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An Explicatory Overview of Human Communication and Sign Species

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ABSTRACT

This paper is a descriptive, theoretical review of the relationship between human communication and sign species. This explicatory review attempts to look at communication from a semiotic perspective. Communication is perceived in this context as the interaction among individuals or groups; it can be verbal (spoken and/or written) or nonverbal (natural and/or artificial). The tremendous use of signs keeps the flow of delivering and receiving messages going. Admittedly, the natural omnipresence of signs and their artificial abundance block us from admiring their importance in directing our actions or shaping and re-shaping our schemata. One can think of how a driver's performance would be affected when driving on an asphalted street and on a stony track. Apart from concentrating on the road (and driving) in both instances, the driver would certainly look for artificial signs more in the former, and for natural obstacles in the latter. Therefore, this paper explores the roles of signs in such conditions. First, it provides a brief account of the nature of communication and its rudimentary components: sender, receiver, code, message, medium, context, feedback, and interference. Second, verbal and nonverbal communication modes are discussed to form two main divisions of this article. These subsections draw an outline of the general frame of communication. The goal behind this is to lay the background for understanding the role of the numerous signs in delivering and receiving messages. After that, these are followed by an independent section on sign species and their types, *viz*.: symbols, icons, indexes, signals, symptoms, names, and numbers. The use of colours and emojis, as forms of informative communication, are reviewed as well. Finally, the last section discusses a few general features relevant to communication and signs. The importance of studying intercultural communication is briefly explored at the end of this overview.

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1. Introduction

Language as a communication tool is part of any culture and a medium of its acquisition. Besides, language is used for information transmission and knowledge documentation. For purposes of clarity, we adopt the definition of language paraphrased by Alwalss [1] where language is defined as "a system of an acquired cognitive ability of a structured sound arrangement (or its written representation) to form larger units through which communication purposes in a language community are conventionally established and maintained".

The problem that arises when studying any language-oriented discipline is the overlap with other branches, various-sized portions of which interconnect and accumulate to form its final aggregate. Our current topic—communication—can be a perfect example. Communication studies draw from language, (cognitive) linguistics, sociolinguistics, psycholinguistics, pragmatics, semantics, speech acts, discourse analysis, and semiotics (or sign studies). Each of these areas has its relations with other disciplines, too. For instance, discourse analysis is influenced by studies related to theoretical sociology, social anthropology, philosophy of language, and linguistics. The interconnectivity among these disciplines results in an unavoidable overlap.

To explicate this overlap further, semiotics and pragmatics are given as an illustration. Semiotics aims to study the production of signs, their interpretation, and their use by humans (and animals). The current study draws from semiotics in terms of its classification of sign species, which are reported in relation to message delivery as well as sign functions and interpretations. On the other hand, pragmatics is broadly understood as the study of the relation between signs and their interpreters, which may partly (on its surface structure) categorise this study into that domain. However, the main interests of pragmatics are irrelevant to the scope of this study. In effect, pragmatics is viewed to include "patterns of linguistic actions, language functions, types of inferences, principles of communication, frames of knowledge, attitude and belief, as well as organisational principles of text and discourse" ([2], p. 4). It deals with meaning in its context from the perspective of the sender, the receiver, the analyst, and the message content so as to gain an insight into how language functions in life.

To sum up, this paper deals with 'adult' human communication with a special reference to sign species (i.e., semiotics); it will be evident that we, as humans, communicate around-the-clock with others, or with our surrounding environment, or even with ourselves (technically termed 'inner speech', see [3]). This condensed overview is confined to discuss in plain terms the relationship between communication and semiotics. Or put differently, it is about signs in general and their impact on human communication (individually or collectively).

2. Rationale

As stated above, communication is basically a process of exchanging meaning via concepts or a means of delivering messages via different signs. Its span spreads from 'early' childhood to 'late' adulthood. Let us take the concept of 'danger' as a case of explication. Danesi ([4], p. 4) explains that danger "refers to any situation that sets off an inner sense of uncertainty, apprehension, or fear with regard to its potential for causing harm, injury, pain, suffering, trouble, difficulties, or death". Informing the recipient about 'danger' can be expressed by different ways. A few examples will suffice: warning road signs (visual/surrounding), phrases like, *'Caution'*, (verbal/written), raising an open palm as a sign to stop (visual/nonverbal), sensing the heat from its source (tactile/experience), or simply uttering a verbal warning, *'Danger'*. This means that any internal or external stimulus will trigger communication with self or with others. The 'inner sense' (as a stimulus), will create a reaction to avoid danger (a response). It is simply a form of communication with the surrounding.

One of the reasons for compiling this article is the need to showcase other non-linguistic elements involved in communication. Akmajian et al. [5] argue that linguistics remains focused on structural properties of language, and "has tended to view communicative phenomena as outside its official

domain" (p. 365). Their view in this regard is extended to semantics, language philosophy and psychology of language where the focus is laid on meaning, truth and sentence processing (respectively) without enough investigation on details of communication specifics and phenomena. Finally, they assert that "some sociologists and anthropologists concern themselves with conversations, but have bypassed (or assumed an answer to) the question of the nature of communication itself" ([5], p. 365). This paper concerns itself with various aspects of communication. It attempts to fulfill several objectives, including:

- an outline of the nature of communication and its common components;
- a short account of verbal and nonverbal communication (NVC);
- a precis of the major divisions of sign species; and
- a conclusion to debate on topics pertaining to themes reviewed in this article, particularly the role of nonverbal communication across cultures.

To achieve these goals, this overview is structured as in the following layout. The subsequent section provides a summary of the main communication components, followed by condensed reviews on verbal and nonverbal communication. After that, there is a full section on sign species and their uses and functions in realising communication in our lives. Finally, we conclude this article with general comments relevant to points explored earlier.

3. The Communication Components

In plain words, communication is considered in this study as the process of sending, receiving, interpreting and sharing meaning and messages. Pearson et al. ([6], p. 8) define communication as "the process of using messages to generate meaning". The key elements in these crude definitions reveal several features. First, there is the process which is a dynamic activity that keeps changing and moving. Another feature is to understand the message, where this 'understanding' implies perception and interpretation, which in turn is based on one's experiences and past knowledge. Shared meaning clearly suggests a second party, technically known as the 'receiver' as opposed to the 'sender' (or source). The sender and the receiver are supposed to know the code to get the message through. The third feature is a 'purposeful' meaning which indicates the intended message of the source. If it has no purpose (or lacks intentionality), then it can be considered as merely sounds or acts of behaviour. The verbal purpose varies: to persuade, to inform, to entertain, to strengthen personal relations, to warn, or whatever the intended function might be. These functions are related to the sender's thoughts, experiences, perceptions, interests, and feelings. Let us study these features (or components) of communication with more explanation. The following components are based on models presented by Shannon and Weaver[7], Jakobson[8], and Schramm[9]. The grouping of these components is subjective (stylistically driven by space purposes), and undoubtedly, they were not reported as such in their models.

