Graham Douglas / Int.J.Lang. and Cult. 4(2) (2024) 1-33
https://doi.org/10.51483/IJLC.4.2.2024.1-33
ISSN: 2788-404X

SvedbergOpen
DISSEMINATION OF KNOWLEDGE

International Journal of Languages and Culture
Publisher's Home Page: https://www.svedbergopen.com/

Research Paper
Open Access

Degenerate Signs and Cultural Bias

Graham Douglas[1*]

[1]Associate of the Institute of Translation and Interpreting, UK. E-mail: ondastropicais@protonmail.com

Article Info

Volume 4, Issue 2, December 2024
Received : 28 May 2024
Accepted : 15 October 2024
Published : 25 December 2024
doi: 10.51483/IJLC.4.2.2024.1-33

Abstract

The existence of fourfold typologies across a wide range of biological, sociological and humanistic studies as well as in economics and business management theory, suggests that they may also be expected to appear in the form of cultural varieties of semiosis. A problem recognized by many writers is the inadequacy of dualistic theories, and a major school of thought in social anthropology, known as Grid-Group Theory (GGT) offers a richer and empirically tested three-dimensional model in which four types of social environment arise together with the ideologies associated with them. GGT does not refer explicitly to semiotics, but by reconsidering its roots in work by Bernstein on social codes, together with the Systemic Functional Linguistics developed by his colleague Halliday, a route to understanding cultural variations of ideological and semiotic practices is uncovered. Jakobson's Communication Theory is also considered in the light of GGT. Fiske's Relational Models Theory produces a similar quadripartite typology with a basis in the Mathematical structures discovered by the Bourbaki Group, and GGT can also be understood in terms of mathematical structures such as groups and networks. A consideration of Peirce's concept of degenerate signs, together with the three-dimensional model of signs suggested by Morris, leads to a cubic model which allows four types to arise naturally in a 3D-space. In the process of building this model it also brings into focus an issue involving the three dimensions of Cultural Theory – whether the third dimension needs to be independent of the other two or remain as an emergent combination of Grid and Group. The importance of ritual in managing communication is something that Neo-Durkheimian theory can bring to facilitate the application of semiotics to social processes.

Keywords: *Degenerate signs, Grid-Group theory, Cultural theory, Institutionalization, Tropes, Peirce, Morris, Bourbaki, Ideology, Triads, Tetrads.*

1. The Basis of an Argument

First from the semiotic side, Buczynska-Garewicz (1979) pointed out that the type of signs that Peirce described as 'degenerate' are the most common kind in use.

Degenerate signs exist according to Peirce in three types: Conventional signs have two degenerate forms, while Indexes only have one, and Iconic signs have none. This is a consequence of the hierarchical relationship between the three types of signs. It also seems likely that degeneracy is not categorical but admits degrees within each variety (Kruse, 1991). So, including the fully developed triadic sign there are four fundamental types and following Morris's suggestion that signs have dimensions it seems that all four might be represented as regions in a multi-dimensional space.

* *Corresponding author: Graham Douglas,Associate of the Institute of Translation and Interpreting, UK. E-mail: ondastropicais@protonmail.com*

Second, the Durkheimian tradition in sociology asserts that: '*The structure of symbolism parallels the structure of social life'* (Ostrander, in Douglas (Ed.), 1982), and this observation has been thoroughly developed by Mary Douglas and her associates in the form of what she named Grid-Group Theory (GGT) (Douglas 1970; 1978; 1982), more recently re-named Cultural Theory (CT) (Thompson, 1990; 2008). In this theory, social environments come in four major types which are disposed in a three-dimensional space. A related non-dimensional approach which derives four manners of interpersonal relating is Fiske's Relational Model's Theory (1991; 1997; 2005). Both theories have been extensively tested empirically.

This article attempts to find foundations for building a bridge between Neo-Durkheimian social theory and Peircean semiotics.

Culture has been defined in various ways, and symbols are only one manifestation. CT takes the view that symbols are one expression of *Cultural Bias,* which is in reciprocal and reinforcing relationship to *Social Relations* (Thompson *et al.,* 1990). This reciprocal interaction places importance on functional analysis which has become less popular in recent decades. But Thompson suggests that the failings of this approach in the past are mostly attributable to the attempt to treat society as a whole as a single functional system, when what is required is to identify the various *ways of life* that societies accommodate, each with its own cultural bias and social relations (ibid.: 1-3). Each of these different ways of life depends on the others to stabilize and justify it, and the weakness of one can be strengths in others, where a different match of cultural bias and social relations exists. It is useful to note that these cultural biases can be referred to as ideologies (Robinson and Swedlow, 2018), since ideology is also a key interest in semiotic theory (Keane, 2018, Rossi-Landi, 1976; 1983). And it is important to note Thompson's point that cultural biases '*are not disembodied ideas…Mental activity is embedded in and justifies social relations.',* (Thompson *et al.,* 1990).

Peirce approaches semiotics from the perspective of communication, rather than the innate linguistic structures of language proposed in Chomsky's theory (Viola, 2011; Johansen, 1993). This makes it plausible that the variants of signs in terms of their degrees of degeneracy will be reflected in variations of social usage across different social environments. As we shall see, Halliday's Systemic Functional Linguistics, rather than Chomsky's theory will be useful.

My Interest is to investigate how if at all, the multi-dimensional space of Signifier, Object and Interpretant might be mapped in terms of the dimensions of social environments developed in GGT-CT.

I prefer the more common term Signifier to Peirce's Representamen, and Object and Referent will be used interchangeably.

2. Semiotics and Social Anthropology – a Fertile Field for GGT-CT

The current movement in semiotic studies aims to integrate the subject across the nature-culture boundary all the way from biosemiotics to cultural semiotics, and there are papers published in the new sub-discipline of semiotic anthropology. Yet, while the inadequacies of dualistic models are repeatedly proclaimed in semiotic scholarship, an existing school of social anthropology (GGT-CT), which has developed and empirically tested a four types-model remains outside the discourse found in semiotics journals.

In addition, articles in anthropology journals often tend to treat semiotics solely in a discursive and philosophical manner without addressing the relations between the formal models that both semiotics and social anthropology can provide. It is a contention of this paper that GGT-CT offers an excellent bridge for cultural-semiotic traffic, opening up the field of cultural semiotics to a theory that potentially may engage directly with the structure of Peircean semiotics.

It has often been pointed out that dualistic theories are inadequate for the wide-ranging theory that semiotics aspires to be (Sicoli and Wolfgram, 2018; Ness and Coleman, 2018; Singer, 1978), and GGT-CT provides a more adequate fourfold model, which incorporates two marginal ways of life in addition to the dominant ones of individualism and hierarchy which most earlier models focused on (Thompson*et al.,* 1990).

As Thompson states pithily: '*Cultural Theory is a programme for the extermination of false dualisms'* (Thompson, 2008).

The anthropologist Daniel (1987), writing from a semiotic perspective in anthropology focuses on Habit, one of the features of the interpretant in Peirce's theory and likens it to Bourdieu's concept of *Habitus*, which is a feature of social environments, so it is reasonable to suppose that different environments may nurture different semiotic habits. Daniel also insists that knowing is a process that happens in time, and varieties of time consciousness are a basic feature of cultural bias (Rayner, 1982; Douglas, 1978; Thompson, 2008).

Semiotic anthropology is a recent arrival but as Mertz (2007) points out, the two disciplines have much to offer each other, in the fields of indexicality, the relations of power to meaning, the layering of meanings, and GGT-CT offers a direct route to a more elaborated model of ideologies across cultural contexts. It offers more nuanced ways of understanding the processes of naturalization and ideologization, and indeed institutionalization since institutions are also a field of investigation in GGT (Douglas, 1986a).

Keane (2018), cited below, refers to the role of ideology in making signs interpretable, saying (p. 68) that if indexes in themselves assert nothing [as Peirce states] then it is the role of ideology to *furnish them with instructions*. He goes on to discuss how ideology can determine not just the interpretant but also the ground of a sign (ibid. 69, 83), and naturalization and the question of how the map relates to the territory are discussed at length. And Lyne (1980) cites Peirce as saying that rhetoric is 'the general secret of rendering signs effective'. A hermeneutic approach to deciphering social meaning is essential.

Daniel (1987) maintains that the sign is an indivisible triad in line with Peirce's definition, but he also points out that because symbolic signs are held together by convention they are more vulnerable to destabilization and change than indexes; exposed to the 'daily traffic of signs'; and at the same time 'signs of habit are so much part of the light of day that … they are brought into consciousness only through conscious reflection' (Daniel 1987: 29). Communicative encounters with strangers – such as anthropologists – undermine the view of culture as 'a hermetically sealed structure' which the Saussurian view of the symbol encourages (ibid: 15). He goes on to point out the predominance of indexical signs in culture and language, which obliges the consideration of context in understanding them (ibid: 32), and requiring appreciation of the 'multimodal nature of signification in culture' , rather than producing a 'unimodal metacultural account' (p.34).

Daniel contends that signs are not only polysemic, especially those involved in religious and ritual activities, but that their multimodality means that iconic and indexical aspects may be concealed within the same symbolic sign (*ibid*: 39). All this, which led Daniel to the title of his book *Fluid Signs,* should make it clear that cultural anthropology needs a fuller application of Peircean semiotics, in which a 'semantico-referential grammar' is replaced with, a pragmatic approach that takes signs to be complex functions of parameters which include 'speaker, hearer, audience, and location and time of discourse', (ibid: 46). Temporal *différance* – to use Derrida's term is also important and its secondary status to spatial difference in Saussure's account of the sign is seen as a limitation (ibid :296).

I have quoted Daniel at length to show the value of Peircean semiotics in cultural anthropology, and it remains to say that what is still missing is an appreciation of the variety of cultural environments – and hence, potentially their corresponding variety of signifying practices – that is offered by GGT-CT. In fact, Daniel does identify 'two semiotic styles, one favouring symbolicity, the other favouring iconicity', modes of signification which influence conceptions of fundamental aspects of life in a Tamil village, such as village, house, sex, illness, person and knowledge (ibid: 296).

Another experienced anthropologist, Richard Parmentier, has also discussed the relevance of Peircean semiotics to his work, but again, Cultural Theory was not mentioned (Parmentier, 1985; 1994). His work analyzes the use of Peircean semiotics in cultural research, going into Peirce's categories of signs in great detail. The result does not make for easy applications, which may account for the lack of development into other areas such as GGT-CT. Rather than enter into the details of Peirce's three types of interpretants and his 10-fold classification of signs, I have preferred to treat degenerate signs in a fairly simple manner, in order to raise the issue and take some initial steps.

There has also been work on cultural-semiotic interpretations of the Self, conceived as developing as habits (Singer, 1980), which suggests a connection to the four prototypical roles described in GGT-CT: Egalitarian, Individualist, Hierarchist and Fatalist (Thompson, 1990), which will be presented below.

The question of whether meaning is expressed through pre-existing codes or constituted in social actions (Binder, 2018) is an area in which GGT-CT can distinguish the different contexts in which each happens.

Another issue is causality, which in conventional science is reduced to a mechanistic variety which excludes purposive or final causation even though it is evident that living beings have agency (Hoffmeyer, 2015). The mechanical model of causality is limited to indexical signs and the trope of metonymy (Brier, 2015a; 2015b; Barbieri, 2009).

Aristotle's Four Causes, which can be related to Sebeok's model of semiosis will be discussed below. It is plausible to consider causality preferences as part of the wider theory of ideology, and hence some social environments and social relations may tend to favour certain types of causality to explain phenomena.

According to Lotman (2009) the semiosphere must contain at least two coding systems, but he has not developed a theory of how they inter-relate and how many there could or must be (Cited in Kull, 2015). Thompson (2008) points out that there need to be at least two different cultures of organizing within a group for an enterprise to succeed.

Ness and Coleman (2018) concluded depressingly that the burst of anthropological interest in Peircean semiotics that arrived in the late 20th Century, has evaporated, at least in the US, in favour of a return to dyadic models based in Saussurean semiology, possibly due to its simplicity and to a refractory anthropocentrism, something which Peircean semiotics is not limited by. If GGT-CT can reveal its potential for a richer empirically testable manner of investigation, its resilience may yet prevail.

Having noted some of the issues in semiotic analysis of culture, the logical next step is to take up the issues raised by Daniel and others, and to indicate where and how a good dose of CT-GGT could enrich their analyses, and others yet to be studied. We can begin by examining work published in what has been called Neo-Durkheimian theory, where one of the key areas of interest is ritual.

It is useful to point out that GGT-CT has developed in two slightly different directions. Thompson *et* al (1990) have focused more on ideologies and their contents, whereas Perri 6 (2002, 2007, 2022) and Richards (2010) have maintained the concern with ritual as the means of producing social meaning which was central to Mary Douglas' work in the Durkheimian tradition (6, 2024). Giving more importance to ritual practice means that it is less the content of ideological biases that is important and more their 'thought style' (Douglas, 1986b). In her early work Mary Douglas implied that ritual practice is a phenomenon mostly found in just two of the social environments that GGT describes, (Douglas, 1970, 1978 and see below for further discussion), but ritual was central to Durkheim's understanding of the way all social environments function, and Perri 6 (2002, 2007) has described how it is ritual which mobilizes and manages the social expression of emotions. And the structure provided by ritual conventions is what regulates both successful communication and also misunderstanding (Perri 6, 2024). This is important because it offers a point of entry for semiotic analysis of communication in different cultural contexts, and emphasizing pragmatic interpretation, it goes beyond the idea of messages encoded by a sender and decoded by the receiver. However, the concept of code as a more or less tightly structuration of meaning will be retained, especially in contrast to the referent of a sign.

