

## THE IMPACT OF FEDERAL ROAD SAFETY AWARENESS TEXTS ON THE LEVEL OF ROAD ACCIDENTS IN NIGERIA: A SEMIOTIC INVESTIGATION

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### Abstract

The major focus of this study is to ascertain the impact of federal road safety awareness texts on the level of road accidents in Nigeria from a semiotic perspective. The study is motivated by the observation that despite government's efforts to disseminate information on road safety through road signs embedded in FRSC manual the number of people involved in road traffic accidents continue to rise every year. The specific objective of this study is to ascertain how icon, indexical and symbolic sign are interpretable by road users as well as to determine additional or alternative lexical/grammatical features that can be used to complement and substitute the existing road signs for more effective interpretation by road users. The present study employed a qualitative research design. The population of this study comprise 50 motorists in Onitsha metropolis. Using purposive sampling technique 43 road awareness texts selected from the FRSC Highway Code were used as a thematic model to obtain the views of the motorists. This study affirmed that the language of a road traffic code is signs-dependent. These signs are intended to identify and warn road users against specific hazards without the use of words. They may also describe safety precautions, advise users on the actions to take, or provide other directions that can eliminate or reduce hazards. This study discovered that the level of awareness of drivers is a serious impediment to drivers understanding of road signs. This study recommends that road signs should be redesigned in a manner that could be easily understood by all categories of road users.

**Keywords:** FRSC manual, road safety, multimodality, road sign

### Introduction

The study is motivated by the observation that despite government effort to disseminate information on road safety through road signs embedded in Federal Road Safety Corp (FRSC) manual, numbers of road traffic accidents continue to rise every year. Road signs comprise of symbols, indexicals and icons mounted or drawn on the roads or roadsides. Road signs are usually the combination of linguistic and non-linguistic elements used to give specific information to road users to prevent incidences of collision. A multimodal analysis is an approach to discourse that focuses on how meaning is realized through the use of multiple modes of communication in addition to written or spoken language.

It is noted, however, that despite the road signs that are visible on the roads, accidents still occur due to violation of the traffic rules as represented by the signs. This incessant road mishap calls for serious questions on the effectiveness of the road signs as a vehicle of information dissemination to the road users. This study, therefore, sought to ascertain how road signs which are iconic, indexical and symbolic are interpreted by commercial drivers as well as to determine additional or alternative lexical/grammatical features that can be used to complement and substitute the existing road signs for more effective interpretation by road users.

### Conceptual Clarifications

#### Communication

Humans live a communication-dependent life; hence communication is central to the functioning of the society. Akpan, Senam, and Elijah posit that communication involves the reception and interpretation of stimuli affected by a mutually intelligible concept called language (685). Lyorza sees communication as a kind of meaning-dependent interaction, where the interacting agents share a

common set of signs and semiotic rules (27). Meaning and understanding are therefore central to information, be it spoken, written, signs or signal in a given linguistic and cultural community. Communication could be verbal or non-verbal, written or unwritten. Hence, Nigeria has designed a Road Traffic Code as documented in their manual as a guide for road users, motorists and pedestrians. The code includes road signs, road markings, computerized traffic lights, traffic control signals, among others, with communicative symbols where necessary or applicable.

### **Multimodal Discourse**

Road signs are among the forms of a communication system that belong to what has been described as multimodal discourse. In this area of study, language is seen as a code, a system structured in ways that mean something in an independent medium, either from written text, music or art. The message is the meeting point of different codes. Thus, a mode is a means of expression used to convey meaning. Each message uses several iconic, indexical and symbolic modes thus becoming multimodal. Language is defined by Eggins as contextual, functional, semantic and semiotic (4). She further declares that the most elaborated semiotic system is language as in any interaction; the interlocutors get involved in conveying exactly a message the audience should be aware of as well as the right choice of word.

### **Road Signs and Semiotic Modes**

As defined in the Nigeria Highway Code, the road is a path established overland for the passage of vehicles, people, and animals (1). According to Makinde and Opeyemi the road signs convey messages in words or symbols and are erected to regulate, warn, or guide road users motorists, and pedestrians, etc (608). Human ingenuity has made contacts and links possible among the people at different locations in our society through the creation of connectivity within the vast space that makes up the society. This connectivity comes in form of roads, riverways, airways, etc. The most visible and mostly used by the people, using different types of means of transportation, is the road. The need for interconnectivity makes the road network so complex, as there exist different types, such as the expressways, two-lane highways, dual carriageways, drive pathways, intersections, roundabout, T-junctions, interchanges, intercessions, U-turns, etc., all having their complexities (Nigerian Highway Code).