3.1. Sender and Receiver

The sender and receiver are sometimes referred to as addressor/addressee, author/reader, source/destination or speaker/audience. The sender *intentionally* and *consciously* initiates the communication process by firstly encoding the message. Based on this condition, talking while sleeping, or to a sleeping person, is not communication because it is neither intentional nor conscious. This process may involve an effective transmission of concepts into language, or any other form of signs, which the sender supposes the receiver or the recipient would understand, react upon, interact with, or respond to. The receiver (one or more) decodes the message by using the same message code. To this end, the receiver is supposedly responsible for processing the message, and is expected to analyse, understand, and react to it (by giving feedback or a response of some kind). Depending on the coded message, the receiver uses the five senses to process the message where his/her feelings, attitudes, opinions, beliefs, knowledge (and many more) are simultaneously involved in the processing of, and reacting towards, the message. In other words, the receiver uses one or more channels for decoding. The channel can be vocal, visual, olfactory, or tactile[10].

3.2. Code and Message

Morreale et al. ([11], p. 5) define messages as those "words, sounds, actions, and gestures that people express to one another when they interact" either verbally or non-

verbally. Verbal messages can be facts, ideas, attitudes, or speech events. But messages can be expressed by other means, or codes, apart from the spoken language. Messages can be coded by using different signs other than the verbal code (see Section 6.2 on sign species below). On the other hand, code is generally defined "as a system of signs, which allows for the assignment of meaning to them" ([12], p. 19). Coding entails two different processes: decoding and encoding. Encoding is the process which the sender uses to transmit the message to the receiver. Conversely, decoding is an important stage in this process because it determines whether the intended message (completely or partially) is appropriately understood and interpreted.

For the sender and the receiver to use the code effectively, they should be communication competent. Communication competence must observe the cultural and social customs, particularly to nonverbal norms (including paralinguistic features of the spoken discourse). The nonverbal encoding skill involves the capability to produce the appropriate messages based on those norms. By the same token, it requires a similar skill from the part of the receiver in order to be effective. Riggio ([13], p. 81) points out that: "Skill in nonverbal decoding involves sensitivity to the nonverbal messages of others as well as the ability to interpret those messages accurately". Whatever the nature of the message, its transmission is not made in a vacuum. It requires a medium of delivery, and it occurs in a context.

3.3. Medium and Context

The channel, or medium, is used by the sender to deliver the message[14]. Humans use various channels for transmitting messages to the intended audience, which can be verbal, non-verbal, auditory or visual. The context is a crucial element in communication because it directly influences our interpretations and inferences. Sometimes this context is referred to as the environment or the situation of communication. Context is normally what participants expect from one another where expectations are created out of situational clues and cues, whether they are physical or linguistic. For instance, Ginzburg ([15], p. 130) asserts that the importance of studying the context is fundamental to understanding meaning, or specifically dialogue, because "the context has a role to play in determining what one can or should say at a given point and also how to say it".

In semantics, and pragmatics as well, relative meaning of polysemous words is created by the context in which they are used. Thereby, successful and effective interpretation "seems to be achieved via pragmatic inferences" ([16], p. 81) which associate the word meaning with the linguistic and social conventions to their context of utterance. In short, context of a conversation is broadly understood to include "previous utterances (discourse context), participants in the speech event, their interrelations, knowledge, and goals, and the social and physical setting of the speech event" ([17], p. 136).

The relationship between language structure (form) and its communicative implicature (function) has become a common sense in applied linguistics among language teachers (see,[18]). To illustrate how the context can affect the message, let us take the interrogative form in spoken exchanges and consider how the intended meaning (language functions) may be interpreted by the receiver. The following utterances (formed in the interrogative) are listed below:

- Why don't you see a doctor? (advice).
- Can you pass the salt? (request).
- Would you like some tea? (offer).
- Can I come in? (asking for permission).
- Will you close the door? (order).
- Why are you sitting and doing nothing? (can be a reprimand).

3.4. Feedback and Interference

Feedback is the response to the sender's message or the reaction to the source's stimulus. Its importance lies in the fact that: (i) it can assist in refining the communication process to make it more effective where the sender evaluates the extent of success of the delivered message; (ii) it may ensure that the intended meaning is aligning with the receiver's understanding and interpretation; and (iii) in face-to-face encounters, it allows the necessary completion of communication where the sender collects 'new' information from the part of the receiver (positive or negative). Accordingly, the receiver adjusts, and monitors the decodability of, the reformulated message ([19], pp. 50–52). Interference—technically referred to as *noise*—relates to those disturbances and interruptions that occur during communication, which may partially obstruct the transmission and reception of the message or its feedback, and subsequently affecting the ef-

fectiveness of communication[20]. Noise can be semantic (language-related problems resulting in misunderstanding of words due to accents or language use), psychological (such as depression and frustration occupying one's attention), or physical (poor quality of the channel, whether that channel is written, spoken, or audiovisual)[21].

4. Verbal Communication (VC)

Verbal communication depends mainly on words, the knowledge of which is crucial in understanding sentences or utterances. Word knowledge requires five types of information: phonological (or orthographic), lexical, semantic, syntactic, and pragmatic[5]. Each of these types has a branch in linguistics of its own. Yet, native speakers acquire most of their word knowledge early during childhood. This knowledge keeps sharpening and developing via education and through aging. They need no study this type of information unless they want to attain a higher linguistic mastery and status such as writers or reporters.

So, verbal communication is generally vocal in nature (the spoken element), but it can be nonvocal as in writing. The success or effectiveness of verbal communication can be affected by several factors, particularly the situation, the purpose, the participants, and the language code used (spoken or written). Most communication references (books in particular) focus on the spoken element, and to some extent the nonverbal communication. The written element is not thoroughly treated, if not at all, except for discussions related to written messages and how they should be prepared for workshops and presentations.

To emphasise the role of writing in communication, this article presents a comparison table between the spoken and written elements (**Table 1**), much of which is based on O'Donnell and Todd[22]. It shows the importance of integrating written messages into communication studies. These messages can be notices, warnings, posters, emails, letters, applications, complaints, reports, and the like. A broader view on these two components is presented in Halliday[23].

