opens up a book and tries to flip through its pages. The rest of the story follows her usual fantasy mixed with surrealism and dream. The SSW replacing the image completely, primarily denotes the ticking clock. Even though it shows passing of a second it feels like time is suspended for her and induces a slow motion effect in her mind. The font is a digital typeface contrasting to the other hand lettered SSW found in Miss Moti series. The digital typeface denotes the mechanical feel of a ticking clock. Even though, the clock is not shown in the second panel, by the SSW it is confirmed that the sound is coming from the clock and nothing else that makes the same sound (pressing buttons, time-bombs etc.). The diegetic time felt by Miss Moti is greater than the reading time. The big letter sizes of SSW indicate that the ticking of the clock of each second is felt by Miss Moti as a loud numbing sound (shown by black panels suggesting a black-out) that gradually leads her to fall asleep and dream. The diegetic time is shown slowing down as she has not even flipped through a single page completely. This sense of time at one hand becoming larger

and appearing to be stretched (inside her head) while the actual action is also happening slowly creates an emphasis on the sense of suspended time.

In figure 5.8 few panels are shown from *Asterios Polyp* to establish the function of SSW to represent the temporality in the narrative. In figure 5.9(a) & (b), Asterios is shown waking up to the sound of the fire alarm and looks through the window outside. A close up of his profile shows his eyes wide open in fear and looking outside. We still do not know what he sees outside that scares him. Meanwhile, the sound of the alarm leads our eyes through the top left of the panel swinging inside the room and leading to the next panel. At the turn of the page (5.8-b), the SSW is now shown in the background with overlapping panels. All the events happening are now floating on top of the SSW signifying the sustained quality of the alarm and giving a sense of passing time as Asterios hurriedly wears his shoes and picks some other belongings before leaving the house. SSW connects the events as a background element on which the narrative is both literally and artistically built upon.

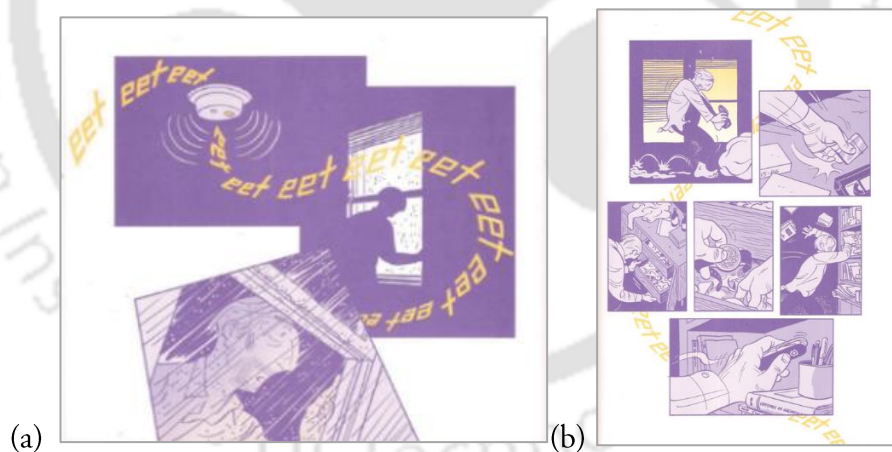


Figure 5.8 © Mazzucchelli, David, 'Asterios Polyp', Pantheon Books, New York, 2009: (a) p.8 (b) p.9

From the examples in this section it could be concluded that the length/frequency of the SSW effects the diegetic time and perceived time. The length of SSW effects time by making the sound appearing longer and for sustained length of time. Whereas the smaller the length of the SSW the shorter the time is experienced by the characters as well as readers. Similar conclusion was also drawn in the semantic analysis of SSW in the previous chapter. However, the important

difference by studying the graphic novels comes from the creative and individual practices of the creators and their employment of SSW. While the syntactic attributes of SSW in these graphic novels remain similar to the comics, the deliberate employment in the story is what makes these SSW different in terms of quality which was rarely found in the comics.

5.3 SSW as Spatial-marker

In the context of comics, space is noticed in two forms: the diegetic space and the representational space (Groensteen, 2009). The diegetic space is the fictional space where characters live and act. This space is visible to both the characters of the story and the reader as well. Whereas the representational space is the physical space (like the page) where the narrative unfolds and is only visible to the reader and the artist. Exceptionally in few cases like in *Little Sammy Sneeze* by Winsor McCay the character is also made aware of the representational space⁹.

In figure 5.9, two panels from (*FunHome* by Alison Bechdel) consecutive pages is shown representing two different spaces connected by SSW. *FunHome* is an autobiographical story of Alison Bechdel and her relationship with her father. Alison and her siblings have come to a farm house for vacation where they listen to the loud noise made by the locusts.



Figure 5.9 © Bechdel, Alison, 'FunHome', Houghton Mifflin Company, New York, 2006: p.156, 157

In the first panel, the SSW are apparently bigger and cropped signifying the sustained pattern of the sound that has surrounded the whole forest and the farm

⁹ See https://en.wikipedia.org/wiki/Little_Sammy_Sneeze and <https://newspapercomicstripsblog.wordpress.com/2016/02/20/little-sammy-sneeze/>

house. The visual space is dominated by the thick words that waves through the upper half of the panel making the sound much more important than the rest of the image. The effect of SSW on the space is more evident due to the contrast in the size of the words and the color used. In the second image in figure 5.9, in the visual space, the speech balloon is overlapped on top of the SSW signifying the less importance given to the SSW this time simultaneously making the size of the SSW smaller using lowercase letters. The sound is still sustained in the diegetic space around Alison but it is softer this time. The SSW that is going out of the panels conveys the vastness of the space in which the farmhouse is situated. In the second panel, the SSW are smaller but still floating out of the panels that helps to connect the previous (outer) space and the current (inner) space where the kids are sitting.

Craig Thompson's '*Good-bye Chunky Rice*' employs variety of SSW in abundance and thus makes an interesting title to study. Figure 5.10 shows set of panels with different actions happening in the dock where Chunky is about to board the ship and leave.

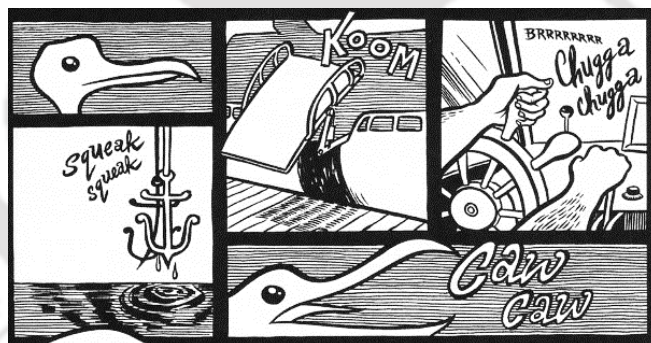


Figure 5.10 © Thompson, Craig, '*Good-bye, Chunky Rice*', Top Shelf Productions, Georgia, 2003: p.40

The whole space is filled with different types of sounds and Craig has tried to embed the ambience and noise of a dock though the varied SSW. The panels show the ship lifting the ramp with a '*KOOM*', the pilot running the engine with '*BRRRRRR*' and '*Chugga Chugga*', the anchor squeaking with '*Squeak Squeak*' and the albatross making the sound '*Caw Caw*'. The whole experience of these set of panels resemble the rapid quick shots and frantic zoom shots seen in movies where different shots of the same scene are shown emphasizing the sound of each scene.

With 5 wordless panels packed in a tight space, the panels are supposed to be visually read in quick pace with sound playing a significant function in conveying the environment. All these SSW introduces the reader to the diegetic space of the narrative and provide the sounds of the dock yard. In the absence of these SSW the narrative of the panels would resemble more like a collage of photographs. The presence of SSW has added the extra dimension of sound and made the space of the narrative lively.

In Adrian Tomine's '*Shortcomings*', SSW are used in a cautious way and in lesser frequency. But wherever they are used, it has been used to enhance the communication and meaning of the image along with the text. In figure 5.11, the sequence of panels shows a small closed gathering of friends where Alice is welcomed to a new home by her partner and makes an announcement. During the announcement, people starts clapping shown by the SSW, '*CLAP CLAP..*' that crosses the three panels. The three panels are almost weaved by the SSW in the physical space but simultaneously it connects the diegetic space too. We look at the first panel and start reading the '*CLAP*' which then leads to the following dialogue less panels.



Figure 5.11 © Tomine, Adrian, '*Shortcomings*', Drawn & Quarterly, 2007, p.105

The continuous and cropped SSW signifies that the events in the panels are happening in the same space even though the camera angles/shots are changed in each panel. The whole diegetic space is thus verified to be a space where people are clapping in joy and the girls celebrate by kissing each other. Also, the variations in the size of the SSW helps to convey the claps coming from people standing in front

as well as far. The SSW are placed in a linear pattern whereas the change in perspective provides a spatial juxtaposition of the different moments.

Another example from Craig's graphic novel *'Blankets'*, associates the SSW with the space of the narrative. Figure 5.12-a shows a scene where Craig and Raina are hiding under a hoop in a summer camp play house while everybody else is engaged in various loud activities. The diegetic space represented here are shown in three levels from smallest to biggest. The first space is the smallest one where both of them are hiding. The second space is the play house where everybody else is engaged and which contains the smaller space. The third space is the outer space that includes the environment of church and it contains the previous two spaces.



Figure 5.12 © Thompson, Craig, *'Blankets'*, Top Shelf Productions, Georgia, 2003: (a) p.121 (b) p.122 (c) p.122

Figure 5.12-a shows the playhouse and their hiding place. The contrast between the two spaces is shown through the scribbled and detailed drawing of the playhouse and the white empty space of Craig. Even though they are hiding in a dark space, still the bubble is shown in white, contrasting the outside space. The outside space is filled with different types of SSW and appears cluttered. Whereas Craig's world is shown with only a big 'Z' conveying Raina's sleep. The SSW is almost in the middle of the panel, written in big and bold ink that helps to differentiate between the noise and silence of the two spaces.

Figure 5.12-b is continuation of the previous panel and shows the montage of all the three spaces weaved by the SSW. Craig and Raina are enclosed in the playhouse which is represented by the different SSW this time and not by showing the playhouse. The page contains minimum dialogues (mostly in the background) composed with crowded SSW, and ends with a wordless panel. While we are not shown the actual crowd leaving the play area yet the crowded and tightly composed SSW that includes '*Slams*', '*Shuffles*', '*Scrapes*' etc. effectively communicates about the space and actions around Craig and Raina. The SSW are further encapsulated by the bigger outer space of the church where the SSW of the bell dominates the sky. The space between the outside and the inside is flooded by different SSW of the playhouse and beautifully merges the three spaces.

Arriving at figure 5.12-c, we see '*SLAM*' written in thick brushstrokes at the top left of the panel. This immediately sets a contrast to the previous panels which was cluttered with SSW, strongly suggesting that the crowd has left the area with the last person closing the door with a 'Slam' and Craig's world is safe and silent now. Finally, the third panel actually shows the empty play area providing a closure to the whole page. The SSW binds the narrative happening in the three spaces which has different activities and sounds and thus functions as a spatial marker.

Similar occurrence and employment of SSW denoting the space and ambience is observed in figure 5.13-a.



Figure 5.13 © Thompson, Craig, 'Blankets', Top Shelf Productions, Georgia, 2003: (a) p.32 (b) p.33

Little Craig is humiliated in the class while he remembers the molestation in his childhood to his little brother. The page acts as a meta panel with minimum dialogue with the bell sound '*DING DING..*' placed at the bottom of the page .

The composition of the page merges memory and present with the black cloud like shape narrowing on Craig and becoming fragmented in the form of the SSW. Craig is placed in the junction of the ground and the black smoke. The SSW effectively helps Craig to snap out of the traumatic memory and bring him to the present. The size of the SSW becomes smaller in the second line signifying the decreasing intensity of the ringing bell. Its heavy weight of the letters conveys the burden that is settled in the bottom of Craig's mind through the trauma. The size further becomes smaller in the following page (5.13-b).

In these two panels, SSW functions as a spatial marker to convey the continuous space of the inside classroom and outside school. While the SSW in the classroom provides a sense of accumulation and breathlessness, the same SSW in the next panel provide a sense of relief by adding it to the outer view of the school.