In semiotics, the index is the phenomenon of a sign *pointing to* (or *indexing*) some object in the context in which it occurs. Therefore, a sign that signifies indexically is called an **index**. The modern concept originates in the semiotic theory of Charles Sanders Peirce, in which indexicality is one of the three fundamental sign modalities, the others being iconicity and symbolism (32). As captioned by Silverstein, these are:

- *Icon*: a sign in which "the perceivable properties of the sign vehicle itself have isomorphism to (up to identify with) those of the entity signaled. That is, the entities are 'likenesses' in some sense
- *Index*: according to Silverstein (1976) is a sign which "the occurrence of a sign vehicle token bears a connection of understood Spatio-temporal contiguity to the occurrence of the entity signaled (14). That is, the presence of some entity is perceived to be signaled in the context of communication incorporating the sign vehicle.
- *Symbol*: the residual class, a sign which is not related to its object by bearing some qualitative likeness to it, nor by co-occurring with it in some contextual framework. These "form the class of 'arbitrary' signs traditionally spoken of as the fundamental kind of linguistic entity. Sign vehicle and entity signaled are related through the bond of a semantico-referential meaning which permits them to be used to refer to any member of a whole class or category of entities.

### **Theoretical Framework**

#### **Theory of Semiotics**

This work is anchored on semiotics, which is based on the observations of the German psychologist Max Wertheimer (45). This theory posits that recognizing a sign is made possible as a result of the "cortical networks" that allow an object to be perceived by the brain concerning space and other activities around the object. The first theoretical dimension of this theory is built on the assumption

that representation and communication always draw on a multiplicity of modes, to add to the meaning. It pays attention to analyzing and describing the full collection of meaning-making resources that people use (spoken, visual, written, gestural three-dimensional, and others, depending on the domain of representation) in different contexts, and to the development of the means that show how these are organized to make meaning. The second assumption of multimodality is that over some time, resources are socially shaped to become meaning-making resources. These meanings, social, individual or affective are further articulated according to the requirements of the social groups or communities in the environment. The third multimodal assumption of this theory is that people orchestrate meaning through their selection and configuration of modes, foregrounding the significance of the interaction between the road signs and the road users. Thus, all communicational acts are shaped by the norms and rules operating at the moment of sign making and influenced by the motivations and interests of people in a specific social context.

### Methodology

The present study employed a qualitative approach as it is a method most suited for awareness campaigns in terms of describing and interpreting meaning embedded in road signs. This study paid particular attention to iconic, indexical and symbolic modes as the possible misinterpretation of messages, especially whether the image and graphic choices used in the texts could act as constraints during the decoding process in social contexts. The population of this study comprise 50 commercial drivers Upper Iwaka Motor Park Onitsha. Using, purposive sampling technique 43 road awareness texts selected from the FRSC Highway Code were used as a thematic model to obtain the views of the motorists (1). The data generation of this study was based on two specific procedures. The first procedure of this study was aimed at discovering the educational qualification of the drivers while the second procedure is based on ascertaining the views of the drivers on the function of the selected signs as described in FRSC Highway Code published in 2016.

### Data Presentation and Analysis

From the result obtained from this study, it was discovered that the majority of the drivers at Upper Iwaka motor Park have the data below:

**Table 1: Bio-data of respondents**

	VARIABLE	NO OF RESPONSE	PERCENTAGE%
<b>Table 1: Gender</b>			
1	Male	90	90
2	Female	0	0
	<b>TOTAL</b>	<b>90</b>	<b>100.0</b>
<b>Table 2: Age Distribution</b>			
1	18-25years	5	6
2	26-35 years	10	11
3	36-45 years	32	36
4	46 years and above	43	47
	<b>TOTAL</b>	<b>90</b>	<b>100</b>
<b>Table 3: Educational Qualification Distribution</b>			
	VARIABLE	NO OF RESPONSE	PERCENTAGE
1	WASSCE/GCE/NECO	67	73
2	NCE/OND	10	11
3	B.Sc./HND	14	15
4	M.Sc./MBA	0	0
	<b>TOTAL</b>	<b>90</b>	<b>100</b>

