Chapter 3

Problematising 'semiotic resource'*

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This chapter investigates the nature of a semiotic resource and systems from the Systemic Functional Linguistics (SFL) perspective. A semiotic resource contains both an expression and content plane as well as possesses system networks on each of these planes. A system, on the other hand, is a configuration of meaning potentials that is articulated through a semiotic resource. This is followed by an argument of a visual image as a semiotic resource, comparing it with the modality of language. In addition, it will also be proposed that Saussure's (1967) claim of arbitrariness between a signifier and a signified could further be extended in the current understanding of the nature of language and visual images, especially since both semiotic resources share a common historical origin. The implications arising from the association between the two modalities are also discussed briefly. Stemming from a need to understand the semiotic resource of visual images, this chapter also proposes icons as the vocabulary of visual images, analogous to the role of words in language. The conceptions presented in this chapter are preliminary and by no means final nor definitive. The chief aim of this chapter is to provoke a meaningful debate on some of the pertinent questions in multimodal research.

1. Multimodal semiotic resources

Earlier work on meaning has centred on the notion of the sign. This focus is only shifted when the work of Michael Halliday on Systemic Functional Linguistics theory (SFL), redefines the boundaries of semiotics from "a study of signs" to "a study of sign systems". Halliday's (1978) work marks a shift of emphasis from a sign as an entity, to a system of signs operating together to make meaning. In the SFL community signs are more commonly referred to as semiotic resources. They include language, expressed in its written form through graphology or typography, as well as the semiotic resources of visual images, mathematical notations and other technical symbols.

In this age of the multimedia, there is an increasing awareness that meaning is rarely made with language alone. As Baldry (2000) and Kress and van...
Leeuwen (2001) note, we live in a multimodal society, which makes meaning through the co-deployment of a combination of semiotic resources. Visuals, gestures and sounds often accompany the linguistic semiotic resource in semiosis. As such, there is a pressing need to understand the dynamics of meaning-making, or semiosis, in multimodal discourse. Academic disciplines that focus on monomodality, such as linguistics, must come into dialogue with other fields of research, for instance, visual communication studies and media studies, to facilitate the interdisciplinary nature of multimodal research.

Kress expresses the pressing need to understand the role of the visual semiotic in communication, arguing that “it is no longer possible to avoid these issues in critical analyses, on the assumption, explicitly or implicitly held, that all (relevant) meaning in a text is, as it were, fully glossed in the verbal component of the text” (Kress 1993:188). Research in multimodal discourse analysis has also been increasing (see, Baldry 2000; Kress & van Leeuwen 2001; O’Halloran 2004). Most of these studies focus on the dynamics and the meanings that result from the co-deployment of the various modalities. Less research efforts have, however, been spent on examining some of the assumptions underpinning multimodal studies, many of which borrowed largely from the extensively documented semiotic resource of language. For instance, the theoretical dimensions of what constitutes a sign and the nature of a semiotic resource need to be re-examined in the light of the more recent advances made in multimodal research. By discussing some of these questions, this chapter shall provoke a deeper exploration into some of these issues in the new field of multimodality.

2. Nature of a semiotic resource

Let us first begin by initiating a discussion on the notion of a visual message, in particular, discourse that co-deploys the semiotic resources of language and visual images, from the Systemic Functional Linguistics (SFL) perspective. Next, it will also be proposed that visual images can be seen as a legitimate semiotic resource, analogous to language. In order to recognise that, it is helpful to clarify the understanding of what is a semiotic resource, as used in this chapter, amongst the many flagrant proliferations of the term.

Apart from pioneering a fresh approach to the study of meaning through the investigating of the relationship between sign systems or semiotic resources, Halliday (1978) also foregrounds the notion of choice, i.e. the selection of an option over others in meaning-making. Halliday (1978) operates on the assumption that a semiotic resource must have (1) an expression and content plane, as well as (2) possess systems operating on each plane. Within each plane, there is a network
of options as "a representation of the potential at that level" (Halliday 1978: 40). A system, according to Halliday, is "a set of options together with an entry condition, such that if the entry condition is satisfied, one option from the set must be selected" (Halliday 1969: 253; quoted in de Joia & Stenton 1980: 109). In other words, the system is "an abstract representation of paradigm" (Halliday 1971: 55; quoted in de Joia & Stenton 1980: 109). The notion of language as semiotic resource is derived from Halliday's (1978) seminal proposition of language as a social semiotic. A social semiotic is "a system of meanings that constitutes the 'reality' of the culture" (Halliday 1978: 123). Semiotic resources are therefore inextricably linked to context and a social reality.