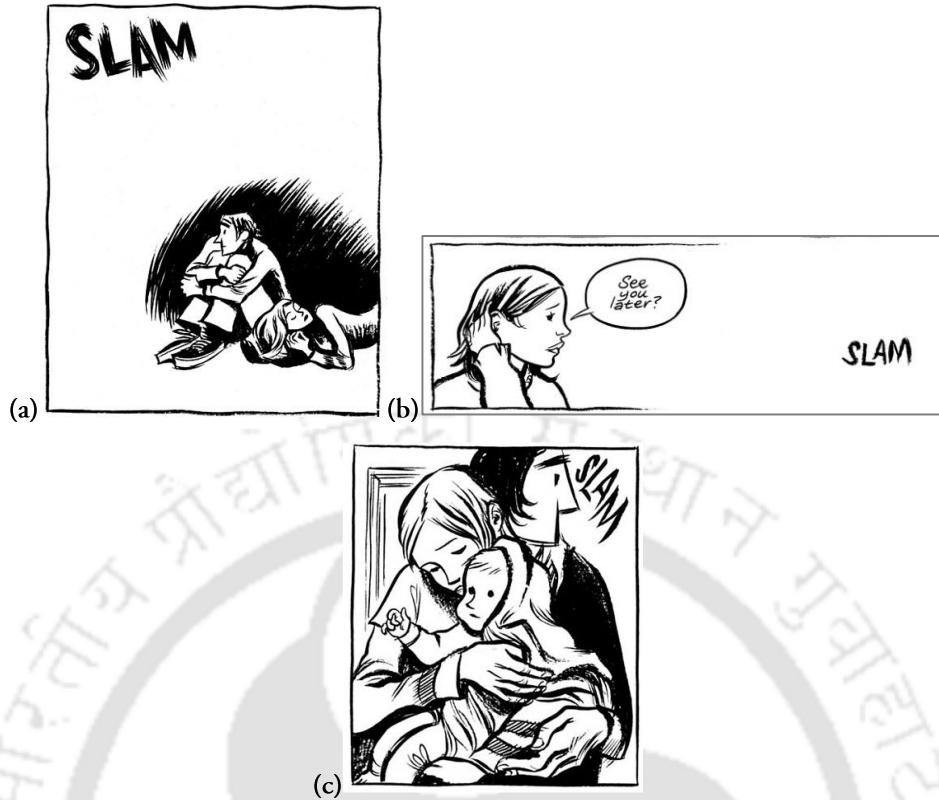


Figure 5.14 © Thompson, Craig, 'Blankets', Top Shelf Productions, Georgia, 2003: (a) p.122 (b) p.101 (c) 268.

Some other panels from 'Blankets' signify similar function of SSW where it becomes a spatial marker in the narrative. In figure 5.14-a, the SSW 'SLAM' conveys the door closing by the last man in the playhouse leaving Craig and Raina alone. In 5.14-b, the 'SLAM' conveys the door closing by Craig in between a conversation with Raina. In 5.14-c, the 'SLAM' once gain conveys a door closing by Raina's friend leaving Craig and Raina with a baby.

In 5.14-a, the SSW is positioned in top of the panel conveying the vastness of the outer space in which they are hiding. In 5.14-b the floating SSW in the space leaves Raina as well the reader without clues that whether they will meet again or not (much like her question). Here, the SSW is smaller and lighter in weight conveying a different sense of space than the previous panel. The space suggested here is smaller than the previous one. They were inside a dormitory room but the hanging SSW in a white space with an incomplete panel border conveys the incomplete conversation between them. In 5.14-c the SSW conveys a smaller and tighter space which is further shown by the overlapping bodies of the characters. In

all of the three instance, the absence of SSW would create an incomplete meaning. The spatial references that is conveyed by the addition of the SSW in each panel with different weights and positioning, creates a sense of connection between the narrative, its characters and the readers.

5.4 SSW as Action-marker

In general idea of SSW it could be said that they are words that signify some actions. However, there is difference in the action shown in superhero comics and in graphic novels. In graphic novels, the action is more in the cognitive level than the physical. Many implicit instances of actions are found in them that subtly convey the message. SSW in this context of action, functions as action marker to convey implicit or subtle actions.

An example from a masterful graphic novel, '*Daytripper*' by Fabio Moon and Gabriel Ba displays function of SSW as action-marker. In figure 5.15, the two panels are from a continuous page of the story. The two panels in the top and bottom shows a pivotal moment where Bras is stabbed and killed by his best friend Jorge in the deserts. The panels contain minimum narration in the boxes while the action takes place in the dark stormy desert.



Figure 5.15 © Moon, Fabio; Ba, Gabriel, '*Daytripper*', Vertigo Comics, California, 2011, top p.174, bottom p.175

The SSW used for stabbing is '*KT KT KT*' that is repeated several times in the two panels. The short sounding word and only two letters signify the swiftness of

the gruesome act shown. The thin weight of the letters additionally signifies the sharp nature of the sound. The action of the act can be judged on two aspects. First, we are shown the act itself with the SSW. Here, Bras is stabbed four times. Once we are made aware of the SSW and what it represents, the repetition of the SSW in the second panel convincingly signifies the continuous gruesome action. Even though the action is not shown, still it is happening in the reader's mind while reading the SSW in the second panel thus making the SSW's action-marker.

In a page from *Asterios Polyp* by David Mazzucchelli (Figure 5.16), a huge lightning is shown striking while Asterios is lying inside his bedroom. The flash of lightning was so intense that it sets his house on fire. The full page is employed as a meta-panel with no dialogues and minimum detailing. The page is masterfully divided in positive and negative space with only highlighting the shadows formed by the lightning. The SSW 'KKLAPP' straightway pierces through the top left of the page bleeding the page border. The lightning literally takes the form of the SSW thus making the image and word one and the same.

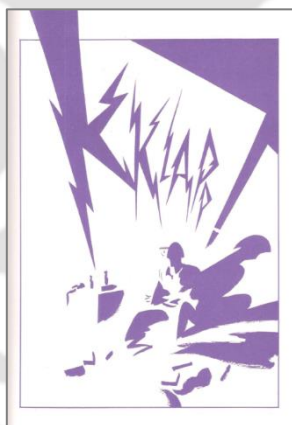


Figure 5.16 © Mazzucchelli, David, 'Asterios Polyp', Pantheon Books, New York, 2009: p.7

The action shown here is a phenomena and not a physical action. The absence of SSW in this image would not make sense at all as it takes the form of the image itself. This hybrid nature of SSW functioning as an image-text combination conveys the action while simultaneously conveying the sound too.

In an example from *Ghost World* by Daniel Clowes, Enid and Rebecca visit Josh's apartment and knocks loudly with a 'BAM BAM' (figure 5.17). Whereas in the

second image the banging of the door is now transformed into a sober knocking of the door ('*KNOCK KNOCK*') because Enid has come alone this time to spend some consoling moments with Josh at night.

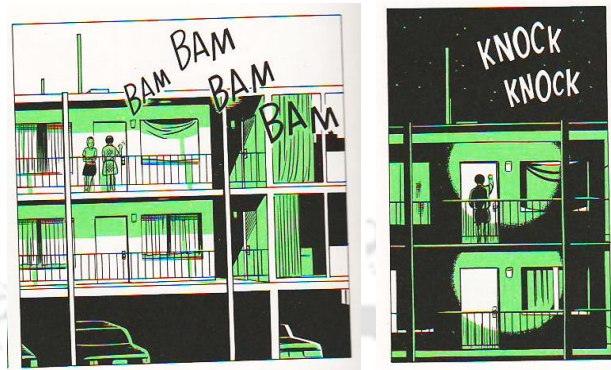


Figure 5.17 © Clowes, Daniel, 'Ghost World', Jonathan Cape, London, 1993: p. 56, 60

The difference in action is conveyed by the selection of the SSW in both the panels. While the first panel conveys a repeated loud banging of the door, whereas the second one is a softer action performed. The actions of the character in both the contexts is thus appropriately shown by the SSW.

Similar type of relationship is established in *Good-bye, Chunky Rice* by Craig Thompson (figure 5.18).



Figure 5.18 © Thompson, Craig, 'Good-bye, Chunky Rice', Top Shelf Productions, Georgia, 2003: p.1 & 120.

This graphic novel surprisingly opens with a SSW, '*CLUNK*' placed against a black page with a smaller wordless panel at bottom left that shows the two characters of the story. After reading the SSW we look at the panel and find Chunky Rice (the

turtle) raising the window and looking at Dandel (mice deer) who is on a cycle. Among other elements of the panels we see on the ground, in front of Dandel, a small stone. Only after turning the page we find Chunky saying, *"Someday you're going to break my window throwing rocks at it like that."* This dialogue immediately helps to clarify that Dandel has thrown a stone at Chunky's window and that sound 'CLUNK' is what we read in the opening page. In this case, the SSW is an essential part of the narrative and the absence of it will create confusion while reading Chunky's dialogue.

Similar composition like this appears at the end of the story in the last page of the graphic novel. The same SSW is used in similar black page but this time the wordless panel is composed at the bottom right. Chunky is again seen in the same position as in the page 1 with his arms holding the railing of the ship (contrasting to the page 1 where he is holding up the window). He is again looking down but this time instead of Dandel's rock, it's a glass bottle with a message inside it that hits the ship and made the same sound that Chunky is used to hear. For him it is the sound of Dandel's arrival and presence and the SSW brings Dandel's memories in the form of the sound (memory is a strong theme in this graphic novel which is seen throughout). As he is separated now, the SSW 'CLUNK' of the bottle symbolizes Dandel's arrival (in the form of a message). The whole narrative is brought to an end with a similar action shown by the SSW.

Craig's employment of SSW as an action-marker is part of his creative discourse (found in his works throughout) where he masterfully weaves the narrative through a SSW that not only acts as a word but provides the readers with notions of memory, separation, absence and many other emotions that the character's feel and in the process readers are made to feel.

While in the previous example the SSW functioned as an implicit action-marker, in figure 5.19, the SSW can be seen as more direct action-marker in the story. The four panels in figure shows Miss Moti jumping over a thief and crushing him in the climax.



Figure 5.19 © Joshi, Kripa, 'Miss Moti and the Ultra Girl', from the book 'Miss Moti and Her Short Stories', Self-published, Nepal, 2012.

There are two sounds here that represent the action: '*HIYAAA*' (Miss Moti screaming) and '*POW*' (Miss Moti crashing). While the first words are not exactly a SSW but still it is considered in the analysis because it is treated as a SSW. The first panels show the thief turning right and searching for the source of the sound. However, in the second panel we see that Miss Moti is jumping from above (confirmed by the angular upward motion lines and her hair flying upwards). In the diegetic space, the thief is understood as standing on the ground while Miss Moti is understood as jumping from above. These two panels are literally connected with '*HIYAA*' as if bridging the events and confirming the truth value that the thief is surprised with the sound and looking for it. Thus, '*HIYAA*' acts as a SSW at the same time functions as an action-marker conveying the action happening in the two panels.

Proceeding to the third panel we see a flash star with '*POW*' inside it replacing the image. The SSW makes sense for three reasons: firstly, readers of comics are mostly familiar with the sound of punches and other banging sounds represented as '*POW*' (also seen in the popular *Batman* t.v series of 1966). Over a period of time, this word has become synonymous for punches and clashes. This is also supported by the idea that viewer's prior knowledge helps in understanding and deciphering the meaning of the visual narrative (Pimenta & Pooviah, 2009). Secondly, the events shown in previous panels confirms it further that Miss Moti *must* have jumped on the thief. And lastly, the climax panel without any doubt confirms the truth value by explicitly showing Miss Moti on top of the thief (the knife at the top left corner is an added confirmation for this). Thus, even though the '*POW*' is used

in a suppletive panel¹⁰ (Cohn, 2013), the narrative coherence retains and we are confirmed with the truth value of the SSW to be signifying the clash between Miss Moti and the thief thus making the SSW functioning as an action-marker in between the panels.

5.5 SSW as Emotion-marker

As an emotion-marker, SSW enhances/conveys the emotions of either the characters or the reader. The SSW can function as emotion-marker through the composition, arrangements, or placement of the SSW in the story. The presence of SSW as a simple text is also sufficient to forward the story but arranging and composing it in creative ways enhances and strengthens the emotional impact of the narrative.