Each of the following issues identified above are addressed in greater empirical detail by GGT-CT

Causality: One of the clearest examples of how this varies with social environment is provided by Rudwick (1982). The boundaries of what modern societies regard as causality also depend on social environments. Rituals are not designed to treat illness for example, because it is recognized to require diagnosis, but they do function to strengthen social bonds in response to particular events (Douglas, 1999). Causality depends on cognition and in the Durkheimian tradition this involves public knowledge, whereas western science and philosophy have privileged personal individualist thinking. The polarity between personal and public is a key dimension of GGT-CT which therefore offers a more delicate and empirical understanding. Types of ritual practice varying with cultural bias, as will be discussed below.

It is important to note that GGT-CT has been extended into the field of institutional theory in recent decades, (Douglas, 1986, and 6, Perri 2007, 2016), and in relation to causality, the way anomalies are explained and managed in institutions, styles of inference, varies strongly across the four social environments of GGT-CT (6, Perri 2022).

And we can note that Peirce related his three types of sign-object relations to different styles of logical inference. Thus, Deduction depends in facts and is Indexical, in Abduction moves from a premise constructed Iconically, and in Induction the facts in the premise satisfy the definition of a Symbol of the facts stated in the conclusion (Peirce 1958 CP, 2.92).

Regulation of communication: This is closely related to ritual practice in the broad sense that is understood in GGT-CT.

Ideology: As a determinant of interpretants – Ideology can be understood as another term for cultural bias, and therefore varies with social context (Robinson and Swedlow, 2018). It is related to thought style, but the two are not coincident (6, Perri, 2022)

Power and meaning: Power is involved in the third dimension of GGT-CT and its manifestations are understood as a function of the two major social dimensions of the theory, instead of being treated only in a global and often dualistic sense.

Thought styles: The subject of a book by Mary Douglas (1986b), where she points out that it is the style more than the content of beliefs that determine whether groups from different social environments can negotiate successfully or be divided by common interests even within the same group (see also Perri 6, 2007). Thought style includes styles of inference, for example in explaining anomalies in different institutional contexts (6, Perri 2022). Rhetorical styles also figure in the evocation of emotions (6, Perri 2007), so would be interesting to examine this in relation to the four 'Master Tropes' of Vico, which is the subject of a companion paper in preparation.

3. The Two or Three Dimensions of GGT-CT

3.1. Grid and Group

As Mary Douglas explains in her book *Natural Symbols* it was necessary to 'do violence' to Bernstein's analytical scales to adapt them for wider anthropological purposes (1970). Bernstein (1974) used a contrast between what he called Positional families, in which interactions were highly structured into recognized roles, compared with Personal families where each person's individuality and feelings were valued over their roles which in turn were more fluid. The Positional environment tended to produce ways of speaking which he described as Restricted Code, which occurs in any group that spends a lot of time together in a degree of relative intimacy. In such communication many things can be taken for granted without being made explicit, and there are important non-verbal components. One of the functions of this way of communicating (which has nothing to do with varieties of grammar or dialect) is simply maintaining the social bond, what was famously called 'phatic communion' by Malinowski (1923), which I view as the experience of simply being together – even in silence.

In contrast, Elaborated Code is appropriate for wider-ranging abstract conversations where definitions of terms are important and not everyone may be immediately familiar with the details the speaker wants to talk about. Although Elaborated code tended to arise in Personal families and Restricted Code in Positional families, Bernstein later separated families and codes into two orthogonal dimensions in his map and referred to each code as being sub-divided into codes that referred mostly either to Persons or to Objects. In Mary Douglas's theory the dimension of role structuring became Grid, while Group replaced Bernstein's polarity of Elaborated (Low Group) to Restricted Codes (High Group).

Both these dimensions were also closely related to Durkheim's 'Social Regulation (Grid) and 'Social Regulation' (Group), names which are preferred by some modern scholars for their clarity (6, Perri, 2024).

3.1.1. Group

Of the three dimensions which structure the GGT map (but do not exist in Fiske's theory which is not dimensional), Group is a measure of the closeness of social interaction. Where this is strongest social environments are characterized by close face-to-face interactions among people sharing the same environment. Although the family unit is a kind of archetype of this, similar contexts can be found in many small groups and communes, in contrast to more impersonal and distant environments. In combination with a strong Grid factor, strong Group will reflect environments where role structure is also important.

3.1.2. Grid

The Grid dimension involves categories of classification of social environments which vary from what we may call, loose to tight,

3.2. Manipulation/Grade

The GGT-CT dimension of Manipulation focuses on power relations was named as Manipulation by Thompson (1982; 2008) although it has not been as widely discussed as Grid and Group, and Maleki and Hendriks (2014) have suggested that the third dimension must be independent to remedy some inconsistencies in GGT, in contrast to Thompson's treatment in CT, where it is emergent, arising from interactions between Grid and Group (Maleki and Henriks, 2014). They proposed the name *Grade*, to replace Manipulation.

Manipulation, as Thompson says (1982: 41) is '*power made manifest*', and he sketches how each of the Grid-Group combinations colour the manifestation of power. Let us consider them briefly.

When Group and Grid are both high, power is exercised by the group in the form of prescriptive rules of behaviour and permitted social relations: a bureaucratic institution would be an example, the Hierarchist is the stereotype chosen for this type of character by Thompson (1990). In the opposite corner when both Grid and Group are low, power is exercised by individuals through networking; and practical achievements, rather than rule-following is what counts, and technical consultants are more typical characters. Both these quadrants of the Grid-Group plane are at the high end of the Manipulation scale, compared to the other two quadrants where one of the dimensions is high and the other low. When only Group is high the typical environment is the small Egalitarian group, with no internal hierarchy or role structure, and only one rule – "you are either with us or against us". When Grid alone is high the situation is the one that is increasingly common today, the precariously employed worker whose attitude is aptly labelled Fatalist (ibid.).

Opinions differ about the need for a third dimension, with Maleki and Hendriks (2014) strongly in favor, and concerned to argue the need for a third dimension that is truly independent of Grid and Group. On the other hand, Pepperday (2009)

sees no need, arguing that Grid and Group, which correspond respectively to his polarities of Competition and Cooperation, and all the features ascribed to a third dimension, which he calls Coercion, can be generated from these two contrasting parameters, because he considers that only four combinations out of a possible eight generated by three polarities are viable (Pepperday, 2009).

This is an important question, since we are looking for evidence or models that could bring Peirce's triadic semiotics into some sort of relation with GGT-CT.

There also seems to be confusion between the definitions of Grade/Manipulation and Grid. Thus, the Grid dimension is related to 'asymmetry in relations' (Thomson 2008), and 'social control is a form of power' (Thompson *et al.* 1990), both statements cited by Favre *et al.* (2019).

Yet in the same passage (Thompson *et al.* 1990), Mary Douglas (1978) is cited stating that a high Grid environment 'is an explicit set of institutionalised classifications [that] keeps [individuals] apart and regulates their interactions' (ibid.). If individuals are insulated from each other, how do they communicate their power? This does not seem to be quite the same concept as power imbalance, or if it was then why the need for 'Manipulation'?

Clearly some power imbalances will also exist within each of the four elementary forms, most notably between despots and serfs (capitalists and the precariat in modern terms), in the High Grid, low Group environment.

It is also important to note that even if there is a homology between three-dimensional models of semiosis and of social environments, this does not automatically mean that the dimensions are aligned, they could very well be rotated with respect to each other. Or there could be one dimension orthogonal to the other two disposed in a plane. And in Peirce's semiotics it can be said that the third element of a sign is a function of the other two, if we remember that Signifier, Referent and Interpretant are hierarchically related.

It seems relevant that Richards (2010) has pointed out that 'in Durkheim's account, it is ritual action that generates meaning, not the other way round, and 'meaning is an emergent property of the performance of a rite'.

And there are signs of a third dimension in Perri 6's account of the function of ritual in regulating solidarities through regulating emotions. In each of the four environments of GGT-CT he acknowledges that emotions elicited will vary between cases of 'successful' and 'unsuccessful' rituals, which seems to imply a dimension which could be described as 'evaluative'. This would not be surprising given the strong connection between emotions and evaluations (Tappolet, 2015), and Mulligan (2012) who discusses how emotions can attach value to objects, intentionality. This can be compared to Richards' neo-Durkheimian statement (2010) in relation to ritual:

> *'The harnessing of emotional energy is critical for collective action, but emotions need to be attached to material objects and processes through some regulative means.'*

Taking this a stage further, it seems plausible to recast this in semiotic terms, and say that while ritual practice supplies the signifiers and the objects, the emotions elicited are the interpretants of a semiotic process. And Peirce recognized three types of Interpretant, one of which was labelled Emotional (Peirce 1958, CP: 5.475).

I will return to this in the brief discussion of Osgood's work on the semantic differential below.

Ritual was mentioned above as central to Neo-Durkheimian thinking, so it is important to note that while in Mary Douglas' early work (1970, 1978) she associated ritual practices most strongly with High Group and High Grid environments – as described below – she later developed a wider meaning for ritual practice, in line with Goffman's work on frame analysis (Goffman, 1974). This understanding encompassed quotidian as well as grand ritual, and private as well as public. According to Perri 6, she regarded,

> 'hierarchical ordering as cultivating a ceremonial ritual style, individualistic ordering as cultivating a transactional and utilitarian ritual style, isolate ordering as eclectic but often using rituals of randomness such as ritualised use of lotteries, and [—] enclaved or sectarian contexts as cultivating an iconoclastic ritual style'. (6, Perri 2024).

Fiske acknowledged some similarities between his Relational Models Theory and GGT, while emphasizing that his four types cannot be treated as defining a 2-dimensional space of qualities, they occupy separate clusters related by mathematical structures of increasing complexity (Fiske, 1992). It will be easier to comment of Fiske's work after we have examined the four social environments generated by the dimensions of GGT-CT.

4. Bernstein, Halliday, Morris: From Social Semiotics to GGT-CT

Semiotics was only referred to very briefly and incompletely by both Fiske and the theorists of GGT-CT. However, by returning to the origins of GGT in Bernstein's work on Class, Codes and Control, from which Mary Douglas developed

her framework through discussions with Bernstein, and the work of Bernstein's colleague Halliday, we can discern a connected pathway through the thicket between the two disciplines.

Bernstein's work is relevant in the present essay because he was influenced by the Systemic Functional Linguistics (SFL) developed by Halliday. SFL is a theory which emphasizes communication, in a social context, in preference to Chomsky's focus on grammar and syntax and their relationship with the brain.

His theory seems to be applicable without restriction to language, and that is what is assumed here.

Both Halliday and Jakobson developed their three-dimensional theories from that of Bühler (1934). Bühler had a referential dimension which was retained and renamed 'Ideational' by Halliday, while the Referent was among Jakobson's six factors necessary for communication (Jakobson, 1960), which it seems reasonable to contrast with Code. In Jakobson's theory, only Sender-Receiver was explicitly a polar pair, which he formed from the separate dimensions that Buhler proposed, while Halliday named this pair the Interpersonal dimension. Halliday's third dimension is the Textual, while in Jakobson's theory the two remaining factors are Message and Channel, which it seems plausible to view as a polar pair. Halliday also used the terms Field, Tenor and Mode taken from Ogden and Richards (1923) to describe his Ideational, Interpersonal and Textual dimensions respectively (Halliday and Hasan, 1989).

In Halliday's theory these three dimensions are used to radially divide a model of language that is also structured in a series of concentric strata (Almurashi, 2016). Moving from the innermost level of phonemes, through lexico-grammar and discourse semantics to two levels of context, taken from Malinowski (1923): Context of Situation or *Register*, and outside this, Context of Culture or *Genre*. As this final layer is reached the tri-partite division peters out allowing genre to have other features, and it is at this level of culture and Genre that the link to the ideological stereotypes of GGT is most appropriate.

Martin and Rose (2009) have developed Halliday's theory and proposed 12 varieties of texts that can be produced under different conditions of Field, Tenor and Mode (see below).

Charles Morris followed Peirce's triadic model of the sign but allowed that each aspect Object, Signifier and Interpretant could be viewed as *dimensions* of the sign, when treated behaviourally: the semantic, syntactic and pragmatic dimensions, respectively. In his updated version (Morris, 1946 and in 1938) he points out that signs are not to be limited only to language, and he expands the definitions of each dimension.

Semantics is now expanded from the relation to objects to include all modes of signifying; Syntactics deals with all combinations of signs without regard to the other two dimensions; and Pragmatics originally the relation of signs to their interpreters is now stated to be concerned with the origin, uses and effects of signs in use. Morris devotes some space to the relation between signs, saying that every sign is related to those others which are used to define it (Morris 1938: 7) which brings him close to Saussure's concept of value (De Saussure, 1966). And importantly for the present purpose, Morris notes that for some signs a given dimension may practically vanish, if a sign is not implicated with other signs (syntactical dimension) or if it has no actual interpreter (ibid: 7). So, although working in the Peircean tradition he does not mention Peirce's concept of a degenerate sign, but in practice admits it.

To summarize, I propose to use the following three dimensions derived from Halliday, Jacobson and Morris:

Referent – Code, the Ideational dimension. Morris's Semantic dimension.

Sign (message) – text, the Textual dimension. Syntactics in Morris.

Sender -Receiver, the Interpersonal dimension. Pragmatics.