Following Halliday (1978), a guideline on the nature of semiotic resources and systems from the SFL perspective can be established. A semiotic resource possesses a content plane, where a set of grammar operates, and an expression plane, where the content plane is articulated. In addition to that, systems operating within a network are also present on each of the strata or planes. A semiotic resource is thus differentiated from a system, in that a system does not possess a content and expression plane. Instead, systems are metafunctionally based configurations of the meaning potential of each semiotic resource. Systems may also host several subsidiary systems, or sub-systems, where the sub-systems operate on a different level of delicacy from the main system. For instance, language as a semiotic resource has on its expression plane the system of typography. Within typography, there is a sub-system of font, and within font, there are many sub-systems as well, amongst them, for instance, colour. With these principles as guidelines, it is easier to distinguish between a semiotic resource and a system or other mechanisms that may all contribute, albeit in different capacity, to the meanings in a text.

A simple example of a semiotic resource, as illustrated by Eggins (1994) is the traffic light. It is a modality, as it possesses both an expression plane and a content plane. The expression plane consists of the system of colour, namely, Red, Amber and Green. There is also a set of grammar in operation. This is evident through the fixed sequence in the lighting of colours, and that at any one time only one colour is lit, in effect, a paradigmatic selection is made. The system of colour is meaningful but, in itself, it is not a semiotic resource, but rather the system by which the representational meaning potential of the semiotic resource of the traffic light discourse is realised. Other semiotic resources include sculptures (O'Toole 1994), music (Callaghan & Mcdonald 2002), mathematics (O'Halloran 2000) and visual images (O'Toole 1994; Kress & van Leeuwen 1996). Of particular interest in this chapter is the semiotic resource of visual images. A discussion based on a comparison of language and visual images as modalities is initiated in Section 3.

Keeping with Halliday's application of the term 'semiotic resource', it is necessary therefore to be more judicious in the use of this term in multimodal re-
search so as to minimise terminological confusion. Royce, for example, proposes an ‘intersemiotic complementarity’ that describes the operations of ‘intersemiotic resources’ (Royce 1998:45) to produce in the reader, the feel of a single, coherent multimodal page. Unhelpful implications may arise in the naming of the processes responsible for the synergistic combination between the two modalities as ‘intersemiotic resources’, suggesting that there is a set of semiotic resources responsible for intersemiotic relations. This will lead to the question of what then are the expression and content planes of these ‘intersemiotic resources’ as well as what are the systems operating within these resources.

I propose that the nature of the processes at work in the co-deployment of modalities may not adhere to the characteristics of semiotic resources, therefore labelling these processes as intersemiotic resources may be counter productive. Following O’Halloran (1999), I have found it more productive to refer to processes such as ‘semiotic metaphors’ (O’Halloran 2003) and ‘homospatiality’ (Lim 2004) simply as mechanisms. They are responsible for the multiplication of meaning (Lemke 1998) that arises in the synergistic co-deployment of various semiotic resources. The more neutral naming of these processes as mechanisms, frees them from the complications of the association as semiotic resources, as well as serves to establish a theoretical platform where further unhindered investigations into the nature of these processes can take place.

Likewise, van Leeuwen (2002) also notes that typography has been increasingly seen as a semiotic mode in its own right, although van Leeuwen observes that typography does not appear to be quite a stable semiotic system yet. Van Leeuwen’s reservation is reasonable. I foresee that typography may never arrive to the stability as a semiotic resource, for instance, like language, because of the nature and disposition of typography. In my approach to the understanding of a multimodal text (Lim 2004), I have found it more helpful to view typography, not as a semiotic mode, but as a configuration of systems, with many sub-systems operating within it. Typography is thus a system network on the expression plane of the semiotic resource of language. Similarly, it is more productive to classify lines, shading and shape not as semiotic resources but as systems and sub-systems through which the pictorial modality expresses meaning. These systems represent a configuration of meaning potential of semiotic resources, having within them paradigmatic options, instead of an expression and a content plane.