The narrative is understood while gradually understanding the panels page by page and in relation to one another. While the relation is stronger among the adjacent sequential panels, the relation might appear weaker among panels from different pages. However, Thierry Groensteen in his book *System of Comics*, proposes that all the panels in a comic book has some relation among themselves in the narrative (Groensteen, 2009). And to achieve the implicit relation among all the panels the narrative elements (image, text and SSW) have to be used deliberately. The narrative element fortifies the story and creates a stronger meaning within the narrative structure. The connection or relation with all the panels in a comic book is the narrative connection that remains implicitly embedded in the discourse through the fortifiers.

¹⁰ Neil Cohn in *Visual Language of Comics* discusses suppletive panels as panels that are used as signs to replace any other events (like fight cloud for fighting, hearts for romance and so on), p.52

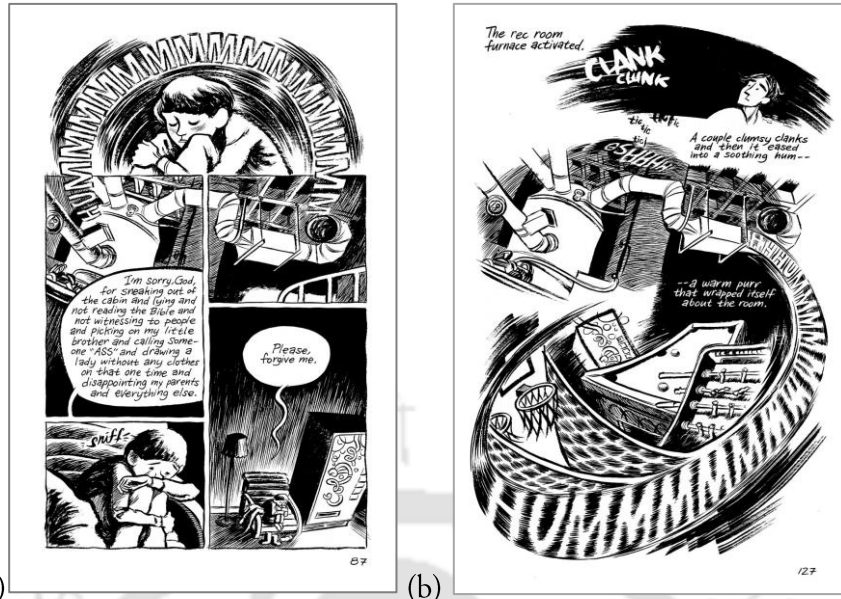


Figure 5.20 © Thompson, Craig, 'Blankets', Top Shelf Productions, Georgia, 2003: a) p.87 (b) 127.

In the first image of figure 5.20-a, little Craig, while attending the summer church camp flunks from the dormitory at night and breaks in the restaurant-cum-play area. While sitting there suddenly, the furnace inside gets activated with a loud 'HUMMMMMM,' sound. The SSW with thick capital letters warps upwards and wraps around Craig almost encircling him while he confesses to God for his bad behavior and sins. Few pages later (5.20-b) when Craig grows up and attends a similar church camp again, he's seen in a recurring situation, but this time Raina (his love interest) is with him. However, in this page, contrary to page 87, the SSW, 'HUMMMMMM' is placed at the lower half of the page. The warping is not symmetrical like the previous one. Even the letters appear to be textured to signify a windier and dynamic SSW. Both these pages display contrasts in layout and composition also. While page 87 contains structured 4 panels with a borderless panel on the top, page 127 does not follow the traditional panel style division of the page. Rather it appears as a single piece of illustration composed with minimum narration as compared to page 87. This also symbolizes Craig's transformation as he becomes more liberal and breaks away from his conservative orthodox boundaries (from panels to no panels). The SSW conveys more than the sound and

implicitly symbolizes the transitions of the events and existents and in the process fortifies the meaning.

Adrian Tomine in his graphic novel *Shortcomings* (in figure 5.21) portrays in a skillful manner the frustration felt by Ben in not being able to find Miko (his lover) and talk to her. The three panels are wordless with only SSW in the first and the third panel. The act of Ben slamming the phone with 'SLAM SLAM SLAM' is contrasted by the silent second panel. The silence is again broken by the 'RRING' in the third panel. This rhythm of sound and silence is deliberately designed with the help of the SSW that fortifies the frustration and the loneliness felt by Ben.

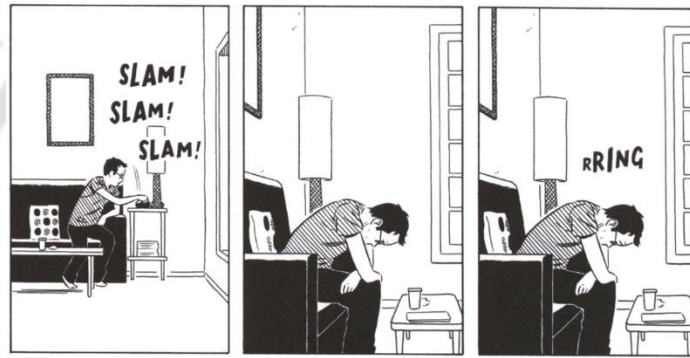


Figure 5.21 © Tomine, Adrian, 'Shortcomings', Drawn & Quarterly, 2007, p.74

Adrian Tomine designed another page with minimum dialogues and abundant SSW. In figure 5.22, Ben attends a performance by his friend Autumn who performs an experimental show of music and performance art. With the dialogue in the first panel only, the rest of the panels shows moments of the performance with loud music accompanying the act. The SSW are repeated and warped in waves with varied letter sizes that shows the varied sound of the instruments in the act. The total performance appears to be shocking and as he tries to make sense of it. The peculiarity of the music is fortified with the SSW 'KRRANG' and 'SKREEE' particularly as these two words does not sound to be soothing and rhythmic (when spoken). With the selection of the words along with the random positioning of the SSW functions as an emotion-marker for the performance's loud and idiosyncratic qualities.



Figure 5.22 © Tomine, Adrian, 'Shortcomings', Drawn & Quarterly, 2007, p.43

The functions of SSW in all these instance is not restricted to representation of sounds only but to enhance the emotions too. Like in figure 5.5, Clementine is suppressed by the SSW in the first panel and when the car leaves, the suppression vanishes and there is a sense of visual relief in the panels. Contrastingly, in figure 5.15 when the brutal action of stabbing is not shown in the second panel, still the emotional effect increases as the reader has to imagine the horror of the rest of the act by only reading the SSW. Thus, SSW goes beyond its boundaries of being a sound-signifier to an emotional-maker and makes the narrative interesting.

5.6 SSW as Identity-marker

We are surrounded by numerous symbols, some of which has a direct association with meaning and some don't. In comics also, the recurring symbols or visual metaphors are found in abundance. Many visual metaphors have been established through conventions and also through with metaphorical utility (Hall, 2007). Whether it's a bat sign in the sky which acts as a visual identifier about Batman's arrival, or the red and blue streak in the sky that confirms the presence of Superman in the sky, comics uses these codes as identity-markers to forge the reader's mind time and again about certain characters or objects (Oyola, 2011). In the context of

SSW, they can be read as well as seen like an image so they are called here as identity-marker and not visual metaphor. It is thus discussed here that how SSW can convey characters and concepts without actually showing them.

In typographic studies it has been observed that the letterings and typefaces emit their own personalities (Brumberger, 2003). Similarly, when a SSW is stylized to suit a character or event, a certain personality gets attached with the SSW that acts as a marker to specific meaning. Over a course of time, the repeated use of the SSW helps to strengthen its position as an identity-marker.

In the context of the world of comics, SSW acts as markers to indicate time, space and characters¹¹. SSW are visual elements and emit certain visual attributes to resemble a sound (like typefaces). These attributes not only help to realize the sound but they also become visual clues to understand unwritten messages.

An important point to be noted here is that the examples (in this section) comes from comics and not graphic novels. This is because SSW as identity-markers were mainly observed in popular mainstream comics because of their periodic publications. Whereas graphic novels are mostly single volume publications with rare occasion of repeated occurrences of SSW that provide less chance to the SSW to become an identity-marker. In comic books, the scope is high as they are published in weekly/monthly basis that help them to connect with the readers to become identity-markers.

The SSW '*Snikt*' acts as an identity-marker in Wolverine's comics. In X-Men, Wolverine's claws make a sound '*SNIKT*' whenever they come out. This sound has almost become a standard for identifying Wolverine's claws and are so popular that Marvel trademarked it for few years, however the current status of the trademark appears to be abandoned. The SSW '*SNIKT*' is also used as the title for a wolverine series done by a manga artist. This really shows that the SSW can perform more than it is meant to be. It can cross the boundaries of representing sound and become

¹¹ There are many examples of signature sound effects that are used across different medium like Anime, Manga, comic books, Live action film, video games etc. Know more at <http://tvtropes.org/pmwiki/pmwiki.php/Main/SignatureSoundEffect>.

synonymous to a whole character, reflections of which can be seen in merchandises also (figure 5.23-c).

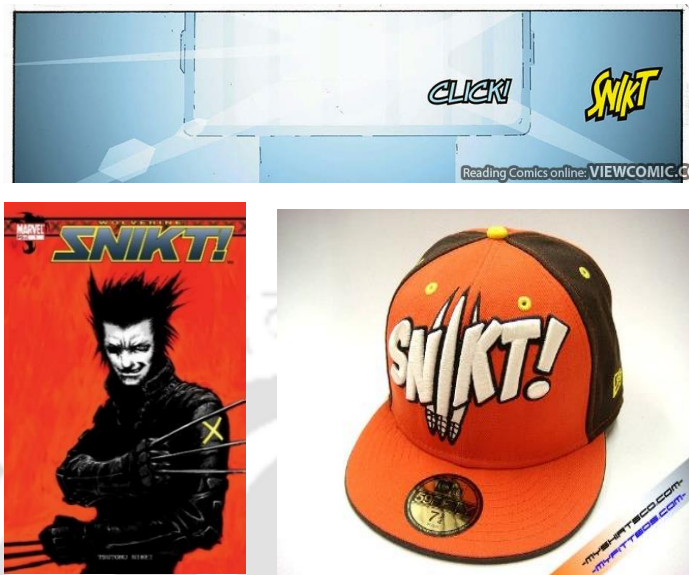


Figure 5.23 a) 'SNIKT' sound of Wolverine's claws in a panel (b) 'SNIKT' as a cover title (c) 'SNIKT' on merchandise

Similarly, Spiderman's web-shooting sound is represented by '*THWIP*' (started from Amazing Spiderman #28) which has also become popular and extensively used for identifying Spiderman's presence. Figure 5.24 shows two panels that contain the SSW '*Thwip*'. In the first panel, a girl is shown falling from a height and caught by webs with the SSW written on both sides. Similarly, the SSW is shown in the next panel with just hint of webs stuck on the ground. Both the panels immediately convey that Spiderman is present out of the panel. In case the SSW is not written with the image, in the first panel the web shots would appear as ropes whereas in the next panel the web shots might appear as something spreading and sticking. In any case the absence of SSW would create confusion about Spiderman's presence that is appropriately confirmed by using SSW.



Figure 5.24 a) 'THWIP' of Spiderman's web shooting

Marvel's Nightcrawler has popularized another word '*BAMF*' so much that a panel containing just the word is sufficient enough to identify the transporting act of Nightcrawler. Figure 5.25 shows his act of transportation with the SSW place in the middle. The sound of the word *Bamf* emits a vanishing in the air feel that stands for Nightcrawler's transportation. In many instance, the image containing only the SSW is sufficient enough to convey the strong gush of wind escaping to the empty space of Nightcrawler. Similar to Spiderman's presence, *Bamf* confirms Nightcrawler's presence (or rather his absence) and functions as an identity-marker.



Figure 5.25 '*BAMF*' of Nightcrawler's teleportation

How or why these SSW became associated with the intended ideas is difficult to comprehend (cognitive studies might be helpful in this context) as some words stick to the readers well as compared to others. But it could be said without doubt that SSW do have a strong quality of becoming an identity-marker to convey events and existents thus going beyond their use as an accessory.