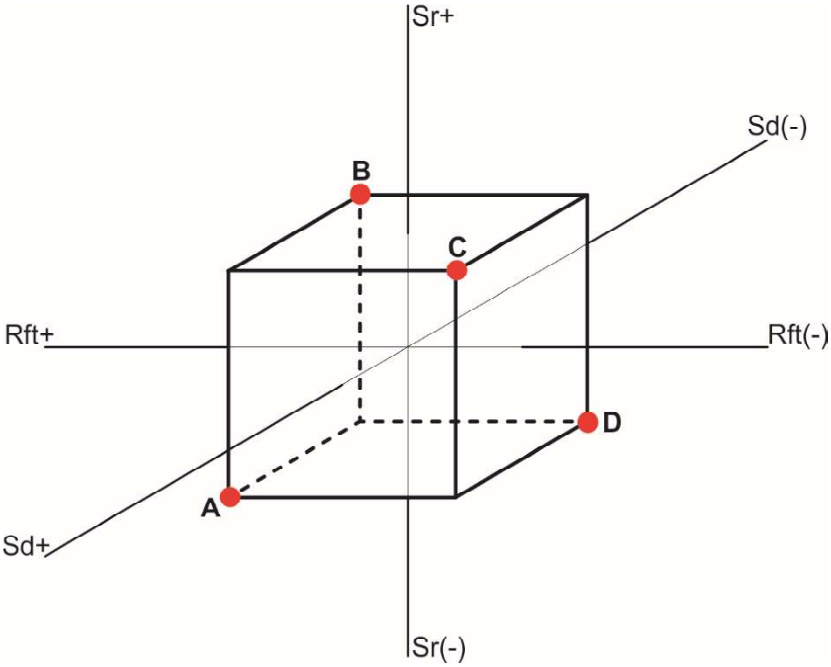
Morris took his analysis from Mead (1934; Morris 1964, 1969), and went on to say that interpretants too, as 'dispositions to act' are necessarily tri-dimensional. These three dimensions were: designative, appraisive and prescriptive, respectively in the same order described above, and any given sign could have variable 'loadings' on each dimension.

In Peirce's theory, different types of Interpretants: Immediate, Dynamic or Final, must play a part in cultural variations of semiosis, but they too provide only three varieties, not four.

However, Morris's idea of using the three components of a sign as factors with greater or lesser weight is interesting to use dimensionally in relation to Bucynska-Garewicz's discussion of degenerate signs. From what has been said above, it is useful to have a term that bridges the interests of cultural anthropology and semiotics. I propose that these two fields meet in the study of *varieties of signifying practice*.

It is now time to examine the dimensions of GGT-CT, always keeping these three semiotic dimensions in mind.

For the moment, it is useful to convert the conclusions reached above into a geometrical model of semiosis. After we consider Grid-Group Theory the dimensions will be further enriched. In Figure 1 I have simply used the three dimensions of signs with +/- polarities to indicate relative strengths of motivation or salience of each term, and these will be discussed in detail when the model is presented.



Note: The three degenerate types are placed according to the letters A, B, C, D according to the protocol that the sign type at C indicated as Sr/Sd means that the Sr and Sd dimensions are more salient (+) while the Rft dimension is masked, and so on for A and B.

Figure 1: Showing the Disposition of Four Types of Signification, Situated in the Three-Dimensional Space of the Sign

The model being developed here is the simplest, but seems apt for further development, relating Peirce's sign classifications to what Bourdieu called *Habitus* in different social environments (Marty, 2024; 2019).

Following the summary above, the dimension Sr+/- runs from Sr+ where signs are tightly integrated into a text, to Sr (-) where they are interpretable independently and open to improvisation.

Rft+ is the raw referent contrasted by Rft(-) where it is codified. The Sd dimension refers to the interpretants of signs, which we will discuss below, while the Sender-Receiver description will be reconsidered in the light of GGT-CT.

The four vertices labelled with red letters A to D, have been positioned on the principle of maximising the distances between them, and they thus form the four vertices of a tetrahedron (not drawn) within the cube. The cube of course also contains another tetrahedron, which we will comment on later.

4.1. Group

The Sender-Receiver axis, which Halliday renamed the Interpersonal dimension obviously involves interpretation both by the sender and the receiver, so both must be related to the Interpretant dimension. As Kruse (1990) says, 'the final interpretant is… [the one] …, that would be produced by a community of interpreters' (ibid. 221, citing Peirce, 1909).

West (2012) points out that the development of the Interpretant in children marks their growing social involvement.

Later developers of Halliday's work have specified the three contrasts in more detail, giving examples, and for Tenor (the interpersonal dimension) there are contrasts of Close *vs* Distant relations and Equal *vs* Unequal (Martin and Rose, 2009). Their work on discourse and varieties of texts, treating shopping lists, instruction manuals, holiday stories, adverts, novels and so on, seems to overlap with the interests of Perri 6 (2007).

Martin and Rose describe each of Field, Tenor and Mode in terms of two-dimensional maps, and there are interactions between the dimensions. The contrast of Unequal *vs* Equal in the Tenor map also seems relevant to the dimension of Manipulation in GGT-CT. Professor Martin confirmed that such interactions are an important part of analysing texts and discourse syndromes (Martin, 2023).

Peirce's early development of the three aspects of the sign originated in his reading of Kant and his observation that in all languages the most fundamental level is expressed through the three personal pronouns, in the order I – It – Thou, corresponding to his later triad of Signifier – Object – Interpretant. The deviation of Peirce's sequence from the more obvious one of 1st – 2nd – 3rd person, is explained by the fact that he understood 'Thou' as another 'It' which contains within it another 'I' (Viola, 2011; Peirce, 1984). Thus, 'Thou' was the highest level of Peirce's hierarchy which later became the Interpretant characterized as an example of Thirdness.

I suggest that an appropriate polarity for interpretants in semiosis would be between signs that are on a scale from *Kinetic* (and denotative, low Group) *to Passive* (and connotative, high Group). It seems reasonable to assume that in High Group environments hermeneutic thinking will be common. The Group scale in GGT-CT captures social integration and this, as in Bernstein's contrast between Elaborated and Restricted speech strongly influence the way communication is produced and interpreted, especially pragmatically, as what can be take for granted varies so much.

Peirce also classified Interpretants into two other triads, which must have a bearing on the present discussion, but it is not my intention to delve into these further details here.

4.2. Grid

The Grid dimension involves categories of classification of social environments which vary from what we may call, loose to tight, which in communicational terms it seems appropriate to translate into a contrast of codified referents against 'raw reality'.

It is likely that signs used in environments at the 'raw' end of this scale may show a preference for what Peirce termed the Dynamical Object - which is the kind of object that has a direct influence on the sign's Interpretant as distinct from the immediate interpretant which is determined by the signifier. The Dynamical Object is 'able to evolve' (Kruse, 1990), which also implies that referents are less codified in these environments.

Bernstein's two varieties of codes are associated with Group, so it is proposed that Grid can also be understood as scale of *relative strength of codification*, as a contrast of Codified referents vs Raw referents - using Jakobson's code and referent functions, and the Ideational dimension in Halliday's SFL.

Martin and Rose (2009), characterized the Field or Ideational dimension, in discursive situations through contrasts of Specific *vs* General and 'Activity-structured' *vs* 'Non-activity structured' topics. The latter is in tune with regarding the Grid dimension and hence the use of signs on a polarity like kinetic-static, which I have associated with the Group dimension, so this may be a case where the three dimensions of SFL do not align uniquely with those of GGT-CT.

4.3. Manipulation/Grade - Power Inequality

The question arises as to whether this can now be associated with the remaining terms of Jakobson's theory, Message – Channel, the Textual dimension of Halliday's model and Morris's Syntactic dimension relating sign a sign to other signs in an utterance. In Figure 1, I propose that the Sr+ extreme represents a tendency of the communicative environment towards control, and integration of all levels of discourse into higher textual levels.

The Message end of Jakobson's polarity seems to correspond naturally with Signifiers but what can we make of the Channel? A channel in a simple view of communication is an impermeable wall that guides the flow of signs and prevents them from leaking out into the environment and perhaps finding new referents or interpretants - which they might well do in inter-cellular biological communications. In the model I propose - focusing on Halliday's textual factor – I suggest that the other end of this axis can be usefully characterized by signs that are integrated into textual structures, which they require to be understood. In this type of communication, their most important context is the text or social coding habits rather than the surrounding reality.

This offers a different understanding in which the technical role of *channel* – in language typical of early information theory - is replaced with the constraints of integration into a text. In Jakobson's model he associates the Phatic function with communications that refer to the channel simply as having the function of maintaining contact, often by simple repetition of familiar phrases or by analogue communication. This is clearly a reference to the interpersonal functions as well, especially as in the high Group and *low* Manipulation environment, also suggested by the term Phatic *Communion*. It may be best to discard the idea of channel, with its technological connotations.

Having described these four situations, it remains to propose a semiotic interpretation, and this will relate to Halliday's Textual dimension. What is the role of the text in these four environments, and what kinds of texts?

Texts of different kinds are important in the worlds of both the Hierarchist and the Individualist technical consultant. In the former the rules are a bible of prescriptions that must always be followed in each situation that the Book has codified – and there are no other situations. For the technical consultant there are also texts, but they are free to be chosen depending on the technical methodology that is most efficient in reaching the desired goals and the profits that they will produce.

For the two more marginal social environments there are no such edited and peer-reviewed texts, instead there may be diaries and photo albums in small groups, while the Fatalist, lost in a sea of exploitation may write love letters, choose articles in magazines and pop songs, or consult astrological predictions in the hope of finding some comfort from anonymous impersonal recipes for a happy day. In fact, astrology is a perfect field of study for cultural varieties of semiosis; four types of symbolic discourses that match those of GGT-CT are easily identifiable and will be the subject of a separate publication.

Finally, we can consider the role of texts in a different way: as *arguments.* From this perspective the power of an argument to convince depends on its ability to integrate corroborating evidence, and this is facilitated by a structured text in which each part supports the others - the power-knowledge nexus. In the absence of this structuring, which in Durkheimian terms mirrors the social relations, there is just opinion (alternative truths for the Fatalist) or charisma (for the sect) to guide thinking and judgement.

Martin and Rose (2009) found that a polarity of 'Monologue' *vs* 'Dialogue' was useful in characterizing the Mode dimension (ibid: 13-16), as well as 'Accompanying Field – Constitutive Field'. As pointed out above however, their scale of Equal *vs* Unequal in their Tenor map is very appropriate to the Manipulation scale of GGT-CT. It is also possible that since each of the dimensions of Field, Tenor and Mode are represented as maps having four quadrants each, making 12 in total, that the Cube model may incorporate them as edges in a more developed version. This would require empirical investigation (Verweij *et al.,* 2011).

4.4. Some Caveats

The following points are in response to readers who may consider that it is impossible to make meaningful correspondences across such a wide range of typologies.

Firstly, I rely on the concept of Family Resemblance, developed by Wittgenstein, which does not require all members of a family to display all the same characteristics. Needham (1975) coined the term 'polythetic classification' in applying this concept to anthropological data (Douglas, 1978; Gross and Rayner, 1985).

Fiske refers directly to semiotics but is of course faced with the problem of making Peirce's relentlessly triadic system match his own four-term scheme – which also does not have dimensions and so cannot be as simply related to GGT-CT or to semiosis. His work is best considered in terms of the typology of four which can be related to the four stereotypical roles/ideologies of GGT-CT, which we consider below.

There may be many more possibilities for certain social environments to prefer other categories of sign, but we can note that despite the complexities, Peirce also simply referred to Icons and Indexes as degenerate signs (1958 CP 2.92, 5.72). However, according to Kruse (1991), this is not a valid reading. These intricacies are best discussed by Peirce scholars.

We can now revise the list of dimensions considering what we have learned from GGT-CT.

Raw uncoded Referent *vs* Static Codified signs, the Ideational dimension. Morris's Semantic dimension. Grid.

Sign (fluidity and improvisation of message) *vs* Integrated Text, power and weight of evidence, the Textual dimension. Syntactics in Morris. Manipulation/Grade.

Sender - Receiver, the Interpersonal dimension. Pragmatics. Reframed as Potential of stored connotative meaning *vs* Kinetic outward-moving communication.

6. The Four Types in GGT-CT and Fiske's Relational Models Theory

Fiske's theory is founded on wide-ranging field observations, and empirical testing, but it is also based on a set of mathematical structures discovered by the Bourbaki Group, at the dawn of the structuralist movement, and influenced Piaget and Lévi-Strauss (Aubin, 1997).

These structures follow a hierarchy of increasing complexity through: Equivalence Relations, Linear Ordering, Ordered Abelian Groups to Archimedean Ordered Fields (Fiske, 1991,1992: 202-229). A simpler realization of these

structures is provided by Stevens (1946) in his theory of the common measurement scales used in science and data analysis: Nominal, Ordinal, Interval, and Ratio scales in the same order as the structures.

Fiske detected these structures in four different ways of relating, respectively: Communal Sharing (CS), Authority Ranking (AR), Equality Matching (EQ) and Market Pricing (MP), in the same order again. They are not disposed on a two-dimensional space like GGT, but at a descriptive level they have many features in common with the four GGT social environments, which I hope will become clear in the following summary, in which to save space I have discussed Fiske's models alongside the GGT-CT social environments.

It is useful to note that in the Neo-Durkheimian theory of social emotions the ritual practices of the four different GGT-CT environments may elicit social (i.e. relational) expressions of different emotions in the same person (6, Perri, 2002).

It will be helpful to refer to Figure 1.

6.1. Low Grid High Group Low Manipulation

This environment is characterized by a lack of internal hierarchy and strong face-to-face emotional relations, with the lack of role structure often leading to jealousy and hidden factions (Douglas, 1978). The only effective sanction is expulsion from the group. Relations with people outside the group tend to be less important and subject to suspicion. These groups are like a family and are also typical of religious sects. The cardinal virtue is sincerity, the world-view binary: 'we against the rest'. The typical CT personality here is the Egalitarian (Thompson *et al.,* 1990) or in an earlier version, the Survival Collectivist, who is strong on tradition but with a homespun philosophy of Small is Beautiful"; concerned with issues of purity and contamination (Thompson 1982). It corresponds to the relations described by Fiske as Communal Sharing (CS), which he also describes abstractly.

