Social Semiotic Aspects of Instagram Social Network

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Abstract— **In this paper we address the semiotic aspects of instagram social network. In this regard, we first discuss differences between the typical semiotic communication model and instagram social network communication model. Then having discussed design aspects of an instagram as well as its application user interface, we try to show how social semiotic requirements can best fit in instagram as a social networks media for sharing pictures and extending social relations among artists, citizens and business agents. In this paper it will be shown by recruiting a clear social semiotic model that instagram can also be utilized as a successful platform for pictorial and multimodal sign production and distribution. In the end we discussed the collective semantic intelligence based on instagram. We consider it as the best source for extracting visual semantic intelligence.**

Keywords—Social semiotic;instagram social network; multimodal semiotic resosrses;instagram communication model; instagram affordnss ;collective semantic intelligence.

I. INTRODUCTION

The spread of socio-semantic web has created a lot of interest towards the automated or semi-automated content analysis of such sources. This interest is rooted in the ability to extract knowledge and crowed usage patterns[1]. Semiotics as a field deals exactly with the relation between signs, concepts, and referents; and thus, fruitful analogies with the social media will be derived. In this paper, we consider the theory of Social semiotic which covers the comprehensive aspects of sign pragmatism and sign in the field of social relation and communication. One of the most favorite social relation and community in the web is of course the social networks.

Instagram is a social photography 'app' designed to run on a Smartphone through which the social media user can produce visual and textual impressions, thus allowing the ambient viewer to interact and distribute these impressions. On the other hand Social Networking Sites (SNS) and Online Social Media are central features of the Web 2.0 revolution which is well underway in the second decade of the 21st century. In this paper we introduce instagram social network and we consider it as a medium of multimodal content generation and publication. Framework of social semiotic terms and definition is applied to instagram social Network, therefore the social semiotic aspects of this application is discovered.

II. COMMUNICATION MODEL

In this section we discuss the legacy communication model for semiotic framework in which we have one sender and one receiver only. In contrast at social network models like instagram, we have the collaboration among many senders and receivers (followers) in the network.

A. The Typical Semiotic Communication Model

One of the first "semiotic" rereading of the Shannon–Weaver communication model [2] was proposed by Roman Jakobson (1960), who like his predecessors, talked about channels, messages, senders, receivers, but in the context of communicative functions(including psychological and social). Jakobson structured the space of communication in terms of six related elements: context, sender, receiver, message, code, and channel (see figure 1). A sender transmits a message to a receiver through a channel. The message is expressed in a code and refers to a context. In communication, sender and receiver are alternate roles taken on by interlocutors. Although this model is unclear about a number of crucial issues in communication. For example if the context of the message is that of the sender's, the receiver's, or both. Jakobson's contribution to semiotic studies was to shed light on how language can be used to draw the reader's attention to certain elements of this communication model.

Jakobson further defined six functions of language in communication, each corresponding to one element of the model. The functions are not mutually exclusive in a communicative act, which means that a particular message can serve more than one purpose. The expressive function focuses communication on the sender of the message; the conative function, on its receiver; the referential function, on its context; the phatic function, on the channel; the meta linguistic function, on the message's code; and finally the poetic function, on the message itself (what it says and how it says it). Semiotic engineering uses this model extensively to structure the design space of HCI, based on the examples and correspondences shown here.
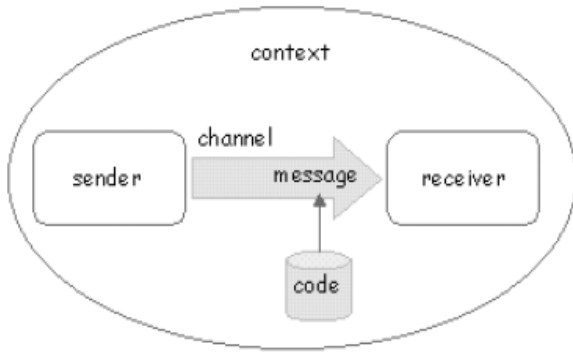
Fig. 1. Jakobson's model of communication space [3]

B. Semiotic Communication Model of Instagram

The social network is a public framework for dissemination of content to our friends and receiving theirs. One of the popular social media for dissemination of multimodal content is instagram. This multimodal content consist of video, picture, caption text, hash tag and geo-location information. For each user there exist two kinds of friends, the followers who receive your posts (multimodal content that you have made it) and those whose posts gets published on your home page. The communication model of instagram is shown in Fig.2.