5.7 Conclusion

Visual narratives consist of many elements to tell the story. Printed Comics as a form of visual narrative consists of image, text and SSW to convey the story. In agreement to this idea, this chapter therefore investigated role of SSW in the narrative of comics and argued the different functions performed by them. To understand their function, graphic novels were chosen for this study as they have different visual style than superhero comics. It is assumed that their narrative is more layered than superhero comics and that will provide a scope to investigate

function of SSW in a different format. It is approaches through which they become inclusive in the narrative and convey meaning.

This chapter showed that the SSW functions at a broader level to create layered meaning apart from conveying sound. The current chapter investigated the role of SSW in the narrative of comics and proposed it as a part of discourse of narrative. Though the examples are discussed under category of different markers, these roles may not be exclusive. A SSW can simultaneously contribute to more than one function. Their study as different markers specially helped to discuss SSW in the structure of visual narrative.

It is argued that SSW are not only meant to convey the sounds but also functions as *temporal-marker*, *spatial-marker*, *action-marker*, *emotion-marker* and *identity-marker*. As a temporal marker the SSW contributes in understating the time of the narrative, as a spatial marker it helps to understand the diegetic and physical space. As an action-marker, SSW conveys the subtle actions even without the presence of an actual event. As an emotion-marker, SSW enhances/conveys the emotion of the story characters or the readers. And lastly as an identity-marker, SSW functions to identify concept/characters/ideas in the narrative.

The previous chapter followed the Prescriptive study phase of DRM. Whereas this chapter falls in Descriptive study I phase. This deviation from the DRM stages is done purposefully to extend the scope of the research. The understanding from chapter 3 is converted in to design guidelines in chapter 4. The understanding from this chapter is however not going to be transferred in a conventional design support. It is beyond the scope of this study. Rather this aims to create a ground where creators can develop their own design support based on this chapter and the suggestive guidelines already presented before.

This chapter therefore provided the understanding of SSW beyond its boundaries of representing sound. This discussion thus opens a vast possibility for Indian comic book artists to speculate on the idea of SSW as a narrative element. The examples discussed in this chapter were taken from international graphic novels

that are created with deliberate thought process and design. Since, in Indian context, such utility of SSW is hardly found therefore this study relied on International graphic novels. Hopefully, this will provide an initial motivation to the Indian creators to look beyond the trajectories of sound effects and utilize SSW as a narrative element.



6. Conclusion

As a child, copying the drawings from comics was a regular amusement for the researcher. Over the years, this amusement gradually transformed into passion leading towards a profession to make comics. This fascination slowly to an academic investigation while practicing comic arts. And thus, the present study was born that could be appropriately placed between practice and study of comic arts.

This research has come to a junction where it has to be given a closure (without the gutters) for beginning of another journey. It began with the discussion of comic studies from various domains and presented many definitions of comics. In a broader view, there were many similarities found among all the definitions of comics. From the review of literature, it is found that image and text are the two modalities that has been extensively discussed in academia. It is then identified that the third modality i.e. the Sound Symbolic Words (SSW) has not been investigated from visual communication perspective. It is thus an underlying motive of this study is to investigate SSW as the third modality of comics that lies in a dichotomy of image and text. Further critical review of literature on SSW provided more insights from different domains. It is found that any understanding of SSW in comics is rarer. There was no literature found on SSW in Indian comics. These lacunae guided the formulation of the research questions which were answered throughout the thesis.

This thesis is placed in a union of different domains like Comics Studies, Graphic Design, Semiotics and Visual Language. The theories borrowed from these domains helped in understanding SSW in micro as well as macro details. Thus, a unified whole knowledge about SSW is developed and articulated.

The research design of this thesis is based on the Design Research Methodology (DRM) proposed by Blessing and Chakrabarti. The study carried through this thesis is based on iterations among the different stages of DRM. Within framework

of DRM, semiotic tool was used to understand the structure and meaning of SSW. The iterations were necessary and proved immensely helpful in order to contemplate and scrutinize on the research questions with more rigor. The research stages are partly executed in parallel to gain valuable insights from each stage and strengthen each stage with the desired amount of understanding.

6.1 Research Clarification

In the RC stage, the prominent literature on SSW were discussed for a better understanding of the research problem. The objectives that were set at this stage were:

- a) To identify and understand the broader literature on SSW in comics.
- b) To identify the probable research lacunas and formulate research questions.

In the chapter 1, the research domain of Comics Studies is introduced and discussed.

Comics research in Europe, America and Japan have seen the growth in academic discussions since the early 20th century. The attention to comics for scholarly discourse has helped it to prove significant enough as a domain of academic studies. The long history of academic scholarship built a space for them where further scholarships are being developed. The people from comics industry work closely with scholars and it helps them to build a sustained relationship between academia and industry. The interaction between academia and industry is thus positively boosting Comics studies and helping other cultures understand its value.

Unlike in other countries, Comics studies in India is still in developing stages. Comics came to India as a foreign medium of storytelling. It mainly remained an entertaining medium for readers. To a large extent Indian publishers have succeeded to make profits from the comic books. However, the commercial aspect of comic books have overshadowed the requirement of academic discussion of the medium. Mostly relying on Superhero, mythology and historical genres, Indian comics rarely collaborated with academia for scholarly discourse. Due to this disconnect, the

potential space for growth and acceptance of Indian comics in world scholarship is significantly lower than other countries.

In the RC stage, it is found that there exist numerous definitions of the medium within and outside the industry. Both scholars and practitioners of the medium have tried to define it from their perspectives. Some of them have a similar arguments and some are contrasting. For the premise of this research comics is defined as a printed form of book that tells a story with images and text encapsulated in small panels (mostly in rectangular shapes) that are composed in a sequence that is read from left to right and top to bottom (except Japanese and other specific cultures). The text is divided as dialogue text, narration text and sound symbolic words. This definition suited the purpose for the sample collection and analysis. More

Scholarships on Comics studies have mostly delved in to the understanding of image and text modalities. Many scholars discuss about the multi-modal capabilities of the medium of comics but their argument revolve around discussing image and text only and the third modality i.e. the sound remains unexplored. It is found that the sound in comics is an important part of the narrative discourse and the element through which sound is represented is SSW. The SSW consists of smaller categories as phonomimes, phenomimes and psychomimes. While phonomimes are closer to onomatopoeic sounds, phenomimes and psychomimes are more symbolic of expressions signifying inaudible sources (like emotions and feelings).

The understanding gathered from the literature review and conversation with the creators helped to formulate the research questions for the thesis. The RC stage is thus concluded with formulation of four research questions. These are:

RQ 1. What are the syntactic attribute of SSW in Hindi comics?

RQ 2. What are the semantic attributes of SSW in Hindi comics?

RQ 3. What is the role of SSW in the narrative of comics?

RQ 4. What type of Design Support is possible to create for comic book designers?

With these questions, the thesis proceeded to the understanding of SSW in the next chapters.

6.2 Understanding the attributes of SSW

The understanding of SSW was required to propose a design support for SSW. This stage used semiotic analysis for the samples from Indian comic books. In this stage the main objectives fixed were:

- To identify the syntactic attributes of SSW in Hindi comic books.
- To identify the semantic attributes of SSW in Hindi comic books.
- To understand the function of SSW in the narrative of comics.

In chapter 3, the DS I stage is manifested with identification and analysis of the RQ 1. The understanding of SSW is carried by analyzing it as visual signs appearing in the narrative of comics. This chapter initiates the understanding of SSW and proposes a process of SSW creation based on the five phases (see figure 6.1).

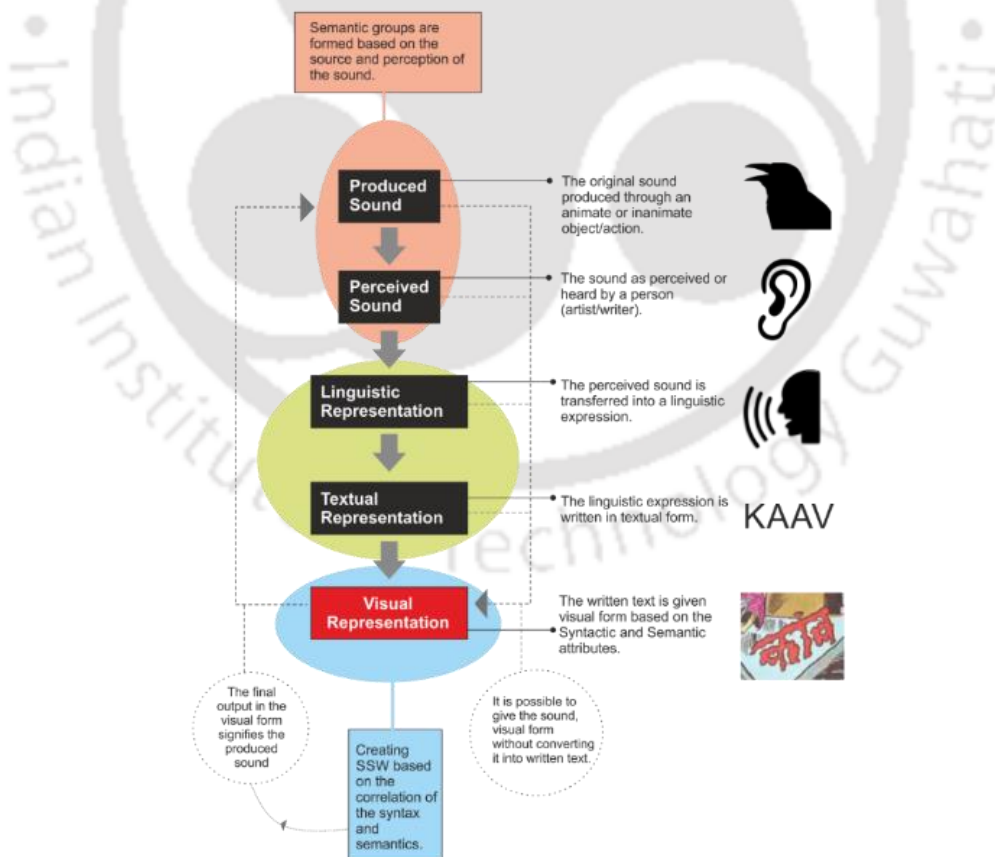


Figure 6.1 The different stages involved in creating SSW.

Out of all these phases, this thesis is focused in the Visual representation phase of SSW. This phase lies in the domain of visual communication. All other phases were more suited for study from either linguistics or cognitive science perspective and thus kept out of scope for this thesis.

The samples were collected from all Hindi comic book publishers. Later, only Raj comics was chosen for analysis as it suited in the criteria selected for the sample selection. This section provided with the understanding of state of Hindi comic book publishers in India. Most of the publishers are shifting toward publishing comics in English.

The analysis helped to identify 15 syntactic attributes that are predominantly found in Hindi SSW. The syntactic attributes are the anatomical features that helps to create the visual form of the SSW. Through the analysis it is found that there exist hardly any typefaces for Hindi SSW. In absence of properly designed SSW, designers are using regular typefaces (like *Kruti Dev 500*). This calls for immediate attention of typographers and designers to create fonts for Hindi SSW. The syntactic attributes can be used by typographers to develop SSW fonts. They can even be used to develop digital platforms like Blambot, Comicraft etc.

In section 3.5, the SSW are categorized in different semantic groups based on the sound they are representing. These categories are further divided in sub-categories as per its context and the samples are segregated accordingly in each category. The previous section provided the structural features whereas this section provides the meaningful groups formed from SSW. These two sections together form the larger part of understanding the SSW. Figure 6.2 shows all the syntactical and semantic attributes of SSW identified for this section. The insights from these sections were further used for the creation of design support in the next chapter.