3. Visual images as semiotic resources

Having discussed the nature and characteristics of semiotic resources, it is appropriate to examine if the claim of visual images as semiotic resources is tenable.
Comparing the visual images, with the semiotic resource of language, the visual images can be observed to have an expression plane (display stratum) and a content plane (the grammar and semantics strata). Halliday (1978:39) proposes that language is a “system of meaning potential”. Operating on the content and expression plane, each plane has a network of options where meaning is made through the paradigmatic selections. Language is an abstraction until it is expressed through either speech or writing. When the linguistic semiotic is expressed through sound, the display stratum is phonology. When language is realised through writing, the expression plane is graphology or in the instance of a printed text, typography.

O’Toole (1994) and Kress and van Leeuwen (1996) argue that visual images are tools or semiotic resources, just as competent as language, in meaning-making. The adoption of the stance that both the linguistic and pictorial modalities should share an equal status is now widely recognised (for example, Baldry 2000; O’Halloran 2000; Thibault 2000; Kress & van Leeuwen 2001). Van Leeuwen (2000), for instance, criticises the negative comparisons between language and visual images in his refutation of Barthes’ (1977) earlier proposition that words have ‘fixed meaning’ while images are ‘polysemous’. In addition to this, van Leeuwen (2000) confronts some misconceptions regarding the pictorial semiotic such as the assertion that visual images cannot represent negative polarity. Van Leeuwen (2000:179) also argues that visual semiotics should focus, “not only on the image as representation, but also on the image as (inter)act”.

I add to these conceptions by proposing that visual images, like language, are conceptual abstractions, each with its potential of meaning. As shown in Figure 1, language is an abstract system of meaning potential, realised through its grammar, and this is expressed on the display stratum, through typography in printed texts. In the same manner, visual images are also abstractions that are realised through a visual grammar network. On the display stratum they are expressed through visual systems of graphics, such as form, perspective, layout and strokes.

Figure 1. Instantiation of language and pictures (reproduced from Lim 2004)
The separation between display and grammar for the pictorial semiotic may be an uneasy one, due to the interwoven nature of the elements on both strata in semiosis. Nonetheless, it is useful and necessary to distinguish between the two planes, to recognise the systems' potential as well as to understand the meaning-making process. The example in Figure 2 demonstrates the theoretical distinction between the display and grammar strata.

The expression plane of the iconic face in Figure 2 involves the system of colour and form used to make meaning. This refers to the thin black line, the two black circles as well as the larger white circle. Each of these elements independently as well as together as a unified whole, has meaning potential. The grammar stratum, as extensively theorised by O'Toole (1994) and Kress and van Leeuwen (1996), relates one disparate element to another and explains how the whole functions cohesively to make meaning. Just as the grammar of language concerns itself with the chains of words to form coherent sentences, the grammar of visual images is about the piecing of one item with another to bring across a coherent message. The relation of the parts into wholes, for instance, how the various shapes form an iconic face, operates on the grammar stratum. This grammar is culturally dependant and governs the way a reader 'reads' and construes the visual message.

Following O'Toole (1994), a hierarchy of different ranks analogous to Halliday's (1978) rank scale for language is proposed to look at the meaning made on each of the rank units, from Member to Figure and Episode to Work. This adoption of a rank scale, operating within the principle of constituency, where wholes on each rank make up larger units in a hierarchy, facilitates a more systematic analysis of the meaning made in the different units on the visual grammar stratum. In a sense, this delicate distinction between the display and grammar stratum can be made, with the expression plane being largely concerned with the surface features of the text and the content plane having to do with the interactions and negotiations between the different elements in the text.
4. Extending the claim of arbitrariness

Having established visual images as semiotic resources, analogous to language, it could be useful to look at some of the similarities and differences in nature between the two of them. Eisner (1990:13) cites evidence claiming that words and visual images “are derivatives of the same origin”. It is hardly surprising then that words and visual images share many similarities between them, being derived from a common ancestry. Diringer (1986) further elaborates that pictographs and pictograms are essentially the pre-embryonic stage of writing. The final stage, according to Senner, is achieved

when pictograms, logograms, and ideograms became phonograms, that is, when the phonetic value of the sign became independent of the original referent of the sign (and eventually of the external shape) and could be combined productively in a conventional system to intercommunicate. (Senner 1989:5)

Despite sharing the same historical origin, and many similarities, I argue that the difference between the language and visual images lies in the degree of arbitrariness in the relationship between the signifier, particularly the expression plane of the semiotic resource, and the signified, the concept that is represented. Saussure (1967) proposes that there is an *arbitrary relationship* between the signifier and the signified in language. In contrast, Kress (1993:173) tends towards the other extreme arguing that “the relations of signifier to signified, in all human semiotic systems, is always motivated, and is never arbitrary”. He also suggests that production factors such as the ‘interest’ of the producers, which is subjected to temporality, society and culture, plays a crucial role in the organisation of the sign. More recently, Kress and van Leeuwen (2001) also take into consideration the strata of design, production and distribution in their discussion of multimodal communication.