<b>Table 5: Accident Occurrence Ratio</b>			
(1)	(2) 1-2	<b>6</b>	<b>7</b>
(3)	(4) 2-4	<b>15</b>	<b>17</b>
(5)	(6) 4-5	<b>38</b>	<b>42</b>
(7)	(8) 6 and above	<b>31</b>	<b>34</b>
	<b>TOTAL</b>	<b>90</b>	<b>100.0</b>
<b>Table 7: Years of Experience in driving</b>			
	<b>VARIABLE</b>	<b>NO OF RESPONSE</b>	<b>PERCENTAGE</b>
1	<b>1-5 years</b>	7	8
2	<b>5-10 years</b>	28	31
3	<b>10-15 years</b>	7	8
4	<b>15-20 years</b>	48	53
	<b>TOTAL</b>	<b>90</b>	<b>100.0</b>

Source: Field Survey, 2020

From the review of road signs contained in the federal road safety awareness manual and in line with the theory of semiotics as propounded by Charles Sanders Peirce (1958), this study found that majority of commercial drivers in Upper Iwaka motor parksee road signs as words, numbers, sounds, photographs, paintings and road signs among and more. That guide road users on the effective use of the roads.

Following the theory of semiotics, the major principle of effective communication is to insist on cohesion and coherence in the dissemination of messages. However, the majority of the drivers at the study area complained that they find it difficult to understand some of the road sign. This implies that the producers of FRSC texts overlooked the importance of coherent framing. In most texts, the idealized information is too abstract to have any relation with the intended theme of the text. This view is supported by Kress and van Leeuwen (1996) who observe that viewers of spatial compositions are intuitively able to judge the weight of the various elements of composition and the greater the weight of an element, the greater its salience. Salience or prominence is the result of a complex interaction of such elements as size, the sharpness of focus, colour contrast, placement in the foreground or background.

Undoubtedly, FRSC texts contain life-saving messages which require a serious mood with which to decode the intended meaning. A mixture of certain colours has the potential to project mixed interpretations and consequently distort the intended meanings. For example, the graphic messages in data 1 and 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 and 30 are presented in *red* (depicting danger), while 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 are presented in blurry blue. Yet, the themes in the two texts are associated with the dangers and the need to use the road with caution.

*This assumption is in line with* the postulation of Kress & van Leeuwen (1996) on the effective use of colour in the designing of semiotic modes. The colour schema according to the above author is outlined below:

- (i) *Red*: is associated with our most physical needs and our will to survive. It exudes a strong and powerful masculine energy. It depicts strong leadership qualities, warmth, passion and excitement. It can also depict anger and danger and hostility.
- (ii) *White*: is associated with purity, innocence, completion, chastity and cleanliness. It opens the way for the creation of anything the mind can conceive because its basic feature is impartiality and independence.

- (iii) *Green*: is the colour of balance and harmony. It is the colour of growth, the colour of spring and rebirth. It renews and restores depleted energy. It gives humans the ability to love and nurture themselves and others unconditionally.
- (iv) *Black*: relates to the hidden, the secretive and the unknown, creating an air of mystery. It keeps things bottle up inside, hidden from the world.
- (v) *Blue*: is associated with trust, honesty, loyalty and integrity. It is also associated with responsibility, inner security and confidence.

Furthermore, the use of semantically appropriate icons, symbols, and indexical should be strategically pursued by the formulators of road traffic signs. This is crucial because some texts were overloaded with many visual signs which had no explanation will be misleading to the audience. This semantic imbalance affected the coherence between the graphic and visual information in the process of meaning-making. For example, the text in data 4 is overloaded with multiple semiotic modes. The text contained three different symbols joined together. A critical look at the symbol shows that the triple image has different layers of meaning. This might make the text incoherent because it contravenes the regulative principles of textual communication which requires that a symbol should be used with minimum effort. The sematic overload had implications on the interpretation of meaning. Only people who had intertextual knowledge about such signs were not able to decipher the intended meanings. Thus, if messages in road safety awareness texts are not regulated and coherently packaged, the producer's risk not fulfilling their objectives.

One of the reasons for the incoherence in FRSC texts pertains to the use of abstract modes. It was found that either the visual or graphic mode was abstract. In some instances, both modes were ambiguous. Data 1 were with a caption '*drive and drive*' is a clear case of an ambiguous road traffic awareness text. Coherent multimodal texts are those that communicate a specific, clear, and straightforward message. This means that the text must make itself easy and accessible to the viewers or readers who, in most cases, have no time to spend reading complicated messages. If the image is abstract deciphering of the message becomes rather difficult. Data two which is an index is also a clear case of a straight to the point road sign.