III. INTASGRAM AS VISUAL/ PICTORIAL SOCIAL NETWORK

A. Visual and Social Aspects of Instagram

Instagram is a social photography 'app' designed to run on a smartphone through which user can distribute visual and textual meanings, and the ambient viewer can interact with those meanings. Instagram affords a number of semiotic modes to the user, such as visual and written modes, as well as imposing a number of semiotic constraints on dimensions and orientation of the image and the length of the caption. The service may be thought of as 'neo-retro' [4] in the way that it nostalgically positions itself in relation to past photographic practices such as Polaroid photography:

When we were kids we loved playing around with cameras. We loved how different types of old cameras marketed themselves as 'instant' something we take for granted today. We also felt that the snapshots people were taking were kind of like telegrams in that they got sent over the wire to others – so we figured why not combine the two?
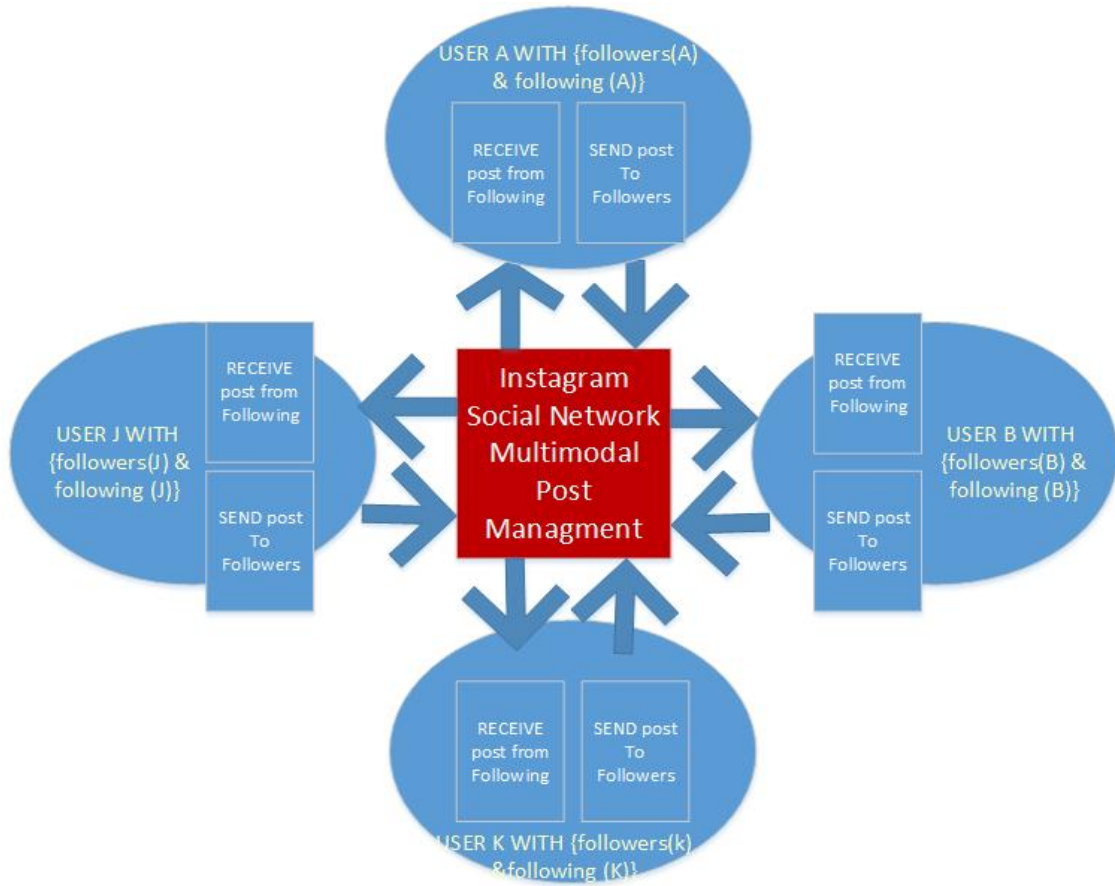