Comprehension is added to the original criteria to demonstrate its status in effective communication. It can be affected by the receiver (reader or listener) in two different ways. For writing, a reader's knowledge (of the topic, domain, world, culture) influences comprehension and understanding[24]. Other factors may include the text readability, the reader's vocabulary repertoire, the text type, the reader's strategy to use titles and visual to aid comprehension, and above all the purpose of reading. Poor listening, on the other hand, can result in an impairment and weakening to communication[20]. Reasons for poor listening may be attributed to several factors including: the setting and context of a noisy environment, message overload due to lengthy hours of listening every day, hearing problems, lack of interest, cultural differences, and the need to speak more than to listen ([14], pp. 140–142).

Assuming that the situation is ideal, Wyer and Adaval[25] propose a two-stage model of the spoken message comprehension. They discuss it in length. To sum it up, the core theme of the model states that "a recipient first construes the literal meaning and implications of a message and evaluates its consistency with expectations for the content and type of messages that are likely to be transmitted in the situation at hand" ([25], p. 292). First, if the message falls within the receiver's expectations, then it is taken literally, otherwise the receiver tries to construe the intended message's meaning, which may result in (partial or complete) misunderstanding.

5. Nonverbal Communication (NVC)

5.1. NVC Introduction

Humans start their communication in their infanthood nonverbally. Though NVC is an unavoidable part of human (verbal) communication, people resolve to NVC when they need to it. They also use NVC when they lack or lose their ability to communicate verbally.However, meanings of NVC cues are mostly acquired through verbal communication. In such situations it becomes apparent that both the sender and receiver are aware of it as a means of communication. This section deals with visual, auditory, and tactile NVC. Morreale et al. ([11], p. 110) define nonverbal communication as "all behaviors, attributes, and objects of humans —other than words— that communicate messages and have shared social meaning". They expand this definition to include "any aspect of physical appearance, body movements, gestures, facial expressions, eye movements, touching behaviors, the voice, and the way people use objects, time, and space to communicate" (p. 110). In-depth discussions of these categories, in full chapters, are thoroughly investigated in Danesi[12]. The following paragraphs deal in a concise manner with NVC.

Table 1. A comparison between the spoken language and the written language[1].

Spoken Language Element	Written Language Element
1. Acquisition	
- acquiring/picking up	- teaching/learning
- imitation/analyzing	- sound-symbol correspondence
- requires input (slow/long period)	- requires training (fast/short period)
- 2–3 years before acceptable production	- 6–12 months before being skillful
- acquired in early childhood	- can be acquired at any age after six
- it comes before writing	- only taught long enough after speaking
2. Production	
- mouth/lungs	- hand/pen
- organized in time	- organized in space
- spontaneous/unplanned/easy	- drafted/planned/difficult
- involves interaction between speaker and listener	- one-way direction between writer and reader
- marked by hesitation and broken language	- characterised by flow and good language
- pragmatics of speaking	- stylistics of writing
- speaker's tone reveals intention	- author's tone is subtle
3. Substance	
- sounds	- symbols
- abstract	- concrete
- temporary	- permanent
- limited by time; cannot be carried	- limited by space; can be carried
- transmitted on air waves	- transmitted on paper
4. Perception	
- decoded by ears	- decoded by eyes
- involves listening; listeners as audience	- involves reading; readers as audience
- setting: here and now; audience is normally known	- setting not specified; audience is usually hypothetical
5. Comprehension	
- setting and context	- reader's schemata
- pragmatics of speaking and speaker's body language	- stylistics of writing and text type
- lexis and grammar	- lexis & grammar
6. Use	
- everyday communication	- documentation in general
- transmitting culture	- transmitting knowledge
- its influence is limited by audience	- can have unlimited influence

5.2. NVC and the Five Senses

We learn via our senses because they are used as channels for communication. They are transmitters of information. We are interested in highlighting their role in communication and information transfer. The processes of recognition, reception, attention, comprehension, reasoning and memorisation in learning (and in language as well) is the field of cognitive psychology (see [26]). So, we discuss what is relevant to communication as outlined in the current subsection. Firstly, vocal and audio-visual codes are pervasive in communication and information transmission. They are mostly connected to the spoken and written element as discussed earlier. Most communication studies focus on this area, and this overview is no exception. There are, however, some references which treat communication from the perspective of the five senses. (see [27]).

Secondly, touching (tactile sense) is used as a means of communication or an information receptor (haptic perception). As an informant, the sense of touch may be used to examine the smoothness of a surface by fingers, the heat of a

[1]The original work is not displayed in a table, and it discusses four major criteria which we expanded to six by adding the criterion *comprehension*, and splitting the criterion 'operation' into *production* and *reception*.

dish of food or a drink by lips, and so on. Tactual behaviour can be used to communicate a psychological 'message' as on rubbing or tapping on one's head, back or shoulders. It communicates a message of reassurance, empathy, and most probably affection. The use of hand and its role in communication and perception is deliberated in Katz [28]. For educational purposes, we find that visually-challenged (blind) adults are trained to use their fingers in Braille system for reading and writing. Incidentally, even in the absence of the visual context, the blind can still express their facial expressions as sighted people do [29]. Since the blind depend heavily on the auditory and the tactile channels, most of the nonverbal cues and clues are inaccessible to them [30].

In other communication settings, for example, a person may tap or poke gently with his/her fingers on someone's body part (normally, thigh, shoulder, back or head) to get attention, followed by the sender's message (verbal or nonverbal). This is common in crowded places such cinemas, restaurants, theatres, and public places at large. In such settings it is used as a communication initiator, but its obvious use is when wakening a sleeping person. In a recent experiment by Maallo et al. [31] the sender and the receiver could convey six different messages by touch. Attention, as one of those messages, scored the highest rate of almost 94% success between the sender and the receiver. Finnegan [32] discusses tactile communication in its broader sense where she includes various bodily acts (e.g. kissing) as acts of communication. It is true that touch can carry a message of intimacy or violence, but I believe this is nonverbal behaviour rather than NV communication. Since the sense of touch is composed of the whole skin, we find many diverse topics related to touch are investigated and treated as a means of communication (see [33]).

Thirdly, the senses of taste and smell (gustation and olfaction respectively) play a lesser role in communication. However, they play a major role in our judgment on things like food, drinks, air, and the smell of our surrounding atmosphere (including people). They are informative more than communicative. They tell us more about the qualities or properties of their source (or stimulus). For example, one cannot judge the sweetness or bitterness of a drink till they start drinking. We judge if the food is spicey or salty when we start chewing. The qualities of a perfume are judged by its smell. Linguistically speaking, the word 'taste' is used metaphorically in English (and most probably figuratively in all languages). Many English expressions, which include the word 'taste', can denote an idiomatic meaning related to dress, design, and decoration (see [34]). But these are judged by eyesight, rather than by the tongue as the organ of taste. In brief, as humans we acquire the properties of things through experience with the aid of our five sense organs. Humans generally receive and learn the properties of things during their development and growth. These properties are stored in the long memory, and could last for the rest of one's life.