Rudwick (1982) uses GGT to describe four cognitive styles in Geology and associates the low Grid High - Group type with a *Binary* style (Rudwick, 1982). This arises among unstable small groups concerned to impose a before/after dichotomy on geological time to coerce a fit with the Genesis story. Contributions from outside the tradition are not welcome.

6.2. Low Grid Low Group High Manipulation

Here Innovation (Cerroni and Simonella, 2014) is a key to success, in business environments, allowing large profits to be made before others enter the market, and technical know-how is rewarded, status derives from success. There are no moral constraints on economic relations and equally no social safety net for the unlucky. The cardinal virtue here is success and achievement, typical of the Manipulative Individualist, for whom Nature and society are separate and intellectual and cultural standards are high. This culture is outward looking in search of new ideas and customers and open to foreign travel (Douglas, 1969, Thompson *et al*., 1990; Thompson 1982). Economies of scale leads to a desire for expansion and specialization, relationships are networks based on mutual usefulness (Douglas, 1978). The cognitive style is Abstract, aiming to reduce data with the aid of theoretical models (Rudwick, 1982), and predict past and future events from present data.

At an abstract level, Thompson calls this type of organisation *Networking,* which is a chain of relationships with an influencer at its head, while Fiske (1991) sees its underlying mathematical structure similarly as the Linear Ordering.

6.3. High Grid High Group High Manipulation

The next step up in complexity according to Fiske is an internally differentiated hierarchy, with agreed roles and a range of mechanisms to control deviance. Following the rules is more important than revealing inner feelings, in contrast to the small group. At each level within the hierarchy what matters is Equivalence Matching (EM), so that equality is now no longer based on simply being 'one of us' entitled in proportion to needs but is now a measured parameter. If I give you 2 kilos of rice today, you owe it to me at some future date. Cardinal virtue: Piety, the stereotype personality is the Hierarchist or the Manipulative Collectivist, who believes society and nature are isomorphous (as above so below); uses ritual to ensure this harmony; strong on discipline and tradition (Thompson, 1982; Thompson *et al.*, 1990). The group is able to collect levies from members with the aim of using capital investment to prolong existence (Douglas 1978). The Concrete style (Rudwick, 1982, ibid) is focused on data collection, and its integration into detailed classifications. It tends to be practised in hierarchical institutional environments, unlike the individualism typical of the Abstract style, and avoids theoretical speculation. In contrast to the Individualist, the Hierarchist – who is not just the person at the top of a pyramid – exerts Manipulation by appealing to the rules of the hierarchy, not simply by personal force. The abstract structure identified by Fiske is the Ordered Abelian Group.

6.4. High Grid Low Group Low Manipulation

Fiske's final type of social relations is called Market Pricing (MP). In this environment close personal relations are limited, and important social and political decisions are taken elsewhere. Many domestic servants and casual workers experience this type of working environment. The cardinal virtues in this environment were given as truth and duty (Douglas, 1970), and the typical character is the Fatalist, or the Survival Individualist (Thompson *et al.*, 1990) where transactions are impersonal and determined by external forces, who has a poorly developed but eclectic philosophy and little perspective on time. Millenarian movements and Cargo Cults are associated with this environment. Life is a lottery (Thompson *et al.*, 1990). The individual is constrained by remote impersonal institutions (Douglas, 1978). The Agnostic cognitive style (Rudwick, 1982) places great value on the details of observed data but is also sceptical towards theoretical analysis of causes and resists integration of data into the large-scale classifications prized by those working in the Concrete style. Fiske's final mathematical structure is the Archimedean Ordered Field.

7. Triadic Signs but Tetradic Usage: Degenerate Signs

In Peirce's semiotics, a sign is triadic and has three components, the *Signans*, or Signifier in Saussurian terminology; the Object or Referent; and the Interpretant. Peirce's well-known classification based on the way a sign relates to its object: by similarity as an Icon, by contact or force as an Index, or by convention as a Symbol, produces only three not four types.

Peirce classified his triadic signs into 10 types based on the hierarchical relationship in which the Interpretant is an example of Thirdness, and therefore presupposes the lower levels of the Object (Secondness) and the Signifier (Firstness). It is important to point out that these 10 types are all genuinely triadic and thus are varieties of the fully developed sign, while degenerate signs only appear to be triadic, but can be reduced to combinations of dyads or monads.

Peirce's term 'degenerate' does not mean that the sign is infected with some kind of semiotic disease or a virus from outer space (William Burroughs, cited by Land, 2005). Peirce derived the term by analogy with similar relationships between classes of mathematical functions (Peirce ,1958 CP 1.365). A degenerate sign can still function triadically, but it is only triadic because of some external factor, including the way it is viewed. Peirce stated that degeneracy depends on a relation of reason, produced by the mind, not inhering in the relation between the elements of the sign (quoted by Kruse, 277, and CP 1.365-366).

Bucynska-Garewicz (1979) made the important observation that most signs are degenerate in practice, and this 'reveals the diversity of the sign universe' (ibid: 43), so it seems valid to take this statement as a foundation for a model of the varieties of sign structure and their possible correlation with social environments.

Her view seems quite in tune with the notion of active structuration in communication processes that is preferred in recent work on semiotics and biosemiotics (Wheeler, 2016).

It seems reasonable to suggest that degenerate signs can also be seen as stages of development of complete signs, in the contexts of both biosemiotics and social semiotics, as has been proposed in the field of child development (West, 2012, 2013).

Peirce's triadic systems are logically defined structures and as such are not open to empirical testing, but this does not stop empirical observations leading to new models of signs and their development (Kull, 2020). Fiske could only relate the triadic to the fourfold by skipping over one of the terms of the latter, so this is a point for investigation.

Morris, followed in the Peircean tradition of viewing signs as fundamentally triadic, but he also (1946: 60-91) described four *'modes of signifying'* which he said were closely related to four modes of sign usage by an organism to accomplish some purpose, directly or through sending a sign to another. This focus on an organism brings his interests close to those of Sebeok (1979), in developing biosemiotics which we will examine later. Morris's four modes, (with their usages in brackets), are: informative (designative), valuative (appraisive), incitive (prescriptive) and systemic (formative), (Morris, 1946: 95 ff).

7.1. A Cubic Model of Semiosis

I now want to propose a view of Peirce's degenerate signs, in which the three elements of Signifier, Referent and Interpretant, are always present but *not equally salient*, being partially repressed or conflated with one of the other terms, whether on a path of development or decline. Another image was suggested by Daniel (1987), who says that most signs are polychromatic and can be likened to a jewel, in which each facet has three corners and different facets may 'reflect light back towards the observer/interpreter under different circumstances'. In the model to be presented here the 'jewel' is a tetrahedron with four triangular faces, four corners and six edges.

Bucynska-Garewicz (1979, from now on BG) points out that there are three fields of degeneracy, depending on the relations: Sign-Object; Sign-Mind; Object-Mind, but these are not categorically degenerate, because each of Peirce's 10 types are genuine. While there is less Thirdness in a rhematic indexical sinsign than in a dicent indexical legisign, which in turn has less than an argument symbolic legisign, all three are genuine.

In some places Peirce asserts that a symbol degenerate in the first degree is simply an Index, while the second degree of degeneracy produces an Icon (Peirce, 1958 CP: 2.92, 5.71). However, as Kruse (1991) points out, the Icon and Index are only relatively degenerate as Peirce makes clear in a later article (MS 307, and CP 5.75 – 5.76). Since the social habitus is a field of social rough-and-tumble some of the niceties of semiotic theory can be left until a more adequate model is produced.

The three degrees of degeneracy can usefully be approached through Peirce's description of his well-known types, based on their Grounds, the relation between the signifier and its object. These are the Symbol, the Index and the Icon. The Icon cannot show degeneracy as it is already too simple, the Index has only one degenerate type and the Symbol has two (Peirce, 1958 CP 1.365, 1.473, 2. 265, 2.274-2.283, 2.92, 3.361 – 3.363, 5.71-5.73, 8.330). This is a consequence of the hierarchical relation between the sign types.

The three degenerate types, plus the fully developed sign, make a total of four, so from this perspective there are four varieties of signs in the Peircean system, and therefore four varieties of semiosis.

In Figure 1, the cubic model is displayed with its three axes, and four places have been marked A, B, C, D to indicate the Genuine sign (at D) and its three degenerate variants. I shall now describe how each of these relate to the structures of the signs concerned. The dimensions in the Figure 1 are each marked with a +/- polarity where the + indicates that the respective dimension is more salient in the sign compared to the opposite end where it is progressively less visible or explicit. The + end can also be understood as greater degrees of motivation and less arbitrariness to use Saussure's terminology. Motivation is a characteristic which a sign may possess in varying degrees, as he explicitly noted (de Saussure (1966 [1916]).

The most genuinely arbitrary sign is therefore characterized by being at the (-) end of all three dimensions. The cubic space is here viewed as continuous not categorically divided, so the various types of Peirce's set of 10 will be found in places depending on their coordinates in the three dimensions, but the categorically degenerate types will be those at the extreme + ends of at least one dimension.

Degenerate Secondness is not to be confused with degeneracy in Indexes - so a degenerate index is the purest example of Secondness (West, 2012) - meaning that the Interpretant becomes weaker or even absent.

Now let us look at the descriptions that Peirce (Collected Papers are referenced as CP) offers for each degenerate type.

7.2. Degenerate Indexes

CP: 3.361 - an Index asserts nothing, it says 'There!' and there it stops.

1.365 - relations of reason create degeneracy, especially resemblances, contrasts etc., and there is also the degenerate Secondness which is identity - Peirce also describes degenerate Secondness as 'internal' contrasted with the external bruteness of genuine secondness, where one of the two parts is merely a character that the object must have.

8.330 - a completely degenerate dyadic relation is one of Identity, but similarity is very close to that.

2.283 - An Index is genuine if its Secondness is existential - meaning a struggle, an impact by two elements with their own identities; a relation between two elements that requires the presence of both in which the genuine second "suffers and yet resists" (Peirce 1958, CP 1.358, cited by Kruse, 1991). Degenerate Secondness is when the two elements do not depend on each other and are related by identity, or resemblance, although the latter interpretation is open to discussion (Kruse, 1991). West (2012) cites Peirce's statement that the degenerate index is existentially related to its signifier (CP 5.75).

For the present purpose the key feature seems to be the relative weakness or even absence of the Interpretant so that the sign approaches the dyadic form Sr/Rft in which reason and subjectivity are eclipsed. This seems to be a basis for the positivist reductionist model of science.

When the Interpretant is suppressed, it leaves a sign that aims to create a law from a referent or a field of referents, in other words a manipulative or scientific sign. This implies causality, but only the mechanical variety - a key ingredient of Peirce's Secondness. I suggest that this will typically be done by treating the sign or the law as a mask for the interpretant. A sign is taken as a simple representation of the referent, excluding any mental or subjective image, an embryonic empiricist discourse, thus:

Sr/Rft (Sd)

In the descriptive shorthand here, I use brackets to enclose the part of a genuine sign that has been elided in its degenerate form, and fused with the term immediately preceding it. This type (*Sr/Rft*) is the scientific-technical world in which meaning is deliberately excluded, in favour of objectivity and the search for signs and the theories that are composed of them, with the aim of manipulating reality.

7.3. 1st Degree of Degenerate Symbols

CP: 1.366 - accidental Thirdness, is the example of the gift split into two separated events where person A puts down item B and Person C subsequently picks it up without the intention of giving and receiving a gift. In the case of signs this type of degeneracy occurs when the genuine triadic relation can be reduced to two or more dyads.

2.265 - those Sinsigns which are only replicas of Legisigns, as explained by Marty (2019; 2021).

2.92 - An index is a symbol degenerate in the first degree. A place where Peirce adopts the simpler description.

2.293 - The first type of degenerate symbol is an existent individual and only signifies such characters as the individual may realize. A genuine symbol has a general meaning.

2.301 - a symbol can only denote a *kind of* thing (my emphasis).

In the case where there are just two dyadic relations, they form a line: Obj — Sr — Interpretant.

This suggests a meta level within the sign, and especially in the case that the Sr is actually part of the referent or part of a more complex sign, in a synecdoche relationship. I link this to the 'bureaucratic' world in which the real is excluded by being reduced to the signs that have been ideologically produced, to extract the 'essential' from the unnecessary and to 'manage' the world. A feature of conventional science ideology too.

The sign thus becomes an Int/Sr dyad in which reality – the referent – is reduced and absorbed into the signifier, creating a discourse in which nature is co-opted by human convention, a theological and conventional discourse, where referents (raw nature) are replaced by socially constructed meanings. A codification of reality, with the corresponding danger of reification (and hubris). For the Hierarchist, the world is an unwelcome guest.

This type of degenerate sign can be represented as:

Sd/Sr (Rft).

7.4. Second Degree of Degenerate Thirdness/Symbols

CP: 1.473 - Where the triad is reduced to three monads

2.293 - an abstract symbol whose only object is a character.

I interpret this to mean that the Object and the Signifier are fused together as one, making the sign into a dyad of Int/Obj.

1.383 - degenerate consciousness in the 2nd degree corresponds to intermediate Thirds - meaning as in Peirce's example of 3 cities which merely happen to lie on a line such that B is between A and C.

5.71 - the most degenerate Thirdness is a conception of 'a mere quality of feeling to represent itself to itself as representation, as in pure self-consciousness'.

This statement seems to describe a sign where the signifier is not explicit so that the relation appears to be an immediately transparent one of Referent to its meaning.