Fig. 2. The communication model of instagram

Instagram may be classified as a social networking service since it allows users to create personal profiles and establish relationships with other users. These relationships are asymmetrical as users are not required to reciprocate. Most social networking services have in common a number of basic functions:

Profile creation is the ability to generate a list of affiliated users, privacy customization, and a mechanism for viewing the activities of affiliated users. These affiliated users are often referred to as 'friends' (e.g. face book friends) or 'followers' (e.g. twitter followers). Boyd [5] suggests that social networking services have a number of characteristic attributes: persistence (capture and archiving of content), replicability (duplication of content), scalability (broad visibility of content) and search ability (access to content via search). As a social networking service, instagram is a vehicle for photo distribution and instagram images are the concept of 'spreadable media [6] that is the media which is shared by audiences for their own purposes within participatory cultures.

IV. SOCIAL SEMIOTIC MODEL OF INSTAGRAM ENVIRONMENT

A. Basic Concept

In Language as Social Semiotic (1978) Michael Halliday proposes that the semiotic resources of language are shaped by how people use them to make meaning-the social functions they are put to. He holds that every sign serves three functions simultaneously: they express something about the world ('ideational meta function'), position people in relation to each other (interpersonal meta function) and form connections with other signs to produce coherent text ('textual meta function'). In Social Semiotics Hodge & Kress (1988) explores any set of semiotic resources that people use in everyday life, the resources of language as much as the resources of image, and of other modes. Hodge & Kress point to a number of distinctive features of a social account of semiotics. First, they problematize essentialist notions of meaning:

"Traditional semiotics likes to assume that the relevant meanings are frozen and fixed in the text itself, to be extracted and decoded by the analyst by reference to a coding system that is impersonal and neutral, and universal for users of the code. Social semiotics cannot assume that texts produce exactly the meanings and effects that their authors hope for: it is precisely the struggles and their uncertain outcomes that must be studied at the level of social action, and their effects in the production of meaning."

In social network the ideational meta function of sign is prone to comment feedback from the community receiving the produced sign. So the meaning being carry from the sign do not belong to interlocutor of it. Content of sign would be enriched by the comments of other users making comment on it.

In Social networking the interpersonal meta function of signs has widespread to the community of friends who received your post. If you use the hash tag to specify the subject of your message it would be accessible to the whole community who search about that specific subject. So your sign can be published for a large number of audiences. Therefore the importance of producing popular and attractive message brings the power and respect for its producer. You have an affordable media to disseminate your interest which was monopolized by broadcasting media a decade ago.

In social networks textual meta function is supported with the capability of producing multimodal signs which is a combination of pictures, Video, caption text, time stamp and geolocation information. The issue of mode and multiple modes became, perhaps inevitably, foregrounded in the 1990s. With the focus now on the co-operation of modes rather than the study of modes in isolation the term 'multimodality' became a key term.

B. Grammar of instagram multimodal posts

Here we consider the grammar of semiotic resources introduced by Halliday. Iideational meta function is achieved by capturing mobile photos as a photographer. In this way photographer register his understanding of the word in to a logical frame of the picture in which he/she can generate visual message .The composition of photos can combine the logical combination of experimental experiences. So the new generation of mobile pictures with the wide range of messages and meaning is saved in instagram. By this way the user is getting familiar with the grammar of visual signs and the technical issues in photography such as composition and lighting through shooting their own pictures and visiting the pictures of his followings' friends. Composition, then, relates the representational and interactive meanings of the image and text and caption through three interrelated systems:

(1) Information value. The placement of elements (participants and syntagms that relate them to each other and to the viewer) endows them with the specific informational values attached to the various 'zones' of the image: left and right, top and bottom, centre and margin.