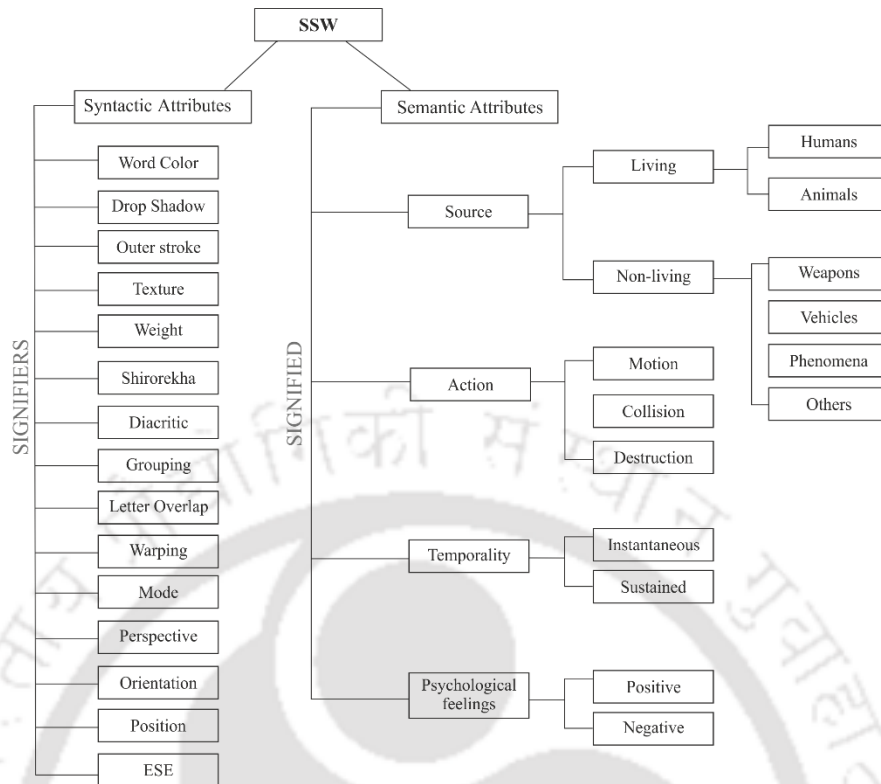


Figure 6.2 Syntactic and semantic attributes from chapter 3.

6.3 Creating the design support

Till the previous chapter, the approach to understanding SSW was more analytical. In this chapter, the approach is more towards synthesizing the understanding of SSW for creating suggestive design support. The objectives affixed for this chapter were:

- To explain the process flow of designing SSW by the knowledge gained from syntactic and semantic attributes.
- To create a set of guidelines for designing SSW formulated from the process flow.
- To create a visual repository of SSW in each semantic category that is readily usable by designers.

A process flow diagram is provided for the understanding of the designers. The process flow contains all the necessary steps and design decisions that are needed to be considered while creating SSW. Further, suggestive design guidelines were provided in each attributes (see section 4.2). These design guidelines are partly based

on the knowledge from self-practice of comic arts and may appear subjective in terms of articulation. However, it should be considered that previously any such design support did not exist for Hindi SSW. This research articulated the guidelines based on rigorous understanding of SSW. They just provide suggestive guidance for the interested designers. This design support will function as a reference point for any new or interested comic books designers to create SSW. The suggestive guidelines are not meant to inhibit their creativity in any ways. Rather it functions as a tool for enhancing creativity for designing better SSW than the current practices.

This chapter finally provides a visual repository of Hindi SSW that is available in digital format (.PNG). It consists of 150 SSW from all the semantic categories identified in chapter 3. This chapter demonstrates the process of creating SSW based on consideration of different syntactic attributes. The SSW of the visual repository can be readily used by comic book designers for their Hindi comics. The visual repository presented hereby is the first of its kind for Indian comic books. The most widely used SSW in Hindi comic books are provided in the repository. The designers can make few change (in size and color in some cases) in the SSW provided. However, it is advised against too many modifications in these SSW to avoid the loss of their aesthetic quality.

6.4 Broadening the understanding of SSW

Having provided the design guidelines as a part of PS stage, further enquiry was extended for deeper understanding of SSW in the narrative of comics. The SSW till previous chapter were analyzed as visual signs that represent sounds. It is found that they convey mostly sound in the context of Superhero comics and other similar genres. The enquiry for further understanding was raised due to the presence of other formats of comics (like graphic novels and comic strips) that has a diverse visual style than Superhero comics. Here narrative is multi-layered with subtle information about action and sounds. They do not employ SSW in a flashy manner like action comics does. Therefore, it was taken up as an extension of the

understanding phase to investigate what role SSW perform in the narrative of comics other than signifying sounds.

Chapter 5 therefore argued and discussed about the broader role played by the SSW in the narrative of comics. It is argued in this chapter that the SSW is a part of *discourse* of narrative and it is related to the events and existents of the *story*. Thus, SSW are significant element of discourse that can impact the story given their employment and creation is deliberately planned. The corpus of this chapter is selected from international graphic novels so that the basis of the inferences and conclusions are conveyed from a broader scope of narrative. Through the analysis of different examples from graphic novels, it is found that SSW carry many other functions apart from representing sound. These function are:

- a) Temporal-marker— SSW has potential to convey the time progression in the narrative.
- b) Spatial-marker— SSW are capable of conveying the *visual space* as well the *diegetic space* in the narrative.
- c) Action-marker— SSW are capable of indicating different actions (even in absence of image).
- d) Emotion-marker— SSW can convey the mood of characters of the story and can enhance the emotional experience of reader.
- e) Identity-marker— SSW can be used as symbolic representation of characters and objects.

The discourse provided in this chapter has a more philosophical approach than the previous chapters with structural approach. These two approaches for understanding SSW provided a richer knowledge about the visual element that has not received enough attention.

6.5 Contribution of this research

This thesis stands on the junction of theory and practice of comics and design studies. The domain of design is ever growing exponentially with the practice and knowledge building of newer models. The knowledge synthesized from this study

is instrumental for Indian comic book designers. With the growing number of publishers and graphic artist, the outcomes and knowledge from this study will facilitate both to appreciate. the smaller elements of comics that function coherently and provide the medium its exceptional qualities.

Table 6.1 consolidates the research questions, objectives and outcomes attained from each chapter.

Table 6.1 The research questions, objectives and outcomes from the Research Design.

Research Questions	Objective/s	Outcomes
Q1. What are the Syntactic attributes of SSW?	To understand and identify the structural parts of the SSW appearing in different contexts through observation.	Categories of syntactic attributes are identified that are found in Hindi comics.
Q2. What are the Semantic attributes of SSW?	To understand and identify the meaningful units emerging from the SSW in different contexts.	Categories of semantic groups are identified that are found in Hindi comics.
Q3. What is the role of SSW in the narrative of comics?	To find out if SSW plays a broader role in the narrative of comics.	Significant functions of SSW is identified proving its role in the broader context of the story and as an element of discourse.
Q4. What type of Design Support is possible to create for designers?	- To create design guidelines based on the correlation of the form and meaning for making SSW. -To create a repository (visual + textual) of SSW for designer's utility.	-Prescriptive study of design guidelines created for making SSW. -An exhaustive vocabulary (visual + textual) of SSW is created for designer's utility.

6.6 Limitations

There are some limitations to this study and it is appropriate to acknowledge those at this point of the chapter. The research questions have some basic premise on which the analysis has been done. It is inconceivable to include all the paradigms and analyze the samples. Thus, some of the limitations are articulated that are found in this study.

6.6.1 Excluding Image and Text analysis

The SSW are studied as visual signs appearing in comic books to represent a sound. Thus, it has definite relation to the image inside panels where it appears which is not studied. Neither, it is tried to study the text (dialogues and narration) with respect to the SSW. It is acknowledged that image and text are the two most vital components of a comics and study of one component is incomplete without reflecting on the other. Still, the study is proceeded to seclude the SSW as a third component that is formed in between image-text modalities. Thus, in the analysis, only the SSW are used to investigate and not the panels or the text.

6.6.2 Unavailability of literature

After deciding the target corpus for the study the limitation is found during sample collection of Hindi SSW. A point of concern is the decrease in number of Hindi comic book publishers. Due to this, the sample collection was restricted to Raj comics only. The new publishers are publishing in only English language.

6.6.3 Comics from unknown cultures

In the initial stage of the thesis, world SSW were sought to create a world-view of SSW. However, since the researcher can only read and understand English, therefore Japanese and French comics could not be included of the world view. Including them would have created richer understanding of world SSW. The current study therefore incorporated knowledge from English comics only.

6.6.4 Seeking the artists

Interacting with the veteran comic artists of India is another limitation identified during this thesis. In India, comic book artists are rarely being documented and researched, therefore it is difficult to know about their creative process and philosophies. Their lack of acknowledgment and documentation has led to a void where it is difficult to seek for knowledge about veteran comic book artists. Even though this study has interviewed some key publisher and artists, yet it is

acknowledged that a wider understanding of more artists would have added further significant value.

6.6.5 Regional publishers

India has several small scale regional comic book publishing houses that is not explored in this thesis. The practices and philosophies of design might differ from the conventional practices and that remains unknown.

6.6.6 Evaluation of design support

The guidelines proposed here are not evaluated for its effectiveness. This requires series of experiments with comic artists as participants. This process is time and resource consuming and can be taken for another doctoral research. Still, this remains as a limitation of this thesis.

Onwards and Upwards...

The research is targeted towards Comics Studies with a fundamental motive of understanding comics and developing its visual language. The images, text and sound inside comics are fitted in a harmonious and delicate balance that executes the storytelling effectively. While this thesis initiated the study of sound in comics, a vast space for exploring sound in relation to the image and text remains openly inviting.

This thesis invites Indian comic book artists and scholars to engage in serious discussion on comics and its mechanism. It also poses a challenge to the Indian comics creators to create structurally strong works that could be noticed in global level and are worthy of academic study.

Lastly, the present study provided the required amount of rigor and persistence to enter in to design research with more conviction and confidence. In this context, Design being a developing domain of research posed a challenge to conduct the study in the light of understanding and providing design support. However, the systematic investigation and assessment of the samples provided the required

understanding this research aimed for. The narrow focus of this study builds the foundational ground for further research in Indian comics and invites the scholar and practitioners to invest their intellect in Comics Studies while making comics. The dissemination/documentation of knowledge is as important as creating the medium.

This research has become a fertile ground for further developing studies. In today's automated world, it will be significant if an interface is created for a typeface based on the current study so that designers can readily write any desired word and convert it into an SSW. That would be a novel and significant contribution for Indian comic book designers and prove to be an important tool. Depending on the typeface, several other style and font families could be developed for SSW and this will create a family of SSW fonts in Hindi or other Indian languages that is so far missing.

Practice based research in the domain of comics will be helpful for creating and validating the process of visual narratives in comic. From the point of design research also, such an approach would be quite significant. To bridge the gap between design practice and design study in India, it is important to go through the actual process of creation and then commenting on it critically.

The present thesis stands as a body of work that shows the potential of a small element in comics for creating a space for further discussion. It invites the publishers, creators and scholars from different domain to initiate discourse on Indian comics. This the way to uplift the current state of Indian comics studies and create a mark in the academic-industry space with other countries.