5.3. NV Cues vs. NV Behaviour

In semiotics, they make a distinction between nonverbal behaviours and nonverbal cues. NV behaviours have no meaning (simply body movements), but once a meaning is attached to them, they become nonverbal cues. Eco ([35], p. 19) states that "behaviors become signs because of a decision on the part of the addressee (trained by cultural convention) or of a decision on the part of the sender to stimulate in the addressee the decision to take these behaviors as signs".

NVC cues can have a variety of forms: face expression, hand movement, head nodding, smiling, eye winking, tongue clicking, finger tapping, lips whistling, or pitch of voice (as a paralinguistic feature). Moreover, these cues can have a variety of functions, such as word-substitution (putting the pointing finger on lips for silence), word-complementarity (raising the eyebrows when expressing a surprise), expressing emotions, and in regulating conversations (using different hand movements to stop people, give others their turns, moderate time, etc.) ([6], pp. 70–72). For example, emblems, which are learnt via verbal language, can be used to substitute words. Emblems in this context, as opposed to *emblems* in semiotics, mean gestures that have acquired socially agreed upon meaning, such as putting the pointing finger on the lips to request silence. *Emblems* in semiotics are pictorial images which serve as symbols of countries, states or groups. Their function and design are similar to commercial logos.

Moreover, the same nonverbal cue can have multiple functions or communicative values depending on their context of occurrence. For instance, raising a hand may mean: (i) 'stop' (walking, talking, doing), (ii) 'enough' (no more food or drink), (iii) for asking permission to say something (e.g., in class or a meeting), and (iv) when taking an oath (in a formal setting). This clearly indicates the importance

of the context in interpreting the sign. The context has a tremendous impact on the message's formulation and the receiver's interpretation.

Nonverbal skills are integrated and engrained within the communication process. Social communicative competence requires the appropriate use of both skills: verbal and nonverbal. A good communicator is assumed to be socially (and culturally) communication competent for NV cues are quite sensitive from one culture to another. Much of the nonverbal cues are culturally learnt in a community. Although the use of NVC starts from early childhood, some cues are acquired in a later stage. Beside cultural differences, Burgoon and Bacue [36] discuss a number of these "moderators", mainly: gender, individual differences (in terms of age, intelligence, and personality), channel, and cue type. In salutation, for instance, people raise their right hand, or put both hands together in front of their faces, or slightly lower their heads and bow forward, or even women quickly lower their legs (one move down and up, as envisaged in old traditional European societies).

To sum up, VC uses words only whereas NVC uses different dimensions and behaviour cues which can cause ambiguity because of the unintentional nature of nonverbal cues during speaking. VC is less ambiguous due to what is called 'meaning negotiation'. NVC is socially and culturally internalized through time, which justifies its slower acquisition (though it emerges earlier). NVC cues can be used with VC and other NVC cues simultaneously. For example, one may speak and smile at the same time; or one may clap, wink, dance, and raise their voice and lower it continuously and concurrently. NVC can sometimes —depending on the setting and purpose— be more powerful than the spoken word. A perfect example of this is the nonverbal cues of referees in different kinds of sport. Finally, although NVC cues can be grouped into general categories (based on the five senses), its individual cues cannot be exhaustively listed due to the lack of the precise description of these individual cues. One example may be the description of hand movements and their relative positions to other parts of the body. Dozens of studies related to gestures in different cultures, along with other NC cues, are edited and compiled in Muller et al. [37, 38].

6. Sign Species

6.1. Some Semiotic Preliminaries

First, these short paragraphs are about general terminologies recurring in semiotics. The interested reader is advised to consult Nöth [39] who —from a Western perspective— provides a condensed review of the history of semiotics from ancient Athens to the late twentieth century. Chandler [40] explains that semiotics deals with signs and signals used in everyday speech as well as things that indicate or 'stand for' something else. Thus, anything can be a sign —words, images, sounds, gestures, and objects— if the receiver interprets it to signify something else. The verb phrase '*stands for'* may not necessarily be understood to replace verbs as 'substitute' or 'mean'; rather, it may bring to the mind synonymous verbs like 'indicate' or 'represent'. Eco ([35], p. 7) states that semiotics "is concerned with everything that can be taken as a sign. A sign is everything which can be taken as significantly substituting for something else." Two famous models of sign are presented below, mainly of Ferdinand de Saussure and Charles Peirce.

Saussure's dyadic model [41] presents a sign as composed of two parts: the signifier and the signified. The signifier refers to the form of sign which represents the designatum (it expresses the relation of meaning and sense; sometimes referred to as designation). The signified is the concept it represents. It denotes a relation of reference whose content is its denotatum, technically known as denotation. In this context, however, the reference is not the referent. Reference may denote thought, sense, content, or concept. A referent can be "a concrete and empirical entity, object, exemplar, event, behavior, fact, actor, or phenomenon in the real world" ([42], p. 79).

Houser [43] summarises Peirce's view of sign as a triadic model, stating that: "A sign is anything which stands *for* something *to* something. What the sign stands *for* is its object, what it stands *to* is the interpretant" (p. xxxvi, emphasis in the original). The three parts are: (i) the representamen which is the form of the sign (or sign vehicle), (ii) the interpretant which is the sense created via its interpretation (the concept), and (iii) the object which is the referent of the sign in question (concrete or abstract). In short, the semiotician is interested in identifying the sign, then analyzing it, and finally interpreting it. Interpretation of meaning, or understanding the intended meaning, is the product of the interactional and associational processes between the sign

(term), its denotatum (sense) and its designatum (reference).

One of the general features of signs in semiotic studies is the distinction between tokens and types. A sign is both a type and a token. The sum of all occurrences of a particular sign is the sum of tokens of that sign whereas the sign that represents the class of those tokens is known as 'type' [44]. For instance, the word 'cat' in a short story may be mentioned twenty times, which means twenty tokens, whereas the word '*cat'* itself, in all these occurrences, is regarded as a particular sign representing a particular concept (the generic type). It is crucial to remember that what applies to words (in terms of type-token distinction) is applied to other sign species (reviewed below), apart from their sizes, shapes, settings, colours, materials, etc.