(2) Salience. The elements (participants as well as representational and interactive syntagms) are made to attract the viewer's attention to different degrees, as realized by such factors as placement in the foreground or background, relative size, contrasts in tonal value (or color), differences in sharpness, etc.

(3) Framing. The presence or absence of framing devices (realized by elements which create dividing lines, or by actual frame lines) disconnects or connects elements of the image, signifying that they belong or do not belong together in some sense.

In the analysis of composite or multimodal texts (and any text whose meanings are realized through more than one semiotic code is multimodal), the question arises whether the products of the various modes should be analyzed separately or in an integrated way; whether the meanings of the whole should be treated as the sum of the meanings of the parts, or whether the parts should be looked upon as interacting with and affecting one another. In instagram the picture is dominant part of making meaning and the other text parts are supplementary.

C. Status of Fitting the Model to the Instagram Environment

This section gives an overview of key concepts in social semiotics and related topics in the instagram social networks. Using illustrative examples where appropriate, we discuss the notion of the sign, semiotic resource, mode, affordance and multimodal orchestration and the way each is fitted to instagram environment.

1) Sign:

The notion of the sign is borrowed from traditional semiotics. Signs are elements in which the signified ('meaning') and signifier ('form') have been brought together. Social semiotics holds that the process of sign-making is subject to the interest of sign-makers, their availability of semiotic resources and the aptness of those resources to the meanings which they wish to realize. That is to say, the relation between 'form' and 'meaning' is not arbitrary but motivated [7]. In social networks the signs are the posts generated, commented, broadcasted, forwarded and liked through the community of users subscribed to social networks.

In (mediated) communication, signs are made and remade, and from a social semiotic perspective signs are always newly made in a specific environment and according to the interests of the sign makers' interests. In other words, "Signs are made – not used– by a sign-maker who brings meaning into an apt-conjunction with a form, a selection/choice shaped by the sign maker's interest', interests that are shaped by the environment and circumstances of use". The major type of sign in instagram is the Pictures captured by the user mobile phones which is edited and uploaded by sign maker who can add some description text beneath that picture. The sign which is made in this way will be saved in profile history of sign maker in instagram and therefore he would have a collection of sign he had shared .Therefore this signs have the memorable feature of contemporary pictures. On the other hand after composing a post in instagram It would be forwarded to sign maker's followers and they can make feedback by writing comment and making like on the post.

In social network a user may not be the original sign maker but he might be an ordinary receiver who understand the sign maker meaning and interested in dissemination of his message and forward this content to her/his friends. In this way some signs are distributed to the high number of user in the social network and find a high rank of distribution. These viral signs always have a distinguished feature which made them as a striking message.

2) Semiotic resource:

As social semiotics evolved there was a growing emphasis on how the context of communication and the sign maker shaped signs and meaning. It moved towards a more flexible notion of grammar, with a focus on people's situated choice of resources rather than emphasizing the system of available resources. Semiotic resource is central to multimodality although it features slightly differently within particular approaches. Kress and Van Leeuwen suggest that a semiotic resource can be thought of as the connection between representational resources and what people do with them. Van Leeuwen describes semiotic resource as follows: Semiotic resources are the actions, materials and artifacts we use for communicative purposes, whether produced physiologically – for example, with our vocal apparatus, the muscles we use to make facial expressions and gestures – or technologically – for example, with pen and ink, or computer hardware and software – together with the ways in which these resources can be organized. Semiotic resources have a meaning potential, based on their past uses, and a set of affordances based on their possible uses, and these will be actualized in concrete social contexts where their use is subject to some form of semiotic regime. The emphasis on rules within social semiotics is on rules as socially made and changeable through social interaction [8]. Van Leeuwen also notes that the notion of 'resource' has begun to replace the notion of 'sign' The concept of semiotic resource offers a different starting point for thinking about semiotic systems and the role of the sign maker in the process of making meaning. In this perspective signs are a product of a social process of sign making. A person (sign maker) 'chooses' a semiotic resource from an available system of resources. They bring together a semiotic resource (a signifier) with the meaning (the signified) that they want to express. In other words people express meanings through their selection from the semiotic resources that are available to them in a particular moment: meaning is choice from a system. But this choice is always socially located and regulated, both with respect to what resources are made available to whom, and the discourses that regulate and shape how modes are used by people. There are various kinds of normative discourses for how we use semiotic resources – sometimes more, sometimes less binding, and of different kinds, but nonetheless they do provide 'rules' for their use.