3.362 - the 3rd case is where the Sr-Obj relation is mere resemblance, and the two terms may be indistinguishable, consistent with 2.293. The map merges with the territory, so again Sr = Rft and the sign is Int/Rft (Sr). Comparing this with the previous case, we can say that the first degree of degeneracy incorporates the Referent and thus reduces it to a mere part of the signifier, whereas in the second degree there is no signifier distinct from reality (the referent) naively apprehended. Here the sign supports a naturalistic discourse which elides the existence of socially constructed laws and identifies the Rft un-problematically *as* a Signifier: Nature as God's book for humans to read in 16th century terms. Keane (2018) citing Bateson provides a description:

> *'The attempt to return to the absolute innocence of a world in which there is no separation between the map and its territory'.*

Keane is making a general point about semiotic ideology, whereas GGT-CT locates this worldview in a specific social environment. And later he refers to the emergence of awareness of mediation implying a developmental process but

without the suggestion of giving each of its stages a different social context. Semiotics combined with GGT-CT can offer just that. And the rich data of social anthropology can provide fields for illuminating varieties of semiosis.

We can diagram this reduced triad as:

Sd/Rft (Sr)

7.5. The Genuine Sign

We can now turn to quadrant D, the fourth type of sign, and the closest to an ideal of arbitrariness. By assigning it to the remaining vertex, subject to the principle of maximising the distances between the four types, it is *automatically* characterized by low ratings on all three axes, low motivation semantically, dispersive syntactically and most pragmatic or the least loaded with ideological connotations: it is we may say and *empty* sign that exists above the glass ceiling of motivations.

I propose that this can be represented as a two-level signification similar to Barthes metalanguage or following the representations above as:

Sr2 > Sr1 (Sr/Sd/Rft)

Where the '>' represents level 2 being above level 1.

At this point it is interesting to see how Morris dealt with his fourth variety: 'formative systemic signs', which express logical relations such as 'or' that cannot relate to the object in any of the previous three ways.

After considering whether a fourth dimension is necessary, Morris concludes that a better solution is to regard these signs as:

> *'Being* at a higher level *than the signs they accompany (i.e., they presuppose these signs without actually signifying them)', (my emphasis).*

And Peirce (1958, CP 2274) states that in a genuine triadic sign, the Interpretant must stand in relation to its Object in the way that the Sr stands to it, yet it must have another triadic relation in which *the relation Sr-Object shall be its own Object* (my emphasis). He seems to say that the Ground of the sign must also become the Object or an Object of the Interpretant. This seems to imply another structure within the sign, a kind of meta-level, an idea which we will return to later.

Finally, the complete 'arbitrary sign' that Saussure considered the only real type appears, and it does so by a new level of abstraction, it is essentially meta-linguistic, free of motivation, and thus well-adapted to the impersonality of markets – referring to Fiske's fourth type of social relations (MP). To borrow linguistic terminology, the classical sign can be considered to exhibit a double articulation.

This is quite consistent with Piaget's comments on the development of children's cognition in which the last stage of cognitive development is an operation of 'classification of classifications' and hence a process 'raised to the second power' (Piaget, 1970: 67).

The same can plausibly be said of Freud's 'secondary revision' in the last stage of the dreamwork.

Peirce and later commentators have concluded that there was no need for a category of Fourthness (Schneider, 1952; Peirce, 1992) because with three components all further levels of complexity can be assembled through branching, which cannot happen if the sign were simply binary.

However, Hoffmann and Roth (2010) developed a fourfold classification of sign usage from their experience in education which has some overlaps with the themes discussed above. They extended Peirce's triads to tetrads, by adding the categories of 'context' or 'collateral knowledge' and others such as 'purpose', which applied in some cases but not others.

Their analysis is functional, like Halliday's and they propose that signs can exist in four perspectives, of which the Representational is the only one developed by Peirce in their view. The others are the Epistemic, the Volitional and the Formal (Hoffmann and Roth, 2011), and at least some of their features recall the four contexts of learning that Bernstein derived from Halliday, as mentioned above.

It is interesting that Peirce (CP: 2291) commented that Icons, which assert nothing, could be thought of as acting in a 'Potential Mood', while Indexes would be in Imperative Mood, and Symbols in Indicative mood.

The cubic model is a geometrical one, a graph with vertices, edges and faces, so it is interesting to consider whether these 3 types of features, with their different degrees of freedom could lead to an enhanced model, or indeed to several different graphs for different situations.

The fact that each vertex involves two terms might suggest that the cubic model as a whole represents a kind of 'proto-semiotic grammar', with edges expressing something akin to verbs, and faces the semiotic 'Moods'.

Deacon (1997) has provided a closely analysed model of the development of signs in chimpanzees that allows a clearer conclusion to be reached about triads and tetrads.

He is careful to distinguish symbolic understanding from the ability to transfer learned associations from one stimulus to another or to a new context. And he notes that a crucial property of symbolic reference is that unlike indexical associations it is not extinguished if the expected association of stimuli ceases to be valid. Symbolic references (in the form of words) are stabilized by their relationships to other words, not to referents, which in the cases of angels or unicorns may not actually exist.

So, a new level of binding together of indexical relationships must emerge to create symbolic relationships (Deacon 1997: 85-87*)*. And the key to this new level is that a word can be selected correctly for use if its relationship to other words is already understood – in other words an elementary appreciation of grammatical and syntactical rules is a requirement. Two nouns cannot be combined, nor can two words with similar referents, a verb must be related to a noun syntactically. This type of rule-based combination is a logical or categorical generalization, as opposed to one based on stimulus or context.

And the advantage it confers is simplification – the number of possible associations of word to referent grows astronomically with the number of items, but syntactical rules greatly reduce the load on memory.

Deacon's model shows that words can now be '*about'* indexical relations instead of just being indexical themselves (ibid. p.83), so the jump to another level takes place here in his model. However, a part-whole relation is more elaborate than the many indexical part-part relations that the whole may contain, without being at a more abstract level, and it is not present in Deacon's model. This point is relevant to the way tropes are related to signs and will be discussed in a separate paper-

A recent paper by Kull Kalevi (2023) refers to Deacon's work but proposes a model with four levels of indeterminacy in the development of the full arbitrary sign. And it is interesting to note that his fourth level is called 'Fantasy' (Kull 2023), since as mentioned above, one of Bernstein's functions of learning for children is the imaginative (Bernstein, 1974).

Bennett (2021) has considered Barthes' analysis, along with other work, in relation to the semiotics of literary texts, and developed a diagram he calls a 'black pyramid' of varieties of signs. Bennett's system, which includes both of Barthes' concepts of metalanguage and connotation is not incompatible with the cube-tetrahedron presented here. He quotes a different article by Buczynska-Garewicz (1983) but not her important discussion of degenerate signs.

Barthes' discussion of multi-level or 'staggered' signification is important in the discussion of texts. His concept of connotation opens up the discussion of ideological loading of signs in political discourse, while meta-language is self-evidently the opening of a new level of signification. And connotation or secondary modelling systems provide a semiotic perspective on ritual meanings (Monticelli, 2016).

8. A Fourfold World of Social Environments

While semiotic theory is focused on triadic structures, typologies from the social sciences and the humanities generate four types, which are sometimes placed in a two- or three-dimensional space. Considering them will also flesh out the three dimensions of CT rather than relying on their definitions and will provide material to refer to in comparisons with other typologies.

In an article provocatively titled '*Four Galore*', Vereij *et al.* (2020) devised a questionnaire for a group of people to rate 50 of the most important social theories which developed fourfold typologies, and while recognizing the difficulties of interpreting the results they were still able to conclude that there were real commonalities between the different systems. Thompson's book *Organizing and Disorganizing* (2008) takes up this theme and argues that there are reasons why only five ways (four + a null position) of organizing social environments can exist based on the Impossibility Theorem of Schmutzer and Bandler (1980), although the application of this theorem has been contested by Nowacki

(2007). Maleki and Hendriks (2014) also point out that if their suggestion of a third independent dimension is adopted (Grade replacing the emergent dimension of Manipulation), this would invalidate the application of the impossibility theorem. It seems that there is need for more discussion of the relation between CT and Fiske's approach based on mathematical structures (see below).

The fifth position – the hermit's choice (Douglas, 1978; Thompson *et al.*, 1990) – is more a theoretical interest in CT, most of which has been concerned with operationalizing the four environments that occupy the quadrants of the GGT map.

What have the fourfold typologies added?

There are many fourfold typologies, and I have collected some of them in Table 1, although it is not possible to discuss them all here. However, it is possible to make some further observations about the relation of semiotics to GGT-CT.

Table 1: Aligning the Different Schemes

Sector	A	B	C	D
Fiske	Communal Sharing	Authority Ranking	Equivalence Matching	Market Pricing
Grid-Group #	Egalitarian	Individualist	Hierarchist	Fatalist
Bernstein	Restricted Code (Person)	Elaborated Code (Person)	Restricted Code (Object)	Elaborated Code (Object)
Halliday	Interactional	Instructional	Regulative	Imaginative
Pepper * #	Formism	Mechanism	Organicism	Contextualism
Mannheim * (ideology)	Anarchist	Radical	Conservative	Liberal
Frye *(emplotment)	Romance	Tragedy	Comedy	Satire
Vico * (rhetoric)	Metaphor	Metonymy	Synecdoche	Irony
Storper&Salais #	Interpersonal	Intellectual/technical	Industrial	Market
Sköldberg	Human Relations	Power Machine	Systemic Function	Contextual
Sebeok#	Infancy, alter-dependency	Ego-dependency, Structure	Hereditary codes, Ritualization	Interdependency, Communication
Aristotle	Material	Efficient	Formal	Final
Tinbergen	Ontogeny	Action	Phylogeny	Adaptation
Freud	Condensation	Displacement	Symbol formation	Secondary Revision
Alexander	Intimate domestic	Tool storage	Organized Labour	Public socializing
Bacon's Idols	Cave	Theatre	Tribe	Marketplace

Note: * The asterisks indicate the typologies borrowed by White in his book *Metahistory* (1973). # The hash symbol indicates the typologies which had dimensions. The order from A to D is also the developmental sequence in the case of the tropes and also of Fiske's Relational Models. Typologies below the double border are not derived from GGT/CT or White's work.

Halliday's Genres are not specified as a set of four, but it is interesting to note the use that Bernstein made of Halliday's description of the seven key functions of language and their corresponding environments which a growing child needed to become socially competent. Bernstein (1974) reduces the seven to four while referencing Halliday (1969) and describes the following four 'contexts' in which the child needs to learn: Interactional, Instructional, Regulative and Imaginative. Two of the remaining three functions were related to these: Personal with Interactional, and Heuristic (problem solving) with Instructional (how to do things), while the final one was Communicative being the overall purpose of language in any context. Bernstein (*ibid.*) makes clear that both Restricted and Elaborated codes need to be

learned in all four environments, and that codes, which are not directly observable, constitute the deep structure relative to speech variants which are at a surface level.

And Halliday (1974) makes an interesting comment that the different genres of literature are based on giving different emphases to these functions of language, referring to Zumthor (1972), where Halliday in turn is cited. This makes it plausible that the four functions and their contexts are biased by the codes that Bernstein has developed, and indeed they seem to fit easily into Table 1.

Kull (1998), points out that all acts of recognition and classification of features of nature imply control (in GGT-CT terms this is high Manipulation) over them and says that this tends to lead to binary oppositions. This can be related to the role of ideologies, and it is here that GGT-CT offers a particular advantage by providing a three-dimensional analysis. Rossi-Landi referred to Mannheim (1936) in his discussion of ideological varieties, yet he still insisted on a simple dualism between the dominant 'Conservative' and Revolutionary forms (Rossi-Landi, 1990), without discussing Mannheim's whole set of four. In Table 1 these two (Mannheim uses the term Radical in preference to revolutionary) are in columns B and C, and the corresponding GGT types are the Individualist innovator and the role-bound Hierarchist. These two positions on the GGT map have been called the 'stable diagonal' (high Manipulation) because they are both concerned with exerting large-scale influence, in contrast to the marginalized social situations of the other two types (Douglas, 1982). In the same volume, Ostrander (1982) pointed out that the conformist/individualist dimension runs across both the stable and unstable diagonals, but in Rossi-Landi's analysis the ideologies proper to the marginalized social environments are not recognized.

The discussion above of ideology and classification also suggests that the GGT dimensions of Grid and Group might be better oriented at an intermediate angle between those of the Referent- Code and Kinetic-Static dimensions, since the contrast of Elaborated-Restricted code, which was the source of the Group dimension of GGT also involves questions of naming and classification. This kind of question can only be answered empirically.

In considering CS, Fiske suggested that it was likely related to kinaesthetic communication, based on his comparison with Piaget's sensori-motor stage of infant development, and went on to say that since the AR system is very often encoded socially by spatial hierarchization it should therefore be seen as an 'iconic mode'. But this confuses a mode of expression with the content expressed, the use of distance of approach between people to express an indexical relation of ranking is not the same as an iconic meaning.

And according to Fiske, EM would correlate with pre-operational manipulation of objects in 'indexical' form, leaving MP to be represented in 'abstract symbolic form'. He has thus only partly captured the hierarchy of sign relations of Peircean semiotics, and without referring to Peirce at all (Fiske, 1991).

Although Peirce's three types of signs also form a hierarchy ascending from icon to symbol, Fiske's discussion leaves this in conflict with the ordering of his four models, by associating iconic representation to a more developed structure than indexical.