Due to the ever-increasing numbers of road traffic accidents, one would expect those campaign coordinators would ensure that brochures are designed as simply as possible, making them accessible and comprehensible to the audience. By making images familiar to the audience, it is assumed that they would understand and comprehend such images. In road safety awareness campaigns, the intentions of the producers of brochures are to design texts whose messages can easily be decoded by the target audience driving or walking past.

It was found that in many cases, the visual mode alone was not coherent enough to convey a meaningful message, just as the graphic mode was not. The two modes needed to hang together to convey any meaning. In certain instances, even where the two modes were read in collaboration, it still required a great deal of intertextual knowledge and experience to effectively decode the message. This was because there was minimal coherence between the modes. Visual and verbal elements should be considered as contributing to an integrated text. They refer to the spatial composition of a text as an overarching code whose rules and meanings provide the multimodal text with the logic of its integration and discuss composition in terms of three interrelated systems: information value, salience, and framing. Information value refers to the placement of elements in a composition that endows them with the specific informational values attached to the various zones of the image: left and right, top and bottom, centre and margin.

However, the texts in Data 1, 5, and 7 have low modality because the audience's real world is not depicted in the narratives. Thus, the texts communicate in a distant and impersonal fashion which does not guarantee representational meaning. The use of colours in a multimodal text involving image and linguistic information represents a particular mood or feeling which, if ignored, can ultimately affect the coherence of the text as is the case with some FRSC texts. It is not clear

whether the presence of linguistic messages in mixed colours was a matter of choice or oversight by the producers of FRSC texts. The fact of the matter is that colours in a multimodal text have meanings; thus, a conscious thought should be applied in the choice of colours so that there are no disparities in the projected meaning of the text. It is clear that attaching meaning to colour is a Western tradition, and interpreting the symbolic meanings behind the choice of certain colours requires a Western schema which may not be there in the target audience.

### **Summary of Findings**

The main purpose of the study was to analyse textual and visual messages on road safety awareness in FRSC to establish their correlation, and how meaning is conveyed. The majority of the drivers agreed that the essence of road traffic signs is to safely guide road users. The findings of this study also indicate that semiotic modes in FRSC texts are generally incoherent to the drivers due to the level of their knowledge. This is due to the use of abstract and ambiguous modes; use of complex and misplacement of compositional elements; and semantic overload. This study is relevant to scholarship because it will provide valuable insight into the kinds of texts produced for road safety awareness and how road safety information is perceived by a motorist. Also, the findings of the study will be significant to all the regulatory stakeholders in the government such as the policymakers, Federal Road Safety Commission, police and the Vehicle Inspection Officers (VIO), because it will make their minds to be thorough at redesigning some sign where necessary to ensure that the signs are properly understood by road users.

### **Conclusion**

Based on the findings of this study, it has become apparent that meanings in FRSC road safety campaign materials are not properly enacted. This is due to the use of incoherently packaged semiotic resources. It has been established that, in most instances, both the graphic and visual modes communicate messages which are unclear and ambiguous. Therefore, the likelihood of misinterpreting the intended messages by the drivers who are largely FSLC and WASSEC holders is very high. To construct result-oriented publicity materials, an effective communication model is needed. The model should include properly designed campaign materials in which the semiotic resources coherently project the intended messages to different categories of drivers with different educational background. This will drastically reduce the occurrence of road accidents in the study area.

### **Recommendations**

In line with the findings of the study, the following recommendations were drawn:

1. There is the need for the FRSC to employ the services of linguistic and semiotic experts that will repackage the road safety awareness texts effectively. This is based on the fact that most of the road signs contained in the FRSC brochure are semiotically incoherent and inefficient.
2. There is an urgent need to deploy the services of experienced semiotic and linguistic experts to explore avenues of crafting all the road signs in the local dialects in Nigeria to accommodate drivers who have a low level of awareness and education.
3. The use of Pidgin English should also be utilized as a medium of spreading road traffic awareness texts because it is a language that is widely spoken mostly among the middle and lower class of motorist in the Nigerian society.
4. There is a need for FRSC to embark on efficient advocacy programs to re-educate and enlighten the numerous road users in the country. They should also ensure that motorist who has thoroughly understood the road signs are allowed to drive on the road. To achieve this, traffic signs should be taught in driving schools, motor parks and markets.
5. The law enforcement agents should carry out their duties and responsibilities with trust and integrity to reduce the carnages and destructions that are recorded daily on Nigerian roads.
6. There should be media advocacy that raises the level of consciousness of the road users especially through the use of local language of the people. Federal Road Service Commission (FRSC) should show commitment and dedication to duties by taking traffic campaigns to motor parks and markets.

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**Appendix**