Finally, the reader may encounter terms like 'intension' (not intention) and 'extension' in the following sub-sections. Synonyms of these two terms are given in place of their definitions for direct explanation. Pelz ([45], p. 354) states that the term "intension is related to the words meaning, sense, content, purport, comprehension, connotation, interpretant, interpretation, significance, and signification; while the word extension is related to scope, range, signification, denotation, reference, and also to comprehension".

6.2. Classification of Sign Species

Signs are classified in various ways, and each major category or division is based on a general, unified, criterion to produce a distinct sign system. One of these systems is based on the degree of abstraction, which divides signs into five major sign systems ([46], p. 387): (i) natural sign-systems, (ii) iconic sign-systems, (ii) language systems, (iv) notations, and (v) mathematical sign-systems. The order of these systems is based on their existence in human development. Solomonick ([46], p. 387) explains that "each type of *sign-system* in the list came into existence after the previous type was internalized by its users; each new stage subsumed the previous one, but also developed it further" (italics in the original).

The following classification of signs, and their definitions, are discussed sporadically in many references of semiotics. Since this review is not exclusively on signs, rather to their relation to communication, and in order to preserve systematicity, definitions proposed by Sebeok [47] were adopted. They proved to be precise and direct. This classification is based on shared features among these sign categories. Individual signs were the subject of many studies in semiotics, but scholars were not attracted to their classification by the same enthusiasm. Peirce [48] classified signs into three types: icons, indexes, and symbols. Sebeok [47] expanded this classification, and added signals, symptoms and names. This paper proposes a seventh type, namely numbers (though it might well be seen as a subordinate to namors in terms of their function in communication).

6.2.1. Symbols

Sebeok ([47], p. 11) defines a symbol as "a sign that stands for its referent in an arbitrary, conventional way". Later, he argues that any "sign without either similarity or contiguity, but only with a conventional link between its signifier and its denotata, and with an intentional class for its designatum, is called a symbol" (p. 55). Sebeok classifies several signs as subordinate symbols, including: allegories, badges, brands, emblems, insignias, marks, and stigmas. We can add to the list symbols like banners, flags and logos. Besides, other signifiers, such as figures (not numbers), objects, and sounds, can also be symbolic, depending on their contextual occurrence and social interpretation by the receiver. Symbols in this sense indirectly define words as arbitrary symbols which signify objects or thoughts. In the lexicon, arbitrariness of words is controlled via morphological derivation (and possibly grammatical inflection). The first stage of coinage is arbitrary, and the second stage of usage is rule-governed. This is generally true for all languages, with varying degrees.

It is argued that not all symbols are arbitrary, i.e., unmotivated. Some words and signs indexically (e.g., *woodpecker*) and iconically (e.g., *cuckoo*, and the recycling sign) are motivated by congruity [49]. But onomatopoeic words and representational symbols remain limited. Moreover, most of the nonverbal signs could be nonarbitrary due to their nature of depiction, but many remain arbitrary because we find differences in their realisation (depiction) and their uses interculturally. This is not our debate. Our objective is to define symbols and present their role in language and communication. The debate can be slippery.

6.2.2. Icons

The icon in this context is defined as any sign "that is made to resemble, simulate, or reproduce its referent in some

way ([47], p. 10) where that sign has "a topological similarity between a signifier and its denotata" (Sebeok, p. 50). There is a similarity in shape combined with symmetrical depiction in size between the icon and its original (prototype) referent.

Iconic signs such as pictures are generated for various purposes: for personal record, for media, for advertisement, for sale, and the like. Moreover, artefacts and paintings are used for decorative and esthetical motives. Their communicative influence is not as essential as symbols, simply because they are devoid of their semiotic value. However, Wogalter et al.[50] argue convincingly that visual warnings (including pictures) can be more effective than densely written instructions in the worksite. A similar view with more deliberations on iconicity in language is presented in Radden[51]. For purposes of explication, icons referred to in this article are those visual entities which human beings experience and encounter in everyday activities. Common examples may include children's toys and dolls, images and photos, drawings and pictures, models and imitations, and effigies and mannequins as well as statues. Footprints, shadows (shades), and reflected shapes on water or the mirror are categorised as indexes, not icons.

I need to shed light on two frequently used meanings of the term 'icon' from a semantic perspective. These are quite distinct from the definition stated above. The regular meaning of an 'icon' in daily usage is regarded as a representative symbol of a specific state of affairs (such as a social or religious character). On the other hand, computer icons do not belong to this division either because they lack a direct resemblance with their referents. These so-called computer 'icons' are merely pictures or subjective logos, and they do not symbolize a concept as a word does. Rogers[52] concluded that the usefulness of computer icons lies in their depiction of many of the functionalities on the system interface. Another study found that the visual representations may not necessarily facilitate the quick spotting of computer applications and software functions, unless the user is trained to[53]. Computer icons seek —presumably through systematic recurrences— to be intersubstitutable with words to achieve the intended meaning, as the public signs for the disabled, gents, or ladies do. In my opinion, these two different and unrelated meanings of the word 'icon' are two homonyms that were generated by semantic extension from the original meaning of the word 'icon' defined above as a sign species.

6.2.3. Indexes

Sebeok ([47], p. 10) defines an index as "a sign that refers to something or someone in terms of its existence or location in time or space, or in relation to something or someone else". He goes on to explain that: "A sign is said to be indexic insofar as its signifier is contiguous with its signified, or is a sample of it" ([47], p. 53). Contiguity, for Sebeok in this definition, should be paired with similarity, and not necessarily with adjacency. In short, an index is a part of its source. Thus, similarity is not necessarily a criterion.

Though examples are limited in categories, they can be quite numerous: footprints to feet, finger prints to fingers, cough to cold, voice to a person, urine to an animal, a shadow to a human being, a feather to birds, a twig to a tree, smoke to fire, and saliva to a living entity. Odours and smells can be grouped as subordinates to this sign species as well. Indexes can also connote additional inferences. For example, the footprint on a beach may reveal the identity of the source, whether it is for a human being, an animal, a motorbike, or a bicycle. With the aid of previously stored schemata and background knowledge, we can infer from the type of the footprint if it is for an adult or a child, a man or a woman, fat or slim, and so on. The harsh sound and repetitive occurrences of sneezing and coughing may connote the severity of the influenza. The whitish colour and smell of smoke may imply the presence of a smoker. These are a few examples. In short, it is apparent that the index can be identified by any of the five senses.