In a contribution to an overview of Relational Models Theory, Fiske (2005) notes that Peirce's model of signs integrated both communicative and cognitive aspects (Fiske, 2005: 114). However, he assigns CS to indexical communication on the basis that it is characterized by extensive physical contact between bodies, while AR remains Iconic and MP symbolic. This means that EM has to be omitted from correspondence with Peirce's categories, which he explains on the grounds that:

> *'There is nothing in the Peircean tripartite typology corresponding to the conformation of EM, because Peirce apparently did not recognize the representational properties of procedures, and his taxonomy was not concerned with constitutive processes. However, Piaget's (1952) concept of concrete operations is helpful in understanding this conformation. […] Piaget explores how children use concrete operations for judging equality or inequality. … [so] it seems reasonable to ask whether the primary adaptive function of these capacities is social. […] Piaget (1932, 1941– 1951) […] did not explicitly discuss concrete operations for constructing socially balanced relationships. Nevertheless, … one of the most pervasive concrete procedures for constituting EM is taking turns* (Fiske 2005: 97-98).'

I hope to have shown that through considering degenerate signs in relation to the genuine type, it is possible to overcome Fiske's problem.

8.1. The Contribution of GGT-CT as a Whole to a Theory of Semiosis

One of the most interesting – and possibly controversial - contributions of GGT-CT to the tri-dimensional view of semiosis has appeared through the linking of the Group dimension with the interpersonal one of SFL and communication

theory. By replacing the apparently obvious requirement for a contrast between Sender and Receiver with one based on the kind of social identity of persons in communication. This has asserted a profoundly social view of semiosis in which the type of communication and hence the way that interpretants of signs are formed is founded on different types of social identity, especially on how the self is construed as being either individually atomised or immersed in and defined by social relations. In the case of phatic communion, perhaps the best example of the naïve state in which signifiers and codes are not recognized, mere contact is what counts. I suggest that this can be described as a state of shared being in time. Thinking of information theory, Georgescu-Roegen's restatement of the second law of thermodynamics is appropriate: Entropy increases as time flows through the observer's consciousness.

And in employing Halliday's textual dimension to contrast dispersed signifiers to integrated texts, it seems that Jakobsen's use of Channel as a factor in his communication theory can be discarded in the context of social communication.

In contrast, the placing of the referent in correspondence with Halliday's Ideational factor and Jakobson's referential function, seems quite uncontroversial.

The three principal dimensions of connotative meaning in Osgood's theory of the Semantic Differential also show similarities with those arrived at here (Osgood *et al.,* 1957).

His Potency (strong-weak) dimension has an obvious correspondence to Manipulation/Grade, and his Activity dimension (active-passive) clearly relates to the kinetic-static dimension proposed here for the Grid dimension in a semiotic framework. The surprise is the third and most prominent scale of Evaluation (good-bad). If this is relevant to the Group dimension it implies that the primitive ideological contrast in operation is one of Good-Us *vs.* Bad-Them, which seems quite plausible. And it also points to the Interpretant as being fundamentally involved with evaluation and judgement. This seems consistent with Peirce's description of the Final Interpretant of a sign as the one that a community of people would eventually arrive at (CP: 8.184, 8.315). In this context it is interesting to note that some theorists recognize a moral (hence good-bad) dimension is important in the social construction of the self (Smith, 2012). And as remarked above there seems to be an evaluative dimension implicit in the influence of ritual on public emotions (6, Perri, 2007).

9. The Ubiquity of Fourfold Typologies

The following section might be considered as an appendix, but I have treated it here to show the range of fourfold typologies, which share a family resemblance.

Similarities between some major typologies across the social sciences have been noted in varying degrees by Fiske (1991) and D'Angelo (1992), including others not discussed here, such as Freud's analysis of the dream work in terms of the processes of condensation, displacement, symbol formation and secondary revision, and Marx's discussion of the four forms of value. Readers are referred to the sources cited.

9.1. The Humanities are Also 4-fold

It is striking how many typologies in both the humanities and social sciences are fourfold and contain homologous features despite the wide range of fields they were derived from, and several important examples are collated in Table 1.

Hayden White's book *Metahistory* (1973) analyzed the work of 19th Century historians, putting into correspondence typologies created by other writers in fields including ideology (anarchism, radicalism, conservatism, liberalism, from Mannheim (1936) and literary emplotment (romance, tragedy, comedy, satire) from Frye (1957), but the two fields of most relevance here are those of Pepper (1970, [1942] on World Hypotheses) and the four master tropes of Vico, which are shown in Table 1, along with some others that we shall come to.

It is important to note Hayden White's caution that, despite the homologies between his chosen typologies at different levels, they were not limited to combine with each other only within one given type – i.e., vertically in the columns of Table 1. A text could be ideologically Liberal while its argument style was Organicist and it was plotted as Tragedy, and so on.

The tropes are relevant due to their close relationship to varieties of signs. While a sign stands for another thing, its object, a trope changes the referent of a sign, although this is an over-simple comparison. The suggestion made now is that below the level of Rhetoric in Table 1 there will be the more basic level of semiosis, which will be the subject of a separate paper. I suggest that he social forms of the linear network and the nested hierarchy have abstract forms in common with the tropes of Metonymy and Synecdoche, and this provides another link between semiotics and GGT-CT.

9.2. *The Four Worlds of Economics and Management Theory*

In a study of a group of industrial scientists, Bloor (1982) describe a man working in a highly structured environment (type C) who gives great importance to accurate calibration of instruments (1982). This type of quantitative science processes what we may call 'raw reality' and turns it into a scale of numbers, which are then used to draw conclusions – or more developed signs, i.e., interpretants. And the example that these authors give for a scientist in a Type B environment is a semi-independent consultant who is handed problems to study with a view to carrying out the first stage of turning raw observations into quantifiable measures on a scale. Thus, the man in a C type environment does both pieces of work, building on the earlier stage and then interpreting his results – which shows a clear progression of complexity as predicted by Thompson (2008), but here interpreted semiotically. Going a step further, and noting that Type C environments are High Group, and consulting our cubic model, we see that High Group is associated with connotative or multi-layered meanings.

CT-GGT has also been extended into the theory of institutions, and plausibly correlates with the theory of the four 'Worlds of Production' developed by Storper and Salais, (Thompson Personal Communication, 2023). Storper and Salais (1997) have developed a theory based on the *Economiques des Conventions*, in which they map out four types of production based on the combination of two dimensions of factors which every company must deal with, but in ways appropriate to the context of their manufacturing.

The four worlds that Salais and Storper identify are included in Table 1. In the Interpersonal World production is both *Dedicated* and *Specialized* involving close communication between producers and clients working in a local niche market, which recalls the small group environment of GGT. The Intellectual/Technical World is also involved in producing specialized goods but of a *Generic* kind, which are available to a wide market. Here, the key focus is on innovation and the application of science to production, which chimes with the Individualist attitude of GGT-CT described above. The worker is typically the expert, whose work cannot be evaluated by measurement or customer satisfaction, but instead the persons themselves are regarded as investments and carriers of knowledge (Storper and Salais, 1997).

The Industrial World is the typical large-scale production of *Generic* and *Standardized* products, in which the workers are often not highly skilled, and their function is to be a reliable cog in a machine, free of personal concerns or styles of working. Nevertheless, this environment creates a sense of loyalty through familiarity with colleagues and with the routine tasks enacted every day. The system dominates the individual, discipline is essential, and the hierarchical management structure is not questioned, but the company will often provide employee insurance schemes and bonuses. Large capital investments are required, and the expectation is that the company's products will be marketable in the long term (ibid. 47, 60).

Finally, the Market World is geared to large scale production of *Standardised* products, which are also S*pecialized*. In this case production must respond to rapid changes in demand for products. Innovation is not as radical as in the Technical World and consists in being able to adapt the parameters of a product within standard ranges to suit a customer's needs. The situation of the employee is often to be employed on a casual or sub-contracted basis with no guaranteed stability, '*the pure Market World is a hard life for all concerned'* (ibid, 72). Clearly this world has a lot in common with the atomized subordination described in this corner of the GGT-CT map.

The stereotype members of GGT at High Group are the Egalitarian and the Hierarchist, contrasting to the more detached Individualist and Fatalist. And in Storper and Salais' analysis, the Interpersonal and Industrial worlds (see Table 1) are characterized by closer interpersonal relations in contrast to the Intellectual and Market worlds. Fiske's Authority Ranking and Market Pricing models also imply less social closeness than Communal Sharing and Equality Matching.

The contrast in GGT between the Hierarchist and the Fatalist on the one hand and the Egalitarian and the Individualist on the other, expresses a contrast from high to low codification. And in Storper and Salais' system the contrast between columns A and B against C and D is a scale running from worlds in which there is little imposed structuring by the needs of production, to worlds in which the workers are dominated by these structures. Their contrast is between Specialization (which implies adaptation and improvisation) and Standardization.

This link is important because economic activity, like communication through signs is based on exchange, and some progress has been made in theorizing this relationship (Rossi-Landi, 1968, 1975; Goux, 2001; Borelli, 2018).

GGT-CT has also expanded in the area of Organization Studies (Douglas, 1986), so it is interesting that semiotics has arrived in the closely related field of Management Studies (Green *et al*., 2009; Li, 2017) without any overlap in cultural-symbolic theorizing between the two fields. Total Quality Management (TQM) was used in an illustrative study to show how syllogistic analysis can be used statistically to follow the progressive institutionalization of a theory (Green *et al*.,

2009). Li also describes an opposite 'connotative' process of institutionalization, derived from Barthes (1967), in which the triadic structure of the sign is weakened, and its institutionalizing power arises through offering a space for ideological signifieds to take over. There is a lot of scope for dialogue between the different fields of social semiotics and GGT-CT.

In the field of Business Management Theory, Sköldberg (2002), proposes that Vico's four Master Tropes underlie the four main schools of thought in this area at an abstract level, concluding that a pluralistic approach involving all four major approaches is best. His discussion also draws on the developmental sequence of the tropes (Burke, 1969), thus suggesting a potential analogy with a dynamic approach to CT (Thompson, 2008).

Having discussed the four major schools of management theory, Sköldberg takes a further step by identifying each school with one of four different measures of organizational performance – and each of these is performance relative to a different and essential goal of all organizations.

The first three business goals (columns A to C in Table 1) are given names similar to the schools of management thinking that emphasized them: Human Resources, Efficiency, System, while the Cultural goal is described as Corporate Mission. The latter goes beyond the purely functional view of a business organization and represents an outward-looking concern with cultural issues and how the company relates to its customers and the image it offers to society in general. It is interesting that markets are mentioned in the last column in three typologies.

As indicated in Table 1 several typologies use two-dimensional maps to position their four types, but four types can be contrasted in three different ways so that A may be paired with either B, C or D against respectively C+D, B+D or B+C, so a three-dimensional map, a cube, is required to include all possibilities.

Looking at Table 1 we see that all four of the schemes that have dimensions recognise an axis contrasting types A+B to types C+D. In GGT this is the Grid axis, and the others are: Specialization - Standardization (Storper and Salais); Analytic -Synthetic (Pepper); Ego-dependency and other-dependency *vs.* Gene-dependency and Inter-dependency (Sebeok). The last are rather opaque categories and Sebeok does not give a name to this axis, but the contrast can be perhaps summarized as Individual – Global.

In management studies rhetorical tropes have been deployed to model discourses as they vary through the life cycle of organizations (Green and Li, 2011) – and life cycles, it should be mentioned, are also a feature of GGT/CT theorizing (Thompson, 1982, 2008).

9.3. Four Types of Signifying Practice

Julia Kristeva published a paper with this title in 1974, which I have not referred to here, as it seemed freighted with Lacan's obscurantist interpretation of Freud in attempting to say something about social and cultural life. But there are echoes of the categories discussed above, and her title acts as a good description of what I have aimed to achieve in the present paper.

10. Sebeok: Semiotics from the Biological Perspective, and Aristotle's Four Causes

The systemic and contextual view described above chimes with Sebeok's scheme in which he attempted to derive a typology of different forms of semiosis referring to Tinbergen who is known for his work on the four questions that must be answered in order to understand a biological organism (Sebeok, 1979).

And it is to this work that we now turn. It is interesting to note that Jakobson's communication theory which is usually attributed to a Saussurian approach was inspired more by the analysis of biological systems (Wheeler, 2016).

Sebeok (1979), briefly described four varieties of bio-semiosis in ethological terms, starting from an article by Gerard (1960) on neurophysiology. He simply proposes that varieties of semiosis can be obtained by replacing Gerard's focus on the material organism with one on semiosis (p. 27).

Sebeok builds a 2X2 table, shown slightly adapted in Figure 1, which he derived from the neurophysiologist Gerard (1960). In view of the discussion below on narrow mechanical concepts of causality, it is interesting to note that Tinbergen only referred to causality in reference to the *behaviour* of animals not their ontogeny or phylogeny. Aristotelian causality is more wide ranging.

In an earlier article Sebeok (1976), referred to Gerard's three categories of 'being, behaving and becoming' (Gerard, 1960), but divided the latter into two parts: phylogeny and ontogeny. In his later discussion Sebeok (1979) briefly cites Huxley (1966), on phylogeny and the ritualization of animal behaviour, but despite mentioning Tinbergen's paper he did not discuss the obvious similarities that the four members of his table have to Tinbergen's questions (Tinbergen, 1963). Nor did he refer to Peirce.