I propose that the claim of arbitrariness between the signifier and the signified can be further extended. Leaning more towards the interpretation rather than the articulation of the sign in this chapter, I place a greater emphasis on the meanings that can be obtained through the reading of a sign, as opposed to the meanings the sign was produced to convey. Sardar and van Loon (2000:44) define reading (in the field of media studies) as “the process of interaction when a text is analysed as well as the final result of that process, the interpretation.” My stance is inclined towards the post-structuralist position that meaning is found within the unregulated play of *reading* the text, through the interpreting of various semiotic systems, as elaborated in the works of Roland Barthes (1977), Umberto Eco (1979) and Jacques Derrida (1976). The post-modernistic position also paves out the understanding that a text *means* independently of authorial intentions and could be analysed as an artefact of culture.
Taking this position therefore, I hesitate to commit to Kress' (1993:173) claim that all signs are "never arbitrary". His argument that signs are 'motivated' from the perspective of the producer's interest can also be problematised. A question that may be raised from Kress' (1993) discussion is that if the sign is so "opaque" or so inaccessible to the reader to the extent that the 'motivated' meanings are missed, can the sign still be considered as a legitimate sign, now that it fails in its function to effectively communicate meaning. This is seen in his example of the child's drawing of a car (Kress 1993:172). As Kress (1993:178) comments rather paradoxically, "without that accidental presence [of an adult with the child producer] neither interest nor motivation would be easily recoverable". In other words, the intended 'motivated' meaning of the sign may never have been understood by a reader. In such cases then, can the drawing still be considered as a sign when there is no reader that can access the meaning of the sign? Peirce (1958:228) regards a sign as "something which stands to somebody for something in some respect or capacity."

For the purpose of this chapter, following Peirce (1958), I interpret the sign as a tool that facilitates communication, thus necessitating both producer and reader to share the same assumptions and thereby understanding the meanings made through the shared semiotic modalities within a community. Hence, I prefer to view the relations between the sign and the object it signifies on a scale of arbitrariness with the conception of codification on one end and the notion of an analogon on the other end of the scale.

The signifier of language could be expressed either through sounds in phonemes, in the spoken form, or visually through typography or graphology, expressed in the written form. Concerning the spoken form, that is speech, it is irrefutable that the relation between the signifier and the signified is arbitrary. This is stated with the exception of onomatopoeia (sound words), where the signifier mimics the vocalization of the signified, for instance, the 'ringing' of a telephone. The claim of arbitrariness is also valid in writing systems of language, where the signifier belongs to the syllabic and alphabetic type. The concept of a female child, for example, could be realised by different signifiers in different languages. For instance, in English the signifier is "Girl", in French it is "Fille", and in Italian it is "Ragazza". The lack of an obvious physical relationship between the signifier 'girl' and the signified concept of a 'female child' indicates that their connection is capricious. However, in certain writing systems such as the logographic type, where the signifiers are derived from icons of the objects represented, this claim of arbitrariness may perhaps need to be modified. Certain types of writing systems for language, although having each symbol representing a morpheme, may have their signifiers originating from pictograms, evolving into a standardized writing system over time. Some prominent examples are Chinese Characters and Egyptian
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Figure 3. Evolution of 11 Chinese characters through time (reproduced from Keightley 1989)

Hieroglyphics. Tracing the history of such logographic writing systems can illustrate the standardisation and codification of pictograms into a writing system of language over time. Some instances of this are seen in Figure 3.