Appendix 1

List of Raj comics titles

Sl. No.	#	Titles
1.	446	Genda
2.	465	Chor Sipahi
3.	2435	8:36
4.	40	Tiranga
5.	118	Raat ki Rani
6.	158	Butler
7.	1060	Torcher
8.	238	Apun Bola Kill Doga
9.	245	Bombay Dying
10.	319	Kalu 420 Doga 440
11.	1100	Doga Shakti
12.	131	Khoon ka Khatra
13.	138	8 Ghante
14.	222	Ding Dong Doga
15.	232	Vardi aur Bندوق
16.	348	Ek Miyaan Do Talwaare
17.	1011	Char Meenar
18.	1114	Race
19.	411	Naram Garam
20.	581	Main Bhi Policewala
21.	265	Aag
22.	552	Mahamurda
23.	421	Bachao Dharti
24.	250	Death Dot Com
25.	272	Bulletproof
26.	276	Blackout
27.	281	Makhhi
28.	293	Jonk
29.	472	Mastermind
30.	175	Aa Shakti Aa Parmanu
31.	561	Narak me Hain Parmanu
32.	494	Parmanu ka Bachha
33.	765	Parmanu ki Maut
34.	115	Parmanu Shakti
35.	420	Bachao-Bachao
36.	342	Operation Mangal

37.	539	Parmanu Bhagwan ki Jay
38.	2318	Jo Hoga Dekha Jaega
39.	2342	Parmatma
40.	266	Vidhwansak
41.	777	Crime College
42.	2432	Shraap
43.	106	Bambi
44.	2355	Itikand
45.	365	Atankwadi Nagraj
46.	113	Soorma
47.	2559	Sarvasangram
48.	46	Shakura ka Chakravyuh
49.	60	Khazana
50.	2515	Takshak
51.	545	Laava
52.	35	Nagraj aur Kanja
53.	102	Zehreeley
54.	2400	Ronin
55.	2396	Hallabol
56.	2470	Mrityujivi
57.	234	Bauna Shaitan
58.	19	Nagraj ki Kabra
59.	2426	Ambrish
60.	189	Kayamat
61.	444	Thodanga ki Maut
62.	485	Super Commando Dhruv
63.	286	Sheetan
64.	2579	Rajnagar Rakshak
65.	2530	Maximum Security
66.	53	Hatyaari Raashiya
67.	64	Commander Natasha
68.	560	Robin Hood
69.	2245	Gupt
70.	24	Atma ke Chor
71.	17	Doctor Virus
72.	2419	Game Over
73.	78	Shadyantra
74.	2399	Superman
75.	193	Mujhe Maut Chahiye
76.	2411	Statue
77.	109	Jigsaw
78.	385	Video Villain

79.	2553	Hunters
80.	43	Hatyara Kaun
81.	6	Awaz ki Tabahi
82.	45	Grahano
83.	673	Bali
84.	713	Bhatiki ka Jaal
85.	2317	Prem Bala
86.	2441	Aahuti
87.	948	Puja Express
88.	988	Border
89.	1015	Mahabala
90.	1056	Yogini
91.	1125	Andhak
92.	2356	Arambh
93.	2359	Suryansh
94.	2357	Srishti
95.	2398	Swarg Patra
96.	364	BlackFort
97.	409	DJ
98.	454	Bhoot se Bada Murda
99.	800	Laash Bachao
100	596	Palda

Appendix 2

List of words for Hindi SSW

Semantic Category	Word in Devnagari	Word in Latin	Meaning
Human (A1)	भाड़	Bhaad	Head bang
	भाड़	Bhaad	Body bang
	भड़ाक	Bhadaak	Body banging, Punch
	भम्म्म	Bhammmmm	Body loud banging
	भटाक	Bhataak	Punch, Body banging
	भिश	Bhish	Punch
	छप छप	Chap chap chap	Running on water
	छप्पाक	Chappak	Water Dive
	चटाक्	Chataak	Hi-five
	चट	Chatt	Snapping
	च्यूम	Chyoom	Eye laser
	धाड़	Dhaad	Kick, Body banging, Head butt, Punch
	धाक	Dhaak	Head bang, Kick
	धड़ाक	Dhadaak	Kick, Punch
	धड़ाम	Dhadaam	Body hit
	धम्म	Dhamm	Elbow hit, Ambient kick, Body bang
	धप्प	Dhapp	Punch, Body falling
	डिशूम	Dhisoom	Punch
	ढूम्म्म	Dhoomm	Kick
	फच्च	Fachh	Face blast
	फचाक	Fachhak	Head smash
	फटाक	Fataak	Kick
	घप्प	Ghapp	Reverse punch, Kick, Punch in board box
	घर्रर	Gharrrrr	Body drilling
	घूम्म्म	Ghoomm	Body banging
	गुडब गुडब	Gudab Gudab	Drinking
	गुलुप	Gulup	Drowning
	झड़ झड़	Jhadd Jhadd	Dusting
	कच	Kachh	Bone Breaking
	कड़ाक	Kadaak	Reverse punch, Neck break, Punch
	कडच	Kadachh	Teeth biting/clenching
	कडच	Kadachh	Feet Squishing
	कड़ड़ड़	Kaddd	Jump and break
	करेट	Karet	Hand chop
	कर्रर्रर्रर्र	Karrrrrr	Body drilling
	कट्	Katt	Hand chop
	खड करड	Khad Karad	Lifting stone

	खडाक	Khadaak	Bone breaking
	खशाक	Khashaak	Nail scratch
	खटाक	Khataak	Knife stab on ground
	खट्	Khatt	Hand chop, Neck Stab, Lever pull
	खूऊऊऊश	Khooooosh	Body swing, Tail swing, Punch swing
	किक्क	Kiiiiick	Kick
	पच	Pachh	Head smash
	प्लॉप	Plop	Punch through Plasma
	साय	Saay	Body swing
	सर्रर्रर्रर्रर्र	Sarrrr	Body Dragging
	सट	Sasssst	Eye laser beam
	सट सट सटाक	Sat Sat Sataak	Flame throw by Hands
	सटाक	Sataak	Reverse slap
	शक्क	Shakk	Nail scratch
	स्क्रेच	Skretch	Finger scratch
	स्विश	Swish	Punch swing
	स्वूप	Swoop	Body swing
	स्वूश	Swoosh	Jump
	ताड़	Taad	Slap, Kick, Punch, Stone pelting
	तड़	Tad	Double punch
	तड़ तड़	Tad tad	Punch
	तड़ाक	Tadaak	Bone breaking, Body banging, Slap, Punch
	ठाक	Thaaak	Head collision, Punch, Kick
	ठडक	Thadaak	Kick
	ठक ठक	Thak Thak	Walking
	ठक्क	Thakkkk	Punch at stone
	ठन्न	Thann	Punch in shield
	ठन्न	Thannn	Kick on plank
	थड	Thud	Elbow hit, Punch
	थंब	Thumb	Head butt, Kick
	थम्प	Thump	Face kick, Body hit, Head grab
	टिप	Tip	Fingers Snapping
	व्हूश	Whoosh	Body airlift, Body jump
Animals (A2)	भो भो	Bhaw Bhaw	Dog barking
	भिन्न भिन्न	Bhinn Bhinn	Bees
	ची ची	Chi Chi	Birds
	चिया	Chiyaaaa	Elephant
	फड़ फड़	Fad Fad	Bird flying
	गर्रर्रर्रर्र	Garrrrr	Dog growling
	क्री क्री	Kri Kri	Crows cawing
	स्निफ़	Sniff Sniff	Dog smelling

	वूफ वूफ	Woof Woof	Dog barking
Weapons (A3)	बड़ाम	Badaaam	Canon shot
	बडूम	Badoom	Shot gun
	बेंग	Bang bang	Gun
	भड़ाक	Bhadaak	Rod hit
	चड़ाक	Chadaak	Laser blast
	छनाक	Chanaak	Glass bottle breaking
	चिर्र्र्र्र	Chirrr	Welding gun
	चुम्भस	Chumbhas	Defective bullets
	चयूम	Chyoom	Big gun with silencer
	धड़ाक	Dhadaak	Chain hit
	धाय	Dhay	Gunshot
	फट फट	Fat fat	Drone blast
	फिस्स	Fissss	Gas, Spray can
	घर्र्र	Gharr	Defective machines, Rocket engine
	हिस्स	Hisss	Rocket smoke
	जिंग	Jing jing	Machine gun
	जूम	Joom Joom	Sonic blast
	काड़	Kaad	Laser blast
	कडाड	Kadaadd	Ultrasonic blast
	कड्डु	Kaddddddd	Laser blast
	खच	Khach	Sword stab, Knife stab
	खूश	Khoosh	Flame
	किर्र्र्र घर्र्र	Kirr Gharr	Chain gun, mini gun
	किर्र्र्र	Kirrrrr	Laser blast
	कलम	Klum	Anchor gun
	रेट रेट	Ret Ret	Stun gun
	सर्र्र्र्र	Sarrrr	Laser beam
	स्विश	Swish	Knife swing
	तड़ तड़	Tad tad	Big gun
	तड़ाक	Tadaak	Star blade hit
	तड़ाग	Tadag	Chain hit
	टनाक	Tanaak	Rod hit
	टर् टर्	Tarr Tarr	Stun gun
	ठाए	Thay Thay	Pistol
	वरूम	Varoom	Missile
	व्हूश	Whoosh	Canon flame
Vehicles (A4)	बर्र्र्र्र	Barrrr	Motor Bike
	भड़ भड़	Bhad bhad bhad	Bike engine
	ब्रू	Brooo	Drone engine
	ची	Chiiii	Car break
	धड़ड़ धड़ड़	Dhadad Dhadad	Train wheels
	धम्म	Dhamm	Car door

	फुर्रर्रर्र	Furrrrr	Car rushing
	घड़ घड़	Ghad ghad ghad	Bike
	घर्रर्रर्रर्र	Gharrrrr	Bulldozer, Truck
	घुर्रर्रर्र	Ghurrr	Speedboat, Car speeding
	घू	Ghuuuu	Bulldozer
	कराड़ड़	Karaddd	Crane
	क्री	kriii	Drone flying
	क्रिच	Krinchh	Car break
	क्रिया	Kriyaaaa	Car break
	पीओ	Pio	Siren
	रू	Rooooo	Rocket take-off
	स्क्रीच	Skreench	Bike skid
	वरूश्चुर	Varoooshghurr	Car speeding
	व्हूश	Vhooosh	Spaceship
	विच	Vichh	Tyre puncture
	वू वू	Voo Voo	Police Siren, Van speeding
	व्रूम	Vrooom	Van speeding
	वू	Vrooooo	Bike jumping
	व्ही	Wheee	Drone flying
Phenomena (A5)	भकाक	Bhakkak	Fire
	छपाक	Chappak	Water splash
	धड़ड़	Dhadad	Elevator fall, Wall falling
	फ़िज़	Fizzzz	Extinguisher
	गड़ड़ड़	Gadad	Elevator
	किर्रर्रर्र	Kirrrrr	Electric shock
	तिडड	Tidad	Electric shock
Others (A6)	चर्रर्रर्र	Charr	Page rip
	चर्रर्रर्र	Charrrr	Cloth Ripping
	चट	Chat	Branch breaking
	चटाक	Chataak	Rope breaking
	चिर्रर्रर्र	Chirrrrr	Cloth ripping
	क्रेश	Crash	Glass breaking
	धाम	Dhaam	Object banging
	गरड़	Garad Garad	Road breaking
	कडाक	Kadaak	Pipe breaking, Pillar breaking
	कडाडड	Kadadddddd	Phone voice breaking, Road breaking
	कडाडड	Kadadddddd	Road breaking
	खनन	Khanan	Chain throw
	खनाक	Khannak	Bottle breaking
	खर्र कड़ाप ज़ी	Kharr kadaap Ziii	T.V noise
	किर्रन	Kirn Kirn	Mobile ringing

	किर्र	Kirr Kirr	Welding machine
	क्लिक	Klick	Door lock, bottle cap opening
	पीSSS	Piiiiiii	Electronic alarm
	पीक	Pik	Electronic beep
	पिनग्लिंग	Pingling Pingling	Electronic phone
	पिर्रर्रर्र	Pirrrr	Whistle
	रिंग	Ring Ring	Mobile ringing
	सुर्रर्रर्र	Surrrr	Dust flying
	स्वूश	Swoosh	Cloth flying
	टक	Tak	Hook fix
	टनन	Tanan	Bell hitting
	टन्न	Tann	Metal pipe hit, Glass tinkering
	टनाक	Tannak	Metal shield
	ठर्रर्रर्र	Tharrrrrrr	Wall breaking
	टीSSS	Tiiiiii	Ultrasonic sound
	टिन टुनन	Tin Tunan	Bell melody
	ट्रिन	Trin Trin	Telephone ringing
	ट्वांग	Twang	Flexible rope
	व्ही	Vhiii	Whistle
Motion (B1)	घुर्र	Ghoorrr	Car speeding
	खूश	Khoosh	Body Flying, Hand swinging
	साय	Saaay	Axe swinging, Flying kick, Flying arrows
	सर्रर्रर्र	Sarrrr	Chain swing, Object throwing, Laser rays, Body Dragging
	शा	Shaaa	Knife Swing
	सुर्रर्रर्र	Surrrr	Dust flying
	स्विश	Swish	Swinging knife, Punch swing
	स्वूप	Swoop	Body swing
	स्वूश	Swoosh	Jump, Cloth flying
	वरूश्घुर्र	Varooshghurr	Car rushing
	वूम	Vooom	Car speeding
	व्रूम	Vroooooom	Speeding Van
	व्हूश	Whoosh	Body airlift, Rocket flying
Collision (B2)	भड़ाक	Bhadaak	Object hit
	भड़ाम	Bhadaam	Vehicle hit
	ब्राम	Braaam	Vehicle hit
	धाड़	Dhaad	Bike hit, Body hit
	धाक	Dhaak	Body hit
	धाम	Dhaam	Object hit
	धड़ाक	Dhadaak	Object hit
	धड़ाम	Dhadaam	Object fall
	धाप	Dhapp	Head hit