The mobile phone has many capabilities which made them an smart gadget equipped with high resolution cameras. On the other hand It has access to internet and by which you can get access to instagram. These capacities provide the visual semiotic resources for users to generate the pictorial messages. Beside the picture user can make a multimodal sign by adding written text beside the pictures and add the location tag specifying where the picture is taken. The history of your posted semiotic resource in Social network is kept on your account and the social network community can interact through sending comment on it or assign a " like mark " on semantic resource.

3) Mode:

A mode is often defined as a set of socially and culturally shaped resources for making meaning. A number of different criteria can be considered to establish whether 'a set of resources' counts as a mode or not. The most common 'test' is, following Halliday, the meta-function test. That is, if it can be shown that the set can serve all three meta-functions, it is regarded a mode. For instance, the resources of 'colour' can be used to represent what the world is like (cf. the gardener's green dress), to establish social relations (cf. the doctor's white dress) and to create coherence (cf. the background color against which different images are set in a magazine). However this 'test' only works if a particular community of users of the mode have been identified. Instagram have a representation feature through the visual posts generated as a semiotic resource. On the other hand It defines a social

relation for each user through its followers and following friends. Though instagram the user we have community interaction through getting, commenting and liking the posts. There is coherence in the post between pictorial element, caption, location tag, comments and like so instagram is approved as a special mode of communication by three meta-function test.

In Social network different set of mode is proposed to disseminate the content to the social community. For tweeter this mode of resource sign was a maximum of 150 character tweets. In instagram the mode of publication can be of multimedia resources such as maximum 1 minute video or edited pictures. Beside these the sign maker may add caption and map information. The combination of visual and textual element make these signs to convey profound international interpretation so the audience of sign in the social network are around the word and belong to different social classes.

4) Material, social and cultural affordance

The term affordance is contested and continuously debated. It has particular emphasis and currency in social semiotic approaches to multimodality [9]. Modal affordance is used to refer to what it is possible to express and represent easily with a mode [7]. He positions affordance as a concept connected to both the material and the cultural and social historical use of a mode. In other words, the affordance of a mode is shaped by what it has been repeatedly used to mean and do its 'provenance'), and the social conventions that inform its use in context. Each mode (as it is realized in a particular social context) possesses a specific logic and provides different communicational and representational potentials. The logic of sequence in time is unavoidable for speech: one sound is uttered after another, one word after another, one syntactic and textual element after another. This sequence becomes an affordance or meaning potential: it produces the possibilities for putting things first or last, or somewhere else in a sequence. The mode of speech is therefore strongly governed by the logic of time. In contrast, (still) images are more strongly governed by the logic of space and simultaneity. Like all governing principles they do not hold in all contexts and are realized through the complex interaction of the social as material and vice versa – in this sense the material constitutes the social and vice versa.

The material of social network is digital computation and communication. The mainly mobile photo sharing network had reached 600 million monthly active users. The instagram is one of the most popular social networks worldwide. One of the main applications for internet user in the world is using social network to produce and broadcast their sign in the web. The user interface design goal of such application cover the high affordance in multimodal sign making and sign propagation. The technical affordance of smart phone as a camera and its connectivity to internet combined with the historical, social and cultural of photo shooting and collecting memorable picture among the people made the instagram as a popular Social Network in the web.