Indexes must be differentiated from hyponyms. Hyponymy presents "a generic-specific relationship" ([54], p. 111). It is a relation of inclusion *among words*, whereas the index presents a relation of 'belonging' between a *sign and its source*. Incidentally, in linguistics, deixis is included in this index category (pronouns, adverbials of time and place in particular). The importance of deixis lies in the fact that "interlocutors make their contributions relevant to the situation of discourse […] by anchoring what they talk about to the spatio-temporal context of utterance" ([55], p. 44).

6.2.4. Signals

A signal is defined as "a sign which mechanically (naturally) or conventionally (artificially) triggers some reaction on the part of a receiver" Sebeok ([47], p. 44). Humans

use signals naturally in their social communication almost in every conversation (slight differences may occur cross-culturally). Conventional signals are extensive and are used by humans as well as machines. From the definition above, the reader can judge how signals are extensively used in our life. Examples include, but are not limited to, traffic lights, bells, mobile/phone ringing, alarms, sirens, whistles, knocking, alarms, and many nonverbal cues.

Sebeok ([47], p. 46) stresses that the simple form of signalling "is produced by an individual organism; it represents information; it is mediated by a physical carrier, and it is perceived and responded to by one or more individuals". Language mode, such as degree of formality, appropriateness of the prosodic and paralinguistic features, can belong to the signalling activity. This is much more valid with the acquisition of culture than it is with language. For example, in the Arabian Peninsula silence of a girl during a marriage proposal is interpreted as a signal of acceptance. Moreover, silence can be contextually interpreted as a signal for fear and alertness, for discontent, or for approval. Baltezarević et al. ([56], p. 60) studied the relationship between silence and interpersonal communication, and they concluded that: "Silence can have diverse meaning in the communication process. It can be understood as a time to think, consider a response or to express emotions".

Body language, as studied in psychology and communication, is made of a combination of signals and nonverbal behaviour. The way people project themselves in postures, the way they dress, the hair style, the way they talk, and their use of other body movements, are interpreted by the receiver as 'clues' for communication. These body movements and signals are the study of nonverbal communication reviewed above.

6.2.5. Symptoms

A symptom is "a compulsive, automatic, non-arbitrary sign, such that the signifier coupled with the signified in the manner of a natural link" ([47], p.46). Symptoms are natural signs. For Peirce[48], however, a symptom is seen as a subtype of the index sign species. Symptoms and signs are used frequently in medical jargon. Medical practitioners make a slight difference which makes them, in certain contexts, interchangeable. The difference is stated as what the patient feels or experiences is termed as a symptom whereas a sign is something observed and identified by the doctor or the nurse. Though symptoms may show a weaker connection to communication, they are included because they form a major category within the classification of signs in semiotics. Such a classification will remain incomplete, and be open to criticism.

I need to reiterate three features about symptoms, which can help the reader identify them. They are characterised by three different combined directions: present, past and future. To explain this three-fold characteristic, a brief exemplification is required. If someone contacts a person with influenza, and that person starts to sneeze (*a present spatio-temporal state)*, then it is assumed that he/she had been infected by the influenza virus (*past, contagious contact as a causative connection*). This present state, if it develops or worsens, will lead this person to have a flu (*the future resultant state* and whatever anticipation is connected to it—such as rest, medication, fever, running nose, frequent sneezing, etc.). Natural phenomena, such as weather, are good examples.

6.2.6. Names

Names are basically words assigned to persons and places by which they are identified. Sebeok ([47], p. 59) explains that any sign which "has an extensional class for its designatum is called a name". One feature of names is that they do not carry the properties of their referents. They simply identify, indicate, and name them. However, Sophia and Marmaridou[57] argue that proper names can connotatively stand for the characteristics of an individual in the present or past. According to Jeshion[58] proper names evoke a thought of referentiality as an image of that name-bearer. Though it remains uncommon, it is still a part of the communication activity when a speaker likens a person (he hates or loves) with someone who is conventionally famous for being good or infamous for being bad. Another feature of personal names is that they can reveal identity (e.g., gender, ethnicity, religion or region) as the speaker's voice reveals identity, or when the speaker's dialect tells us about the speaker's region (and in some societies his/her social status). Therefore, it can carry a semantic value beside its function as an identifier.

It should be noted that names are not confined to humans. Titles of books are names; days of the week and months of the year are names, too. Places are given names all over the world, including countries, cities, villages, mountains, rivers, seas, geographical zones (small or large), and even buildings or housing blocks They are basically identi-

fiers but what they refer to remains intact with no change in their denotation or meaning. For instance, a specific address is identified by names of people, names of places, and codes represented in numbers and letters. For an authoritative treatment of names and naming, see selected chapters in Hough[59].

6.2.7. Numbers

We have seen in the previous sub-section how numbers are used as identifiers. The use of numbers in our life makes them ubiquitous and pervasive. Though this section cannot cover all uses of numbers, it is given to support our argument of how communication is achieved by different mechanisms using signs (in verbal and nonverbal modes). It provides an explanation of how numbers (as signs) are used to function, or behave, like 'namors' for purposes of identification and indication. They play a role as non-interactive communicators. A good portion of adult humans round the world start their days with numbers, checking either the time or the date. As a mathematician, Flegg[60] elaborates on numbers in our daily life as well as their role and evolution in mathematics. As a linguist, Everett[61] argues that numerical representations have been integrated in our daily activities from ancient times. He argues that numbers are the invention of man. The use of counting systems has been influential in human development. From historical and anthropological perspectives, Everett[61] elaborates on the evolution and use of numbers to emphasise their role on knowledge and cognition. Thus, different cultures coined words to represent each integer in their counting systems, and number fractions emerged in a later stage.

I present a few examples on the use of numerals in daily life. These are not completely novel, but may be taken as a sample for the reader to reflect upon. The use of numbers was described as ubiquitous and pervasive. This is true because of their informative function in various aspects of our lives. We have VINs for cars, IBANs for banks, numbers for credit and debit cards, ISBNs for books, ISSNs for journals, QRs (or barcodes) for products, serial numbers for cellphones, and so on. Every digit of these numbers has its own system of generating and interpretation.

In many other functions and uses, numbers can be subordinate to names to function like namors. To name a few incidents where numbers can replace names; you have a job number (civilian, military, organisation), an insurance number, a bank number (apart from your bank account), a passport number, and a national number. Numbers (along with other designs and colours) are used to differentiate the values of banknotes. They are used for daily uses, such as numbers of transportation ticketing (particularly airplanes). They are used in car parks, libraries, hotels, and the like. When numbers are used in books, they have a deictic function, whether related to time documented therein or page numbering. Numbers are used in passwords in banking and the Internet. The final example concerns scientific research. Quantitative studies depend heavily on numbers and statistical analyses. Without the availability of the appropriate data, the validity of such studies cannot be taken seriously to come to conclusions that serve the development of human knowledge.