	घूम	Ghoomm	Body hit
	कडाक	Kadaak	Vehicle hit
	खनाक	Khannak	Glass hit
	खटाक	Khataak	Plank hit
	तडाक	Tadaak	Body hit, Object hit
	टनाक	Tannak	Metal hit
Destruction (B3)	बड़ाम	Badaam	Explosion, Bomb Blast, Explosion
	बडूम	Badoom	Explosion
	बम्म्म	Bammm	Bomb
	भड़ाम	Bhadaam	Explosion
	बुड़म	Boodoom	Explosion
	बूम	Boomm	Explosion
	बूSSमSS	Booomm	Explosion
	चडाक	Chadaak	Glass breaking, Laser hit
	छनाक	Channak	Glass breaking
	धड़ाम	Dhadaam	Explosion
	धडड	Dhadaddd	Wall breaking
	धड़ाम	Dhaddam	Explosion
	फच	Fachh	Face blast
	फचाक	Fachhak	Face blast, Body blast
	गड़ड़	Gadada	Road breaking
	कडाक	Kadaaaak	Wall breaking
	कड़ाम	Kadaaaam	Building breaking
	कड़ाड़	Kadaadd	Road breaking
	कडाक	Kadaak	Object breaking
	कड़ाड़ड़ड़	Kadadddddd	Metal breaking
	करडड	Karaddd	Crane crushing
	खनाक	Khannak	Glass breaking
	क्रोश	Krosh	Explosion
	थररर	Tharrrrrrrr	Wall breaking
Instantaneous (C1)	भाड़	Bhaad	Head hit
	भडाक	Bhadaak	Rod hit
	भटाक	Bhataak	Punch, Body hit
	भिश	Bhiish	Door break
	चट	Chatt	Finger snapping
	चयूम	Chyoom	Gunshot
	क्लिक	Click	Door lock
	क्रेश	Crash	Glass breaking
	धाड़	Dhaad	Punch, kick
	धाक	Dhaak	Kick
	धड़ाक	Dhadaak	Kick, Body hit
	धम्म	Dhamm	Door close
	धप्प	Dhapp	Punch

	धाय	Dhay	Gun shot
	फटाक	Fataak	Kick
	घप्प	Ghapp	Kick
	कच्च	Kachh	Bone breaking
	कड़ाच	Kadachh	Teeth clenching
	क्रेट	Karet	Chop
	कट	Katt	Wire cutting
	खच	Khach	Stab
	खचाक	Khachhak	Knife stab
	खडाक	Khadaak	Bone breaking, Gun jam
	खनाक	Khannak	Glass breaking
	खट	Khat	Chop, Knife, Lever pull, Hand chop, Gun jam
	खटाक	Khataak	Object hit
	स्क्रेच	Skratch	Nail scratch
	स्विश	Swish	Knife swing, Punch swing
	ताड़	Taad	Slap, Punch
	तड़	Tad	Rod hit, Kick
	तड़ाक	Tadaak	Bone breaking, Slap, Punch
	टनाक	Tanaak	Metal shield hit, Rod hit, Metal hit
	ठाक	Thaak	Head hit, Kick, Gun butt
	ठड़ाक	Thadaak	Kick
	ठन्न	Thann	Punch hit
	थड	Thud	Elbow hit, Kick, Punch
	थंब	Thumb	Head butt
	थम्प	Thump	Kick, Head grab
	टिप्प	Tipp	Finger snapping
	वूफ	Voof	Dog barking
Sustained (C2)	बड़ाम	Badaaam	Explosion
	बर्बर्बर्ब	Barrrrr	Motor Bike
	भड़	Bhad bhad bhad	Motor bike engine
	ब्राम	Braaam	Car colliding
	छप छप	Chapp chapp	Running in water
	ची	Chiiiiiii	Vehicle break
	चिस्सर्बर्बर्ब	Chiiiiiiiirrrr	Ripping cloth, Welding machine
	धाम	Dhaaaam	Object crashing
	धड़ाम	Dhadaaam	Explosion
	धर्बर्बर्ब धर्बर्बर्ब	Dharr Dharr	Machine gun
	फुर्बर्बर्बर्ब	Fuurrrrr	Speeding car
	घर्बर्बर्बर्ब	Gharrrrr	Road roller
	घिर्बर्बर्ब	Ghirrrrr	Object falling
	घुर्बर्बर्बर्ब	Ghurrrrr	Speed boat, Speeding car
	घूस्स	Ghuuuuu	Road roller

खन्नSS	Khannn	Pillar breaking
किSSक्क	Kiiiiick	Kick
किर्रर्रर्रर्र	Kirrrrr	Electric shock
क्री क्री क्री	Kri Kri kri	Crow
क्रिSSया	Kriiiya	Car break
पीओSSS	Pioooo	Siren
पिर्रर्रर्रर्र	Pirrrr	Whistle
रेट रेट	Ret Ret	Machine gun
सर्रर्रर्रर्र	Sarrrrrrr	Knife throw
स्क्रीSSSच	Skreench	Motor bike skid
सुSSर्रSSS	Surrrrr	Dust flying
स्वूप	Swoop	Body swing
तड़ तड़	Tad tad tad	Punches, Machine gun, Gunshots
टन्नSSS	Tannnn	Temple bell
टिन टुनन	Tin Tunan	Melody bell
ट्रिन ट्रिन	Trin Trin	Telephone ringing
वरुशघुर्र	Varooshghurr	Speeding car
व्हीSSS	Vhiiii	Whistle
वू वू वू	Voo voo voo	Siren
वूSSSम	Voom	Car speeding
Feelings (D)	!	Exclamation Shock and similar emotions
	?	Question mark Confusion and similar emotions

Appendix 3

Tables for the frequencies of syntactics attributes in each semantic category

Semantic Category	Syntactic Attribute : Word Color											Total out of 1620
	Pink	Blue	Red	Cyan	Black	Yellow	Orange	White	Green	Gradient	No Colour	
A1	14	14	242	7	15	35	15	15	27	14	2	400
A2	0	1	13	0	3	1	1	1	1	2	2	25
A3	6	2	97	4	21	12	5	4	15	7	2	175
A4	2	0	31	1	4	3	4	1	9	5	0	60
A5	1	2	14	0	3	1	0	0	4	0	1	26
A6	2	6	72	1	8	10	8	3	10	7	4	131
B1	4	3	72	2	6	9	5	4	7	4	2	118
B2	12	13	190	8	6	29	18	16	34	19	1	346
B3	5	6	121	3	24	14	7	2	18	6	6	212
C1	16	17	296	7	21	47	19	19	45	26	4	517
C2	9	8	176	6	33	15	14	6	21	10	7	305
D1	1	2	30	0	2	11	4	5	6	4	1	66
D2	12	10	182	0	13	23	18	14	22	6	9	309

Syntactic Attribute: Outer Stroke					Total out of 1620
Semantic Category	Single Stroke	Double Stroke	Triple Stroke	No Stroke	
A1	377	15	1	7	400
A2	22	0	0	3	25
A3	148	8	0	19	175
A4	53	3	0	4	60
A5	23	0	0	3	26
A6	118	6	0	7	131
B1	109	3	0	6	118
B2	326	19	1	9	355
B3	182	9	0	21	212
C1	480	24	1	12	517
C2	265	9	0	31	305
D1	64	0	0	2	66
D2	290	13	0	6	309

Syntactic Attribute: Drop Shadow			
Semantic Category	Adjoined	Absent	Total out of 1620
A1	23	377	400
A2	5	20	25
A3	7	168	175
A4	6	54	60
A5	2	24	26
A6	13	118	131
B1	4	114	118
B2	23	332	355
B3	18	194	212
C1	36	481	517
C2	21	284	305
D1	10	56	66
D2	35	274	309

Syntactic Attribute: Texture			
Semantic Category	Texture	No Texture	Total out of 1620
A1	2	398	400
A2	0	25	25
A3	0	175	175
A4	1	59	60
A5	0	26	26
A6	3	128	131
B1	1	117	118
B2	2	333	335
B3	3	209	212
C1	4	513	517
C2	2	303	305
D1	0	66	66
D2	6	303	309

Syntactic Attribute: Weight				
Semantic Category	Heavy	Medium	Light	Total out of 1620
A1	116	239	45	400
A2	4	13	8	25
A3	38	101	36	175
A4	25	27	8	60
A5	11	13	2	26
A6	45	67	19	131
B1	28	72	18	118
B2	134	183	38	355
B3	53	118	41	212
C1	143	315	59	517
C2	97	149	59	305
D1	14	43	9	66
D2	95	177	37	309

Syntactic Attribute: Shirorekha						
Semantic Category	Continuous	Discontinuous	Distant	Absent	Symbols	Total out of 1620
A1	105	187	1	31	76	400
A2	9	14	0	1	1	25
A3	85	66	0	22	2	175
A4	17	38	0	5	0	60
A5	7	18	0	1	0	26
A6	44	80	0	7	0	131
B1	52	63	0	3	0	118
B2	106	207	1	39	2	355
B3	82	108	0	21	1	212
C1	153	234	1	51	78	517
C2	116	171	0	17	1	305
D1	18	48	0	0	0	66
D2	75	219	1	10	4	309

Syntactic Attribute: Diacritic				
Semantic Category	Joined	Disjoined	No Diacritics	Total out of 1620
A1	39	9	352	400
A2	17	1	7	25
A3	63	2	110	175
A4	34	1	25	60
A5	5	4	17	26
A6	51	2	78	131
B1	69	3	46	118
B2	29	8	318	355
B3	67	6	139	212
C1	60	10	447	517
C2	150	9	146	305
D1	21	4	41	66
D2	82	8	219	309

Syntactic Attribute: Grouping				
Semantic Category	Welded	Disjoined	No Grouping	Total out of 1620
A1	110	214	76	400
A2	10	14	1	25
A3	95	78	2	175
A4	23	37	0	60
A5	9	17	0	26
A6	41	90	0	131
B1	54	64	0	118
B2	118	235	2	355
B3	88	123	1	212
C1	167	272	78	517
C2	124	180	1	305
D1	17	49	0	66
D2	77	228	4	309

Syntactic Attribute: Letter Overlap				
Semantic Category	Single letter	Multi letter	No Overlap	Total out of 1620
A1	13	41	346	400
A2	0	1	24	25
A3	5	10	160	175
A4	2	11	47	60
A5	0	2	24	26
A6	11	10	110	131
B1	3	9	106	118
B2	14	47	294	355
B3	12	12	188	212
C1	24	42	451	517
C2	7	33	265	305
D1	5	4	57	66
D2	13	21	275	309

Syntactic Attribute: Warping								Total out of 1620
Semantic Category	Upper Arc	Lower Arc	Upper only	Lower only	Wave	Peepphole	No Warping	
A1	37	11	0	0	8	0	344	400
A2	2	1	0	0	0	0	22	25
A3	15	6	0	0	4	0	150	175
A4	3	1	0	0	9	0	47	60
A5	2	2	0	0	3	0	19	26
A6	20	5	0	0	11	0	95	131
B1	16	8	0	0	4	0	90	118
B2	45	9	0	0	10	0	291	355
B3	14	6	0	0	12	0	180	212
C1	55	14	0	0	7	0	441	517
C2	24	11	0	0	27	0	243	305
D1	7	2	0	0	5	0	52	66
D2	33	12	0	0	20	0	244	309

Syntactic Attribute: Mode			
Semantic Category	Hand letter	Digital	Total out of 1620
A1	382	18	400
A2	21	4	25
A3	160	15	175
A4	58	2	60
A5	25	1	26
A6	109	22	131
B1	100	18	118
B2	343	12	355
B3	190	22	212
C1	491	26	517
C2	268	37	305
D1	51	15	66
D2	270	39	309