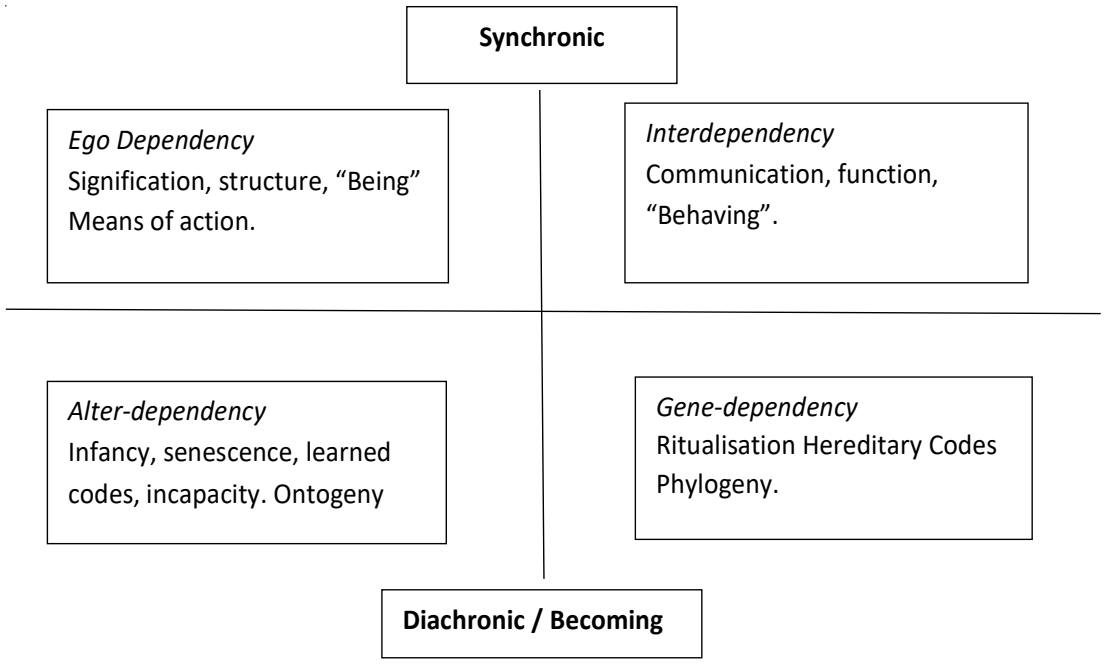


Figure 2: Four Varieties of Semiosis (Adapted from Sebeok, 1979)

Considering the four categories in Table 1, Sebeok's diachronic variety of semiosis, described as 'alter-dependency, infancy, senescence, incapacitation and learned codes', has clear overlaps with Tinbergen's question relating to ontogeny and development and Sebeok refers to this as ontogeny (Sebeok, 1979). Care and development of the young is clearly related to the small family group discussed above in relation to GGT-CT.

Tinbergen's question based on phylogeny relates to Sebeok's set of 'gene dependency, and hereditary codes' where 'ritualization' is understood following Huxley (1966) as the shaping of behaviour under pressure from natural selection, via the genes rather than the personal memory of the organism, in order for emotionally motivated responses to be canalized and made more efficient. And Sebeok's article (1979) labels ritualization as a phylogenetic process. Ceremonial ritual is important in high Group environments (Douglas, 1970) and especially when Grid is also high (Ostrander, 1982).

Of the remaining two 'synchronic' varieties of semiosis, Tinbergen's question about environmental adaptation and purpose seems relevant to Sebeok's set described as 'interdependency, communication, function and behaving'. However, Tinbergen's question about the actions an organism is capable of is harder to connect with Sebeok's rather opaque set, consisting of 'ego-dependency, signification, structure and being'. It is worth noting that Gerard (ibid: 259), referring to processes of becoming, describes the nervous system as the 'star' … 'in the epic of life and change', while Sebeok gives the label 'Becoming' to the two diachronic varieties in his diagram.

More recently, Bateson and Laland (2013) suggest that ontogeny should not be limited to early development but include the life span as well as parental influences framing the infant's environment. They also point out that reproductive fitness is nowadays considered more relevant than mere survival and suggest a focus on 'mechanisms of control' is a better description than 'causation'.

I will take the view that the correspondences to Tinbergen's four questions just listed are too strong to ignore, despite some inconsistencies, and it is useful to consider Tinbergen's four questions apart from Sebeok's diagram.

It is useful to note a remarkable similarity between the themes of Tinbergen's four questions and the four dimensions of power described by Haugaard (2020; 2021), without reference to Tinbergen (Haugaard, 2024). Thus, we have the power to coerce, violence (power through action); structural power and its conflicts (phylogenetic power); Knowledge and consciousness raising (interdependency and communication, meta-power); the genesis of the powerful social subject (ontogeny). There is no space here to discuss this in detail, but if meaning and power are connected (through different rituals controlling social emotions, as GGT-CT proposes) the parallel would not be surprising.

Neo-Durkheimian researchers have proposed a map of power across the four quadrants of the GGT-CT map, citing Haugaard, but without using his model. From what has been said earlier about the relation of Tinbergen's four questions, it follows that these four dimensions of power correspond to the four GGT-CT environments, in order: Low Group, low Grid (individualist); High Group, High Grid (Hierarchist); Low Group, High Grid (Fatalist, Isolate); High Group, Low Grid (Egalitarian). The genesis of a social subject is the last dimension proposed by Haugaard, but he explicitly relates it to ontogeny, stating that the internalization of discipline even begins *'in utero'* in Yurok society (Haugaard, 2021: 168).

10.1. Aristotle's Four Causes – The Persistence of the Four Questions

Tinbergen's four questions have been convincingly compared to Aristotle's 'Four Causes' by Hladký and Havlíèek, (2013, H+H from now on), pointing out the correspondences in the following way, to which I have added suggested correspondences to Peirce's categories:

A. Ontogenetic factors concerning an individual's development from fertilized egg to birth to adult; nurture rather than nature. A concept that potentially encompasses the lifelong development of an individual. Aristotle's Material Cause, relating to the stuff of which a being is composed. Possibility, Firstness.

B. Mechanism, or proximate cause, the forces involved in action. Aristotle's Efficient Cause. Secondness, Indexicality.

C. Phylogenetic causes, concerning historical evolutionary factors that have influenced a species as a whole to evolve in a certain way, independently of its current adaptive function. Aristotle's Formal Cause: the characteristics which make something recognizable as a species or type. Habit, Thirdness.

D. Function, or ultimate causation, the evolutionary processes of adaptation to its environment that have given rise to particular behaviour patterns. Aristotle's Final Cause, involving purpose. Dialogical causality.

The connection *via* Tinbergen to Aristotle's four causes is a potential way to open a wider conception of varieties of causality in relation to semiosis.

Later in the article cited above, Hoffmeyer discusses semiotic freedom, pointing out that certain species that live in fast-changing environments need to adapt to this situation semiotically (Hoffmeyer, 2015). This variety of response recalls the polarity between 'kinetic' and 'static' semiosis proposed above in the cubic model. It is also present in Sebeok's diagram, as a polarity of Synchronic to Diachronic – except that due to the different time scales that Sebeok is interested in my polarity would place his diachronic types as being *more* passive and the synchronic types as *more* kinetic on the shorter time scale of communication processes.

We have seen that Sebeok's biosemiotics typology can be plausibly connected to Aristotle's four causes. In Fiske's theory, four relational models have been identified which bear some similarities with the biological typologies. Thus, Communal Sharing is associated with the nurturing environment of the family; Authority Ranking is analogous to muscular force and energy management and is associated with technical innovation; Equality Matching occurs in sedimented and hierarchical social structures that can be said to be analogous to the phylogenetic structure of social relations, and Market Pricing concerns the way social relations achieve fairness in an impersonal way.

Other simple categories that the ancient philosophers developed persist in the psychological typologies developed by Jung and by Eysenck in their different ways, which both have their roots in the theory of humours of Hippocrates and the four elements of Aristotle. We should remember that the humours were located in the body, not in a detached Cartesian mind. Gaston Bachelard described the four elements as the 'the hormones of the imagination' (Bachelard, 1988).

10.2. Stephen Pepper – Four World Hypotheses

Pepper's Hypotheses, included in Hayden White's sets of quadripartite typologies, are described in Pepper's book (1970). They can be viewed as alternative overarching epistemologies, none of which is completely adequate, according to Pepper, but all are sufficiently adequate to play a part. Pepper considered two other 'hypotheses', Eclecticism and Mysticism, but rejected them as inadequate in precision or in scope (Pepper, 1970). This understanding can be compared to the condition of 'requisite variety' by which each way of organizing social relations depends on the others for justification (Thompson *et al.*, 1990). Each hypothesis is associated with a 'root metaphor' which Pepper considered to encapsulate their essences, but he did not suggest that they form either a cycle or a progression.

A) Formism. Iconic and Metaphorical

The basic root metaphor of Formism is similarity.

The concept of similarity varies depending on the field of data, and it is important to note that in biology it employs the concept of a norm. Thus, while oak trees are not identical in size, shape etc. depending on their environment, they are still recognisably oak trees (Pepper, 1970). This reference to form is a key feature of Tinbergen's Phylogenetic question, not to Ontogeny. However, in Pepper's discussion (1970) he describes the importance of 'simple common-sense' to the Formist hypothesis, and the way that the differences between particulars are less important than the characteristic qualities they have in common. And corroboration of beliefs tends to be the simple variety based on multiple examples rather than structural analysis. In a social context it is plausible that opinions are reinforced simply on the basis that everyone holds a similar view. And socially the most important characteristic that members of a community have is that they are just that: members of the same group and different from the rest of the world.

Both Pepper's Formism and Organicism seem to relate to Phylogeny, leaving no place for Ontogeny, but the simple classification based on similarity is consistent with the idea of a small group boundary between like and unlike, and Rudwick (1982: 229-232, 237) has described a 'Binary' cognitive style associated with scientists working in factional small group environments, and creationists.

For the remaining three hypotheses, I will refer to Lerner's detailed discussion in Ch. 3 of his book (Lerner, 2002) on developmental psychology, because this context gives a clear indication of a progression of adequacy in the development of the Hypotheses, which is absent in Pepper's work.

B) Mechanism. Indexical and Metonymic

The Mechanistic model is based on a metaphor of the machine, and in psychology it is characterized by a taste for reductionism – since all social actions depend on physiological impulses, and they in turn on physico-chemical ones, the world is divisible into one 'real' level out of which the others are elaborated. In psychology this approach eclipsed all others during the peak of the behaviourist movement in the 1950s and it is now being displaced by holistic approaches which are leading to a recognition of the place of semiotics.

In behaviourist psychology the stimuli and responses must be identified, and beyond them their neurochemistry to achieve a complete description. There are no emergent properties, the whole is exactly equal to the sum of its parts, once we get them joined up in the right way. A similar perspective is applied to the relation between genes and behaviour.

The emphasis on technique and results is familiar from the description of the Low Grid Low Group environment, while conflict and causation seem consonant with the Efficient Cause of Aristotle.

C) Organicism. Symbolic and Synecdochal

Quoting Reese and Overton (1970), Lerner (2002, Ch.3: 58), says that for this model, the essence of substance is activity….and the whole constitutes the condition of meaning and existence of the parts…. The important point here is that the efficient cause is replaced by the formal cause. Thus, reductionism is rejected because at each higher organizational level something new comes about (ibid: 58), which is characterized as epigenesis, the emergence of new levels across ontogeny, which are not evident at earlier stages, and where change is qualitative not just quantitative.

Pepper's Organicist Hypothesis takes the organism as its root metaphor but cautions against thinking of it as limited to biological systems. As an analogy, Lerner contrasts the additive combination of parts in Mechanism, with their multiplicative combination in Organicism. While a car can be assembled from its parts correctly articulated, each of which can exist independently, an organism has the extra dimension of having *evolved* into complexity.

Humans are seen as constructors of their world, not passive responders to it, and the pivotal point is the end result, thus implicating teleology and the Final cause as well. Each stage represents a synthesis of the contradictions of an earlier stage (ibid: 61), in other words progression is dialectical.

Unlike Mechanism, true Organicism allows influence to arrive from multiple sources.

Pepper's scheme of hypotheses implies a progressive tendency, which will continue into his model of Contextualism.

The Organicist metaphor seems particularly apt for Tinbergen's Phylogenetic question, where the complete organism has matured and functions in the way determined by its Formal Cause. And in the High Grid – High Group social environment social structure triumphs over the individual and the cardinal virtue is piety (Douglas, 1970).

D) Contextualism. Ironic and Meta-level

Lerner (2002) noted that one problem remained in Organicism – the absence of an active role for time during development. Pepper's root metaphor for contextualism is 'the historic event' … when it is going on in the now, the dynamic, dramatic,

active event, (Pepper, cited in Lerner, p.71). Continuing Lerner's summary, the Contextualist Hypothesis assumes as axiomatic that change is constant at all levels of analysis, and that all levels are embedded one in another. Thus, change does not need to be explained, rather the task of the scientist is to 'describe, explain, and optimize the parameters of *processes*… reflecting relations among the various levels', (Lerner's italics).

In contrast to Organicism, the organism is seen as changing in its environment by transacting with it, and there is no implied future goal which the system must be heading for, but adaptation is the key.

In contrast with Organicism the integrative imperative has been reversed into a dispersive one, so that future states cannot be predicted from purposes or norms. While this makes for obvious difficulties for a model of development, Lerner believes that a probabilistic version of the previous Organicist model can make up the deficiency. However, in the context of our discussion of Tinbergen's Whys, this responsiveness to context is exactly the functional answer, the adaptation of the organism to its context or habitat. And it needs to be a process in 'dialogue' with the organism's own nature or Formal Cause. The Organicist assumption that the structural maturation of the organism determines its function in a uni-directional manner, has changed to admit bi-directional influences (ibid: 73-74).

All this seems quite consistent with the Final Cause, which in Tinbergen's system corresponds with the need to adapt to the circumstances of habitat. In a Low Group – High Grid environment, the rules cannot be negotiated, but they can be navigated, and the best way to do this is to be open to all kinds of communication, to news about changing circumstances by talking to as many people as possible.

10.3. Christopher Alexander - Designing a Social World from Micro Needs

One study that is little known in semiotics, or in social anthropology, but is very valuable for the present context was derived empirically by the architect Christopher Alexander, in his book *Notes on the Synthesis of Form* (1964). It is relevant because it shows how a very simple analysis of the relations between the micro-requirements of a large system automatically generated a structure at the macro-level which falls into four groups that are homologous to those found by Tinbergen in biology, and Fiske in social systems – *without these being part of his theoretical perspective*.