Finally, let us compare numbers to phonemes. One central design feature of language is the 'duality of patterning', or double articulation. This feature enables speakers to form an infinite number of words via combinations of phonemes in speech or graphemes in writing[62]. These phonemes and graphemes have no meaning when used in isolation. But isolated numbers have a meaning of their own or according to their place in relation to other numbers (ones, tens, hundreds, and so on). This is applicable in writing because they are controlled by space (numbers are writing-oriented signs). Besides, they do not need duality since a number can be used repeatedly with itself or with other numbers. A numeral can be made of a combination of digits either with itself, or with other numerals, or even with graphemes according to need and purpose. In short, numbers have a communicative and informative value because they are used in verbal communication and as written signs of their own.

6.2.8. A Summary

Table 2 presents a summary of the many features of signs as discussed in this overview. Its focus is to display the sign classification to facilitate a quick comparison. The criteria used for this comparison are merely indicative. It can be expanded and refined, but this is out of the scope of this review. Creation and recognition of a sign are like encoding and decoding in the components of communication discussed above. The role of each sign, without further details, is written down under the function column, followed by a few examples as subordinates of the main sign species.

Table 2. A summary of sign species.

Sign Type	Creation	Recognition	Function	Examples
Symbols	Arbitrary, artificial	Visual, auditory	Communicative, informative, knowledge transmitter	Words (spoken and written), brands, logos, flags
Icons	Artificial, resembling	Visual	Informative, educational	Pictures, dolls, statues, effigies
Indexes	Natural	Visual, auditory, tactual, olfactive, gustative	Informative, inferential	Footprints, sounds, shades (any part of a recognisable source)
Signals	Arbitrary, and natural	Visual, auditory	Communicative, informative	Road signs, animal sounds
Symptoms	Natural	Visual, auditory, tactual	Informative, inferential	Coughing, vomiting, rashes, diarrhea
Names	Arbitrary, conventional	Visual, auditory	Informative, referential, identifying	Proper names, book titles, names of places
Numbers	Conventional	Visual, auditory	Informative, indicative, logical	Cardinal and ordinal numbers, fractions

7. Emojis and Colours

7.1. Emojis

This section on emojis and colours is an additional component to include other elements which are used by humans either for communication or for indication and identification. Emojis are words in pictures. Though they are iconic in nature, they should be grouped under symbols because they normally carry an implied 'phrase' or 'utterance'. Common emojis include those round, yellow faces which represent nonverbal emotions (happy, sad, angry, and the like). Danesi ([63], p. 18) explains that the "general emoji use is now part of utterance meaning, indicating how it may have taken over the specific functions of verbal formulas, such as those used in salutation and the expression of some emotions". Moreover, we have other emojis for people, animals, nature, weather, foods, drinks, (sport) activities, music, travel, various objects, a variety of common symbols, and flags of countries.

We find emoji-like drawings (along with written descriptions in websites, particularly those of travel and accommodation (e.g. the drawing of a knife and fork for the availability of cafes and restaurants), as well as computer software (e.g. the floppy-disk for saving). The purpose is presumably to institutionalise these 'symbols' via wording associations so that they can —hopefully one day in the future— replace words as it is the current case for traffic signs. The main intention is to use them to facilitate reading (visually) through the multiple slots found on a webpage or a software application. That means the user starts skimming for the icon rather than for its word.

Boutet et al. [64] conducted a study on the use of positive and negative face emojis during the exchange of perceived emotions. They found that emojis enhanced communication. Use of emojis facilitated comprehension when accompanied with verbal messages. A study by Pfeifer et al. [65] and another by Erle et al. [66] yielded similar results. Both studies found that emojis could convey emotions between the sender and the receiver. Riordan [67] studied non-face emojis and their effect on comprehension. Her results suggested that the use of non-face emojis could help in disambiguating meaning of various messages. In brief, emojis are used mostly in interpersonal communication in social digital media, and can aid understanding and clarifying messages. Their frequent use as nonverbal cues is mostly, but not exclusively, confided to convey emotions between the sender and the receiver.

7.2. Colours

What about colours? Colours were the focus of many linguistic and anthropological studies since the publication of Berlin and Kay [68]. It stimulated studies related to linguistic relativity and concept categorisation. Our commentary is not related to such studies. It exemplifies how colours are used for 'communication' purposes in modern societies across the globe. Though our examples are based on common sense and daily observation, they go in line with what Theo Van Leeuwen proposed on the use of colour in societies and how

corporations use it for commercial purposes [69]. The interested reader may refer to his work for an in-depth treatment of this area.

A specific colour, in my opinion, is 'concrete'. It is easier to define an abstract term than to define a concrete thing. To define a specific colour you need to display it to indicate the meaning of the word assigned to that colour. Colour, as a general abstract term, is defined as "the sensation resulting from the light of different wavelengths reaching our eyes" ([70], p. 4). This means that we can have differences in 'seeing' colours. Whatever the case, colours remain natural 'informants'. You can tell if a banana is ripe or rotten (or otherwise) from its colour.

Colours, like words, are used arbitrarily to convey information and attract attention. To explicate this statement further, the reader is reminded about the use of colours in traffic lights and road lines (though there might be a reason for their selection and association), or on highlighted words in written forms and coloured advertisements. The use of all these instances is arbitrary. In addition, companies normally use different colours for a specific product, to indicate its different flavours. Here is a hypothetical example. The colour of the (plastic) bottle cap of skimmed milk may be red and the cap of a full cream milk bottle may be green, but both will use the white colour on that container as an index of its source (milk is white). These are used for quick identification, rather than for product categorisation and grouping. Finally, different cultures (and religions) prefer certain colours over others (for a few examples, see [71], pp. 26–31). This is an arbitrary conventional choice, but above all it remains informative.

8. On Communication and Signs

8.1. Receptive and Productive Communication

To avoid misunderstanding between active and passive communication, I propose in this article that communication can be categorised as either interactive or receptive. Interactive communication uses intentional verbal language exchanges (spoken or written) so that it is communicative in nature. Receptive communication uses a variety of intentional instructive and directive signs and therefore it is informative in nature. Though the latter is prevailing, humans do not experience its process. Its ubiquity from one side, and the absence of interaction from the other side, cause it to be subconscious (e.g., the immense use of numbers, road signs, and colours in everyday life). Conventional and natural signs are informative when used *intentionally*; they communicate a message. Intentionality is a crucial criterion in both categories of communication. An example of receptive communication may be clarified in the following statement: the '*No Smoking*' sign is placed by the area's authority (the sender is absent) to tell people (the receivers) to not smoke in that designated area. On the other hand, signs become *exclusively* informative when they exist *naturally* and *unintentionally*, such as shades, footprints, colours of fruits, and other similar indexical and symptoms signs.