Syntactic Attribute: Perspective			
Semantic Category	Present	Absent	Total out of 1620
A1	17	383	400
A2	0	25	25
A3	3	172	175
A4	6	169	175
A5	1	25	26
A6	4	127	131
B1	6	112	118
B2	14	341	355
B3	9	203	212
C1	17	500	517
C2	14	291	305
D1	2	64	66
D2	24	285	309

Syntactic Attribute: Orientation				
Semantic Category	Horizontal	Vertical	Angular	Total out of 1620
A1	205	76	119	400
A2	11	2	12	25
A3	72	19	84	175
A4	21	7	32	60
A5	11	10	5	26
A6	54	27	50	131
B1	41	15	62	118
B2	148	81	126	355
B3	85	40	87	212
C1	259	87	171	517
C2	117	56	132	305
D1	29	19	18	66
D2	130	80	99	309

Semantic Category	Syntactic Attribute: Position					Total out of 1620
	Thought Bubble	Speech Bubble	Narration Box	Single Panel	Multi panels	
A1	55	18	0	326	1	400
A2	1	0	0	24	0	25
A3	1	1	0	173	0	175
A4	0	0	0	59	1	60
A5	0	0	0	26	0	26
A6	1	2	0	128	0	131
B1	0	0	0	117	1	118
B2	2	1	0	351	1	355
B3	2	2	0	208	0	212
C1	57	20	0	439	1	517
C2	1	1	0	302	1	305
D1	0	0	0	65	1	66
D2	4	3	0	302	0	309

Semantic Category	Syntactic Attribute: ESE		Total out of 1620
	Present	Absent	
A1	10	390	400
A2	1	24	25
A3	19	156	175
A4	4	56	60
A5	2	24	26
A6	7	124	131
B1	7	111	118
B2	11	344	355
B3	18	194	212
C1	15	502	517
C2	27	278	305
D1	2	64	66
D2	7	302	309

Appendix 4

The graphic novels selected for analysis in chapter 5.

Author	Title	Publisher	Year
Daniel Clowes	Ghost World	Jonathan Cape	2000
Craig Thompson	Blankets	Top Shelf Productions	2003
Craig Thompson	Good-bye Chunky Rice	Top Shelf Productions	2003
Alison Bechdel	FunHome	Houghton Mifflin Company	2006
Adrian Tomine	Shortcomings	Drawn and Quarterly	2007
David Mazzucchelli	Asterios Polyp	Pantheon	2009
Fabio Moon & Gabriel Ba	Daytripper	Vertigo	2011
Vera Brosgol	Anya's Ghost	Square Fish	2011
Kripa Joshi	Miss Moti	Self-Published	2012
Julie Maroh	Blue is the Warmest Color	Arsenal Pulp Press	2013

Appendix 5

Category: **Humans**

'Bhaad'
Used for head banging
or body banging.

'Bhammm'
Used for sustained sound
of body banging.

'Fachh'
Used for any type
squishy blasts.

'Bhadaak'
Used for body bang,
weapon hit, punches etc.

'Dhadaam'
Used for loud body hits.

'Fachaak'
Used for squishy head
smashes and similar sounds.

'Dhaad'
Used for body bang,
head butt, punches etc.

'Dhadaam'
Used for loud body hits.

'Bhataak'
Used for punches and
kicks.

'Chapp'
Used for running on
water.

'Dhhapp'
Used for softer sound of
punches and kicks.

'Ghhapp'
Used for softer sound of
punches and kicks.

Category: Humans

'Charr'
Used for ripping sounds.

'Dhoommm'
Used for sustained sound of kick.

'Dhaak'
Used for Kick and body banging.

'Chirr'
Used for ripping sounds.

'Fataak'
Used for kick or slaps.

'Dhadaak'
Used for head banging or body banging.

'Chataak'
Used for slaps, hi-five.

'Bhaad'
Used for clicking sounds.

'Gulup'
Used for drowning.

'Dhammm'
Used for sustained kick, body collision.

'Karet'
Used for hand chops.

'Khatt'
Used for hand chops, neck breaking.

Category: **Humans**

टिशूम!

'Dhishoom'
Used for the sound of punches.

कट

'Katt'
Used for the hand chops or bone breaking.

कट कट कट कट कट

'Katt'
Used for the hand chops or bone breaking.

धूम धूम धूम धूम धूम

'Ghummmm'
Used for sustained sounds of body collision.

खच्च

'Khachh'
Used for sounds of nail scratches or stabs..

कि कू कू कू कू

'Kickk'
Used for sustained kick sounds.

कैय

'Kachh'
Used for bone breaking sounds.

खैडाक

'Khadaak'
Used for bone breaking sounds.

प्लोप

'Plop'
Used for sounds of puches through plasmic liquids.

कडाक

'Kadaak'
Used for reverse punches, neck breaking, punches.

खशाक!

'Khashaak'
Used for scratches.

साय!

'Saay'
Used for swinging body.

Category: **Humans**

'Kadadada'
Used for sounds of breaking objects by jumping.

'Kadach'
Used for teeth clenching, biting, bone breaking etc.

'Jhad jhad'
Used for the sound of dusting body.

'Pachh'
Used for smashing heads.

'Khachh'
Used for drowning.

'Thud'
Used for elbow hits, punches

'Sarrrrr'
Used for body dragging

'Tad'
Used for punches, slaps.

'Thumb'
Used for head butts, kicks

'Saaaaat'
Used for eye laser beams.

'Tadaak'
Used for bone breaking, slap, kicks.

'Sataak'
Used for reverse slap.

Category: **Humans**

‘Shakk’
Used for nail scratches.

‘Thaak’
Used for kicks, walking sounds.

‘Tipp’
Used for finger snapping.

‘Sretch’
Used for finger scratching.

‘Thaaak’
Used for sustained kicks, punches.

‘Whoosh’
Used for body jumps.

‘Swishh’
Used for flying punches, kicks.

‘Thann’
Used for punching in metals.

‘Swoop’
Used for body swinging.

‘Taaad’
Used for slaps, kicks, ouches.

‘Swoop’
Used for jumps.

‘Thump’
Used for face kicks, body coliding

Category: **Animals**

'Bhaw-bhaw'
Dog barking

'Garr'
Animals growling

'Chi-chi'
Small birds.

'Chiyaaa'
Elephants screaming

'Voof voof'
Dog barking

'Kri-kri'
Flying dinosaurs

'Fad-fad'
Flying birds.

'Vaaaooooo'
Wolf howling

'Hissss'
Snake hissing

'Snif'
Dog sniffing

Category: Weapons

बडाम

'Badaam'
Canon shots

धाय

'Dhaay'
Gunshots

जूम

'Joom'
Sonic blast

बडूम

'Badoom'
Shotgun blast

फट

'Fatt'
Drone blast

कडकडा

'Kadadada'
Laser blast

बैंग

'Bang'
Gunshots

फिससिस

'Fissssss'
Gas spray

खच्च

'Khachh'
Knife stab

छडाक

'Chadaak'
Laser shots

फिस्स

'Fiss'
Rocket smoke

चानाक

'Channak'
Glass breaking

Category: **Vehicles**



'Barrrr'
Motorbike with
heavy engine



'Dhamm'
Car door colliding



'Skrinch'
Skidding bike



'Bhaad bhaad '
Heavy engine of vehicle



'Furrrrrrr'
Car rushing in speed



'Vhoosh'
Spaceship



'Bruuu'
Flying drones



'Dhad dhad'
Lighte morobike engine



'Voo voo'
Siren



'Chiii'
Car breaks



'Karad'
Big crane



'varoom'
Speeding van

Category: **Phenomena**



'Badoom '
Exlposion



'Bhadaam'
Explosion



'Dhadaam'
Explosion



'FizZZZ'
Gas, extinguisher



'Badaaam'
Big explosion



'Kirrr'
Electricity



'Boommmm'
Explosion



'Kirrrnnn'
Telephone ringing



'Ring'
Telephone ringing



'Piinzz'
Alarm



'Vhiin'
Loud siren



'Tiin'
Ultrasonic sound

Category: **Motion**



'Saay'
Flying objects/body

'Sarrrrr'
Dragging objects/body

'Voom'
Vehicles in motion



'Vhoosh'
Speeding vehicles

Category: **Collision**



'Bhadaak'
Object/body colliding



'Bhadaam'
Vehicle Collision



'Ghummm'
Body colliding



'Tadaak'
Body colliding



'Braaam'
Big object/vehicles colliding



'Dhapp'
Head collision



'Kadaak'
Objects colliding

Category: **Emotions**



'Gurr '
Anger



'Dha! '
Surprise



'Gal gal gal '
Disgust



'Bhraaaa!'
Fear

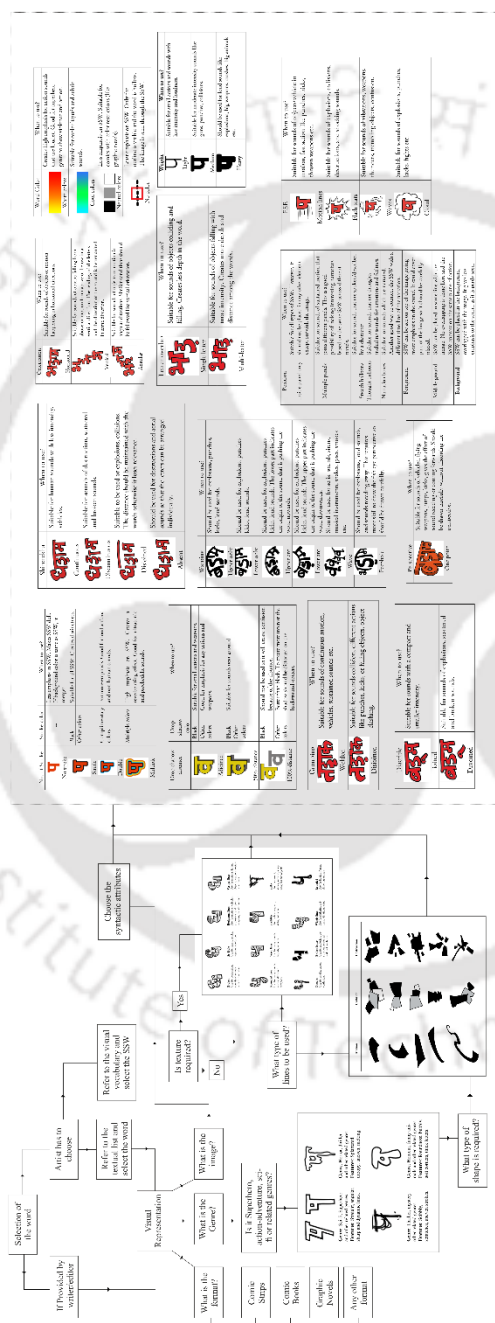


'La la '
Happiness



'Boo boo '
Happiness

Appendix 6



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Acknowledgements

I feel great privilege in expressing my deepest and most sincere gratitude to my supervisor Dr. Prasad Bokil, for his excellent guidance throughout the course of this work. He was always supportive and helping hand. His kindness, dedication, friendly accessibility and attention to detail have been a great inspiration to me. My heartfelt thanks to him for the unlimited support and patience shown to me. I would particularly like to thank for all his help in patiently and carefully correcting all my manuscripts, reports and other academic writing. I could not have imagined having a better advisor and mentor for my PhD training.

I would like to thank my doctoral committee members Prof. Ravi Mokashi Punekar, Dr. D. Udaya Kumar and Prof. Rohini Mokashi Punekar for sparing their precious time to evaluate the progress of my research work. Their suggestions have been valuable. I would also like to thank other faculty members for their kind help in my academic studies. I am also thankful to the technical and administrative staff of the department.

I also extend my gratitude and thanks to all my beloved friends at the PhD enclave, Department of Design. They have been around to provide healthy companionship and created a good research environment. I would also like to thank Anmol, Gaurav, Chote (Nilakshi), Venky, Himakshi, Shubhojit, Shahid, Papori, Sid, Debi, Nandu and others for their friendly support during my stay at IIT Guwahati.

Last but not the least, I would like to thank my family: my Maa-Baba and to my Brother, sister-in-law and our little Misha for supporting me throughout writing this thesis and my life in general.