With this, it is perhaps appropriate to propose differing degrees of arbitrariness between the signifiers and the signifieds in language. As opposed to language, visual images have a lower degree of arbitrariness, thus implying a higher degree of iconicity. Visual images, however, are primarily iconic; that is, they resemble the subjects they represent. Barthes (1977) proposes the term the perfect analogon to describe the highest possible level of iconicity or mimesis with the object, such as the image that a photograph produces. In visual images, where there is a higher level of iconicity, the signified and the signifier are related through mimesis or resemblance. The opposite end of the scale as opposed to the analogon is the abstraction. The analogon has a lower degree of arbitrariness whereas the abstraction has a higher degree of arbitrariness. The typography/graphology of a language is usually the abstraction. Scientific and mathematical notations are those that also lean towards the higher ends of abstraction. Expressionist paintings such as works
of Picasso, for instance, will fall about midway between the scale of abstraction and iconicity.

Since abstractions are characterised through a lower level of iconicity but a higher degree of arbitrariness, the relationship between the signifier and the signified is reinforced through codification. In other words, codification links the signifier with the signified sharing a high degree of arbitrariness between them. Codification or ‘grammaticalisation’ can only take place through effective socialisation into the semiotic community. The term *semiotic community*, follows from Labov’s (1972) ‘speech community’, and describes the people in the same culture, sharing the same assumptions, and selecting choices within the common semiotic resources to make meaning. For instance, in mathematical notations, there is a higher degree of arbitrariness between the signifier and the signified and therefore, stronger codification is required, thus necessitating a deeper initiation of members into the particular community. Notations such as $\pi$ and $\Sigma$ can be baffling for the non-members, and their dense meanings are only accessible to members of the particular semiotic community.

5. Basic building blocks: Words and icons

Just as the building blocks of meaning in language are lexical items or words, I propose that the building blocks of visual images are *icons*. In addition, the lexico-grammar of a certain language is culturally specific. For instance, a speaker of Chinese deploys a different lexicon than a speaker of English. Likewise, icons are contextually and culturally specific as well. Different semiotic communities would have different styles of representing the same objects and ideas.

However, the question of where to delineate the boundaries of an icon may arise. For instance, with reference to Figure 2, when is a dot recognised as merely a dot, and when is it functioning as an iconic eye? Icons are the pictorial representations of objects identifiable in the culture. Thus, the recognition of an icon as resembling an item is crucial in deciding what constitutes an icon. The arrangement of lines and dots in a certain manner or ‘visual-grammatical’ placement, for instance in Figure 2, may bring about the recognition of an iconic face. This identification of the icon is dependant on the relationship between its surrounding co-text, in this example, the lines and the dots. The identification of the icon, in turn, also allows us to recognise the iconicity of these co-texts. For example, after recognising the iconic face, the significance of its co-text becomes apparent, for instance, it is clear that the dots represent the eyes and the line stands for the mouth. This is similar to how certain ambiguous words in language are disambiguated when construed in relation to their surrounding co-text, i.e., the other words sur-
rounding them. For instance, the word “bank” can either mean the sides of a river or a financial institution. When used in “The robbers broke into the bank”, the polysemousness of the word is disambiguated. It must be clarified that the internal arrangements of lines and dots to constitute an icon are part of its visual grammar, just as the relationship between part and whole is the grammar of the semiotic resource. In other words, the icon itself lies on the expression plane of the modality, although the composition of an icon and the relationship between iconic elements belong to the grammar stratum.

Due to constraints of time and space, it is not possible for a detailed investigation into the different implications of the proposal of icons as the vocabulary of visual images to be undertaken here. Nonetheless, my proposal will hopefully initiate further work along this direction, which can contribute to a better understanding of the nature of visual images as semiotic resources.

6. Conclusion

This chapter has provided an ambitious attempt to address the complexities of some of the issues raised by multimodal research. The recognition of multimodality as a significant aspect of meaning-making in text has ushered many issues and questions pertaining to multimodal research. This chapter has been titled as Problematising 'Semiotic Resource', because its main objective has been to raise some questions, many of which are concerned with the nature of a semiotic resource, and to examine some of the implicit assumptions in multimodal research. A further aim of the chapter has been to initiate an interest in the semiotic resource of visual images, especially the systems and processes that operate on its expression and content plane. Although some attempts at answers have been proposed in this chapter alongside with the questions raised, the answers presented here are rudimentary and far from final. The purpose of this chapter has not been to offer any simple solutions, but rather to highlight some relevant issues concerning the visual message and the multimodal text, as well as to stimulate a meaningful discussion stemming from the ideas proposed here.

Note

* I would like to thank Kay O'Halloran for her insightful comments on an earlier draft of this chapter.
References