5) Multimodal orchestration:

To The meaning of any message is distributed across different modes and not necessarily evenly. The different aspects of meaning are carried in different ways by each of the modes in the ensemble. Any one mode in that ensemble is carrying a part of the message only: each mode is therefore partial in relation to the whole of the meaning and speech and writing are no exception. Multimodal research attends to the interplay between modes to look at the specific work of each mode and how each mode interacts with and contributes to the others in the multimodal ensemble. At times the meaning realized by two modes can be 'aligned'; at other times they may be complementary and at other times each mode may be used to refer to distinct aspects of meaning and be contradictory, or in tension. As Lemke has stated [10]:

"No [written] text is an image. No image or visual representation means in all and only the same ways that some text can mean. It is this essential incommensurability that enables genuine new meanings to be made from the combinations of modalities."

The relationships between modes as they are orchestrated in interactions (and texts) may realize tensions between the aspects of meaning in a text. This kind of tension can itself be meaningful and a means for encouraging reflection and critique. The structure of a text and hyperlinks realize connections and disconnections between screens. These contribute to the expansion of meaning relations between elements. The question of what to attend to, what to 'make meaningful' is a significant aspect of the work of making meaning. In other words, the task of what to attend to and to select as salient to the task at hand is amplified by a multimodal focus.

In instagram the salient mode of communication is visual mode. There are many editorial tools to adjust sharpness, saturation, contrast and crop the pictures. The text part of the multimodal sign is attached in beneath of the picture. Another important message mode of instagram is video posts. All these mode of message carries a like tag which shows the number of the like feedback from the viewers. On the other hand all the multimodal post accompanies the textual comment part by which the viewer can describe their interpretation of sign or use if for enrichment of the post meaning. So we have special multimodal semiotic resources that contain the producer and viewer content.

V. INSTAGRAM INFRASTRUCTURE FOR COLLECTIVE SEMANTIC INTELLIGENCE

Collective semantic intelligence (CSI) is shared or group intelligence that emerges from the collaboration, collective efforts, and competition of many individuals and appears in consensus decision making. The term appears in sociobiology, political science and in context of mass peer review and crowdsourcing applications. It may involve consensus, social capital and formalisms such as voting systems, social media and other means of quantifying mass activity. Collective IQ is

a measure of collective intelligence, although it is often used interchangeably with the term collective intelligence.

Instagram users share their opinions by taking pictures and post them or feedback the other posts through reviews or comments, sharing and tagging content. This increased user interaction and participation gives rise to pictorial information that can be converted into visual semantic   intelligence. instagram use of collective intelligence to propose new friends for the user, to aid him in searching for hot and viral posts , and to make the application more sticky are cherished goals that social network try to fulfill.

According to 2015 statistics instagram users have shared over 40 billion photos and share an average of 95 million photos per day. This big number of pictures is a rich data source to be used for extracting semantic intelligence by Big data applications. The attracted feature of these picture are their supplementary information such as their location tag, time tag, captions, the percent of people who liked it and the written text which can be considered as their metadata.

Instagram can be consider as the best source for extracting visual wisdom based on collective semantic intelligence and the future of this new technology is recruiting   instagram information.

VI.   CONCLUSION

In this article we talked about the semiotic aspects of social network. First we talked about the difference between typical semiotic and social network communication models. Then we discussed instagram philosophy and its design aspects. Then we investigated how instagram fulfills the capability of three meta functions which are the basis of a social semiotic framework. Then we introduced the concept of sign in social semiotics and made relation to feature of posts in instagram. We discussed the instagram Messaging system as a semiotic resource for sharing pictures and videos among friends.

Then we defined the Mode in the process of sign making and we specify the instagram social network Mode. We discussed the material, social and cultural affordance of instagram to express and represents signs with its unique mode. At the end we discussed the special multimodal orchestration of instagram in which sign maker can combine text with picture and video and the text part of message may carry the viewer comment so the receiver of sign has a role in sign making and interpretation.

In the end we discussed the collective semantic intelligence of instagram. We consider it as the best source for extracting visual semantic wisdom and the future of Collective semantic intelligence technology in photo sharing social networks.

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