In conclusion, by relating semiotics to communication, we realise that we live in a world of signs. Thus, studying semiotics will assist us to be more conscious of the role of signs in our everyday activities. Pragmatics—to the best of my knowledge—hardly takes the nonverbal cues into analysis. Akmajian et al. ([5], p 363) view pragmatics "to cover the study of language use, and in particular the study of linguistic communication, in relation to language structure and context of utterance". So, students of pragmatics may seriously weigh the inclusion of NVC and signs into verbal analysis.

8.2. Sign Prototypes

Signs (words included) generally have their prototypes. These are explained as follows: A prototype is a typical member or an exemplar of its extension via association of similarity. Extension in this sense is equivalent to denotation. For instance, the extension of the word '*table'* is the complete set of all 'tables' which could potentially be the referent of a phrase whose main constituent is the word 'table' [72]. A prototype is a conceptual structure that is acquired by learning, and shaped by experience. At the word level, it establishes a connection between language and the world we know. Different shapes, sizes, materials, colours, and models (whether physical, graphic, sketches, etc.) of tables will linguistically be called 'tables', and conceptually will retrieve the schematic frame (mental prototype 'picture') of the concept '*table'*. The similarity between the item and its category "may be the basis for the abstraction of a schema, with which both the prototype and the extension are fully compatible. Both prototype and schema may therefore co-

exist within the mental representation of a category" ([73], p. 71).

This leads us to say that our use of signs in daily activities whatsoever, does not only serve communication, but learning as well. Hedblom ([74], p. 17) describes image schemas as "conceptual building blocks learned from the body's sensorimotor experiences". In this sense, schemas help us shape our experiences (with and without language) via recurring engagements and symbolic interactions with our surroundings. Johnson ([75], p. 222) argues that "understanding, thinking, and reasoning grow from the patterns of our sensory, motor, and affective encounters with our surroundings". Inference can be a perfect illustration in this context. Inference is basically a guess or a conclusion (right or wrong) based on available data or information. People use available signs (linguistic or no-linguistic) to infer new conclusions. The following is a simple example: If you enter a room full of dust and garbage, you might conclude that this room is deserted or its occupant is untidy. Thus, interpretation of signs does not only assist communication, but it can easily stimulate thinking and reasoning.

8.3. Interpretation of Signs

The interpretation of signs decides its category, and subsequently its communicative value or function. Let us hypothetically assume that a new car company has the hand-palm as its logo. The hand-palm will function as a logo (a *symbol*) when it is engraved on the car body, or as a flag when pictured (an *icon*) and raised on the headquarters of that company. It will function as an informative *index* to single it out from other adjacent buildings However, it can denote a palmistry place on a fortune-teller shop signboard (*value*). At the same time, it may mean 'stop' on a road side or a police-checkpoint (*function*). Looking at small and big hands can indicate a child's and an adult's respectively (*natural index*). These are illustrative instances to show how the setting (and the interpretation from the receiver's perspective) can highly influence the categorization of the sign type in actual usage. Accordingly, our 'inferences' will be affected.

The interpretation process is the potential capacity of the human mind which can transfer meaningful impressions to prototypical experiences that can be remembered and expanded (i.e. built upon). The process of interpretation enables us (as humans) to expand our knowledge and transmit our cultures. Sebeok ([47], p. 8) asserts that "social life is based on the production, use, and exchange of signs and representations. When we gesture, talk, write, read, watch a TV program, listen to music, look at a painting, etc. we are engaged in sign-based representational behaviour". This capacity of transmitting culture and knowledge is one feature of language, or human codes, in general. The human code, which is totally different from animal 'code', enjoys many privileges in terms of communication, such as productivity, arbitrariness, flexibility and topics of exchange (a variety of messages) (see[76], pp. 10–16).

9. Discussion and Conclusions

I must admit that areas pertaining to language and communication, such as discourse analysis, were not probed in this article even by association, except for a moderate reference to pragmatics. First, the overview may deviate from its focus. Second, the overview can easily become an accumulation of theoretical debates and views on interdependent disciplines. Therefore, interested researchers can further explore relevant ideas of this overview as they desire and according to their subjective judgement and objective investigation. During the preparation of this review, it was found that written communication received little treatment, if any, in communication studies. It is true that people communicate verbally more than in writing, but the use of writing in communication has been steadily increasing. Some social media platforms partially involve writing. It is true that writing and its related areas of study are investigated intensively and authored extensively, but many of their types are excluded from communication references, such as emails, letters, memoirs, notices, and the like.

In conclusion, educators and foreign language teachers can integrate various VC and NVC features during their classes to raise, and foster, social communicative competence within a foreign language program where concepts of language, learning, and culture are aligned[77]. Understanding foreign culture is a vital element in developing intercultural competence in a foreign language program[78]. A reference to a few studies supports this recommendation.

In her discussion on the semantics and pragmatics of gestures, Poggi ([79], p. 1482) rightly asserts that "symbolic

gestures are codified on a cultural basis: a gesture that in a culture has a specific meaning, in another culture may have a different one, or no meaning at all. Gestures and NVC cues in many cultures across the globe are investigated in Müller et al. [38]. A good treatment of the relationship between language and culture from a communication perspective is deliberated in Jackson [80]. She remarks that: "Although studying nonverbal communication cannot ensure competence in interpersonal communication, more awareness of nonverbal codes and the potential variations across and within cultures can help to enhance your interaction with people who have been socialized in a different cultural environment" ([80], p. 106).

These arguments prove the need of integrating NVC cue in a foreign language program. One application by language teachers might be teaching learners to get to know how a sign may behave and function in NVC in a different culture. Moreover, signs of any type may be used to activate their background knowledge and schemata for purposes of better comprehension and inference. In addition to that, discourse analysis (particularly spoken) may consider the actual context of the speech utterances to investigate its impact on word selection during a speech event. It may also contemplate on any available data pertaining to paralinguistic features and NVC cues.

It is hoped that this review succeeded in demonstrating how communication is achieved by different signs. It is not only words that convey messages, but other sign species can play a role in our daily life. It is apparent, too, that as culture changes and develops, ways of communication change as well. There is a strong connection between culture and communication. The use of writing in the past compared to social media at the present, is a clear case. The culture of any civilisation is synchronic to that society so that it keeps changing gradually. In the end, it is what we live materialistically and symbolically.

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