Alexander used a simple computer algorithm, which takes a list of needs reported by his informants and analyses every possible pair simply in terms of whether they were described by the informants as: A) compatible and valued, in which case he weighted them as +1, B) neutral valued as 0, or C) incompatible valued as -1. As a test case he considers a design for a village in India, based on a list of 141 such requirements which the villagers described to him during extensive interviews.

The outcome of his analysis embodies social as well as economic requirements, and produced the following four clusters:

A) The need for intimate private space for families and religious practices, a sentimental attachment to tradition; storing food, sanitation; separation by caste; family solidarity; assistance for handicapped members; opportunities for men's and women's groups to chat; safe children's play areas.

B) The need for a space for storage of materials and means of transport – in practice bullock carts; improvement and disinfection of cattle; efficient use and marketing of dairy products; efficient distribution of fertiliser; protection of crops from thieves. A simple technical service to improve efficiency.

C) An organised space for collective food production and other labour; presence of demonstration methods for improved agriculture so as to teach by example; efficient distribution of seeds and fertiliser; protection of crops from weeds and disease; minimising transportation costs; respect for traditional agricultural practices; co-operative farming; best irrigation distribution through joint ownership; soil conservation through single ownership of large plots; fair distribution of land in conjunction with inheritance laws; reclamation of uncultivated land; tree planting to control erosion.

D) A public space for socialising, where people can meet those from other families in an informal way; space for processions; need for elaborate weddings; marriages between people from different villages; simplify labour mobility between villages; diversification of economy; access to bus and rail transport; lighting; access to schools; developing projects open to government subsidy; transport connections, schools and hospitals at district level; religious festival provisions; ability to allow different political factions to remain separate; marketing of goods; information about health and birth control; radio communications; destroy selfishness and isolationism. In short, interdependency as described by Sebeok.

It is remarkable that such very simple modelling based on meeting as many day-to-day requirements as possible, has produced four groupings with such clear signatures. It supports the idea that a fundamental logical or cognitive structuring is operating.

Alexander's model comes from a strictly Functionalist perspective, where the relations between a set of practical micro-requirements are what creates the tree structure that most efficiently divides into these four main branches. He concludes that a modular structure is the best compromise between integration and adaptability to change, a point which is also brought out by Fiske (2005), pointing out that extreme specialization of brain functions is evolutionarily costly, as well as inflexible.

10.4. Barbieri on Biological Codes

A controversial approach to signs relies on codes. Barbieri (2009) suggests that bio-semiosis, can only be understood by replacing Peirce's triad of Rft – Sr – Interpretant by Rft – Code – meaning.

In his description, there are a total of three varieties of biological semiosis, plus 'copying'.

1) Copying is the only one that he says is a 'natural' semiosis, which just involves selection of letters to compose a message in a one-to-one correspondence with a source. But in linguistics, selection of a different word could produce either a nonsense or a metaphor.
2) Signalling semiosis is the transmission of messages across cell boundaries, and thus implies force and contiguity as in metonymy.
3) Manufacturing Semiosis is the building of macromolecules under the control of the Ribosome. Assembly of a whole with careful regard to how its parts connect seems closely related to both an Organicist mode of thought and to making the parts belong to the whole in which they function.
4) Interpretive Semiosis is context dependent and is the only one covered by Peirce's definitions.

Barbieri's discussion (2009a, b) makes it clear that what he calls signalling semiosis depends on the existence of signs previously manufactured so, in this sense it is not a simpler stage that can be likened to metonymy. He is concerned not so much with the general transmission of signals between cells, but of a specific type which involves the production of signs controlling protein synthesis in a two-stage process involving intracellular messenger molecules. Nevertheless, it is striking how a similar set of four themes pervades his model processes.

10.5. The Four Tissue Types. (Molnar and Gair 2015)

These are widely accepted in standard biological textbooks. Here given in the same order

A, B, C, D as above and in correspondence with the columns of Table 1.

A – Epithelial – found at the boundaries between inner and outer, in the gut and the lung.

B – Muscular – the transmitters of force by contact, including using the skeleton as a system of levers.

C – Connective – the structure on which the organism is supported, bone, cartilage and blood.

D – Nervous – the means of control and communication.

10.6. The Modal Verbs

In the Latin languages, these are (using Italian as an example):

A – Potere – to be able, possibility.

B – Volere – to will or promise.

C – Dovere – to have to, to be obliged to.

D – Sapere – to know, to know how to.

I have used the letters A – D to suggest how they correspond to the typologies discussed above, and there seems to be an uncanny similarity, even though there is no sequential relation in their definition. Thus, A starts with Firstness; B is obviously associated with action and force; C implies an individual bound by larger forces or commitments in a synecdochal bear hug; and D, knowing, suggests a detached analysis from another level.

They also seem to embody the essential themes of Haugaard's theory of the four dimensions of power discussed above: B: force, C Structural, D knowledge, and A the power within the subject.

11. Future Development and Conclusion

Any empirical testing of these suggestions requires a well-funded research programme, and questionnaire methods have already revealed some procedural difficulties (see Ostrander, 1982). However, the analysis of syllogisms to measure the progress of institutionalization by Green *et al*. (2009) suggests that techniques can be developed for defined environments, employing characteristics of sign usage such as connotation and denotation, the use of condensed symbols as described by GGT in high Group environments.

There also seems to be a connection to develop between discourse analysis in the SFL tradition as developed by Martin (Martin, 1997; Martin and Rose, 2009) and the kind of data relevant to studying ritual by Perri 6.

The cube is a model of the varieties of sign within a Peircean perspective, and as a model it should suggest further developments.

A point that has been glossed over here is that both Cultural Theory and Relational Models Theory also point to a fifth type, the 'Hermit's voice' in Cultural Theory (Douglas, 1978). Fiske doesn't come to a conclusion about what he calls 'asocial relationships' (Fiske, 1992, and because his model is not dimensional but based on distinct clusters, there is no 'zero point' of social interaction at the centre of a two-dimensional map where the asocial type could be located. Another perspective on the asocial type is offered by Bolender (2010), who describes the social relation of 'Oceanic Merging (OM)' which he links to mysticism, where social constraints and preferences disappear as the person becomes part of a single human unity. In such a situation, do signs even exist?

Bolender's book – with an introduction by Fiske – adopts a different mathematical perspective, more common in physics – in which he focuses on progressive decreases in symmetry of social systems, starting from OM and following Fiske's sequence to MP.

Relational Models cannot be applied across cultures without first finding what Fiske calls the 'preos' – the parameters that a given social environment has which determine where, when and with whom a given relational model will be implemented (Fiske, 2005). Once this is done the models can be tested empirically. This reference to 'preos' is interesting for the way it suggests the influence of social conventions of communication, and hence of semiosis. To study the use of signs in different social situations, clearly requires some preliminary analysis.

There is also the question of how to orient the tetrahedron with the axes of signification – is a vertex, a point, really the best way to represent a mode (or a mood), when the figure also has four faces available? In the tetrahedron each vertex has a face across the opposing corner of the cube that surrounds it, so by reversing the polarity of the axes in Fig. 1 each variety can be represented by a face instead. Doing this shifts the image of the model from representing four fixed signs to four regions of signifying space, which may be more appropriate.

Another issue is that there are two possible tetrahedra which can be constructed within the cube, what do they signify? I have chosen one of them on the basis that the genuine sign needs to be at the low end of all three scales of motivation, but there is another tetrahedron that can be drawn using the remaining four points of the cube.

The conflict between Cartesian dualism and embodied mind is a crucial interest of biosemiotics it is interesting to note that some of the sociological typologies discussed above predict that this is a fundamental conflict which should itself have a social dimension – there is no reason to think it will end when Descartes' theory is sent to the epistemological graveyard.

This is especially clear in the treatment of cosmology in Cultural Theory (Thompson *et al*., 1990). Thus, in sector B the common cosmology is one in which humanity dominates and 'should' dominate nature, while in sector C man and nature are supposed ideally to form a seamless whole. In sector A society is seen as part of nature as in C but now nature is regarded as threatening, while in sector D the two are separate as in B, but cosmology is fatalistic rather than self-assured as in B.

Acknowledgment

The revised version of this paper has benefitted greatly from the many comments generously offered by Professor Perri 6.

I am grateful to Professor Brendon Swedlow and Dr. Michael Thompson for helpful suggestions and references, and to Professor Robert Marty for the same plus a PDF of Peirce's Collected Papers. Professor J.R. Martin commented briefly in response to my query on interactions between Field, Tenor and Mode in Systemic Functional Linguistics. Dr. Michael Pepperday also offered comments.

Funding

No funding was received for this work.

References

Perri 6. (2002). What is There to feel? A Neo-Durkheimian Theory of the Emotions, *European Journal of Psychotherapy and Counselling*, 5(3), 263-290.

Perri 6. (2007). Rituals Elicit Emotions to Define and Shape Public Life. In 6 Perri, Radstone S., Squire C., Treacher A. (eds.), *Public Emotions*, Chapter 1, 37-61. London: Palgrave Macmillan.

Perri 6. (2014). Elementary Forms and Their Dynamics: Revisiting Mary Douglas. *Anthropological Forum*, 24(3), 287-307.

Perri 6. (2016). How 'Natives' Work: Political Judgement and Cohesion Through Ritual Interaction Among Ministers. *Public Administration*, 94 (4), 1005-1022.

Perri 6. (2022). Robust, Resilient, Agile and Improvisatory Styles in Policymaking: The Social Organisation of Anomaly, Risk and Policy Decay. *Policy and Politics*, XX(XX), 1-19.

Alexander, Christopher (1964). *Notes on the Synthesis of Form.* Cambridge Massachusetts and London, England: Harvard University Press.

Almurashi, Wael Abdulrahman (2016). An Introduction to Halliday's Systemic Functional Linguistics. *Journal for the Study of English Linguistics*, 4(1), 70-80.

Aubin, David (1997). The Withering Immortality of Nicholas Bourbaki: A Cultural Connection at The Confluence of Mathematics, Structuralism and the Oulipo in France. *Science in Context*, 10(2): 297-342.

Bachelard, Gaston (1988 [1943]). *Air and Dreams: An Essay on the Imagination of Movement.* Translated by Edith R. and C. Frederick Farrell. Dallas: Dallas Institute Publications.

Bacon, Francis, (2017 [1620]. *The New Organon: or True Directions Concerning the Interpretation of Nature*. Copyright Jonathan Bennett. Available at https://www.earlymoderntexts.com/assets/pdfs/bacon1620.pdf

Barbieri, Marcello (2009). Three Types of Semiosis. *Biosemiotics*, 2, 19-30.

Barbieri, Marcello (2015). *Code Biology: A New Science of Life*. Springer, Berlin and New York.

Barthes, Roland 1967 [1964]. *Elements of Semiology.* Translated from French by Annette Lavers and Colin Smith. London: Jonathan Cape.

Bateson, Patrick and Laland, Kevin N. (2013). Tinbergen's Four Questions: An Appreciation and an Update. *Trends in Ecology and Evolution*, 28(12), 712-718.

Bernstein, Basil (1974). *Class, Codes and Control, Volume 1: Theoretical Studies Towards a Sociology of Language.* Second Edition, London RKP.

Binder, Werner (2018). The Semiotics of Social Life. *American Journal of Cultural Sociology,* 6, 401-416.

Bloor, David (1982). Polyhedra and the Abominations of Leviticus: Cognitive Styles in Mathematics. Chapter 9 in M. Douglas (ed.), *Essays in the Sociology of Perception.* London: Routledge and Kegan Paul.

Bolender, John (2010). *The Self-Organizing Social Mind.* Cambridge MA: MIT Press, a Bradford book.

Bortoft, Henri (1998). *Goethe's Scientific Consciousness.* London: The Institute for Cultural Research, Monograph Number 22.

Brier, S. (2015a). Can Biosemiotics be a "Science" if its Purpose is to be a Bridge Between the Natural, Social and Human Sciences?, *Progress in Biophysics and Molecular Biology*. Available at http://dx.doi.org/10.1016/j.pbiomolbio.2015.08.001

Brier, S. (2015b). Cybersemiotics and the Reasoning Powers of the Universe: Philosophy of Information in a Semiotic-Systemic Transdisciplinary Approach. *Green Letters: Studies in Ecocriticism*, 19(3), 280-292. Available at http://dx.doi.org/10.1080/14688417.2015.1070684

Buczynska-Garewicz, Hanna (1979). The Degenerate Sign. *Semiosis*, 13, 5-15. Reprinted in *Semiotics Unfolding. Proceedings of the Second Congress of the International Association for Semiotic Studies, Vienna*, July 1979, Borbé, Tasso (ed.). Volume 68 in the Series Approaches to Semiotics.

Bühler, Karl (1934). *Sprachtheorie. Die DarStellungsfunktion der Sprache*. Stuttgart: Gustav Fischer Verlag.

Burke, Kenneth (1969). *A Grammar of Motives*, pp. 503-517, Appendix D: Four Master Tropes. Berkeley: University of California Press.

Cerroni, A. and Simonella, Z. (2014). Scientific Community Through Grid-group Analysis. *Social Science Information*, 53(1): 119-138.

Chandler, Daniel (2002). *Semiotics: The Basics,* Abingdon: Routledge.

Clements, Matthew (2018). *A World Beside Itself: Jakob von Uexküll, Charles S. Peirce, and the Genesis of a Biosemiotic Hypothesis*. Unpublished thesis. Birkbeck College, University of London. Free download available at: https://eprints.bbk.ac.uk/id/eprint/40338/

Cobley, Paul (2016). Cultural Implications of Biosemiotics. *Biosemiotics,* Vol 15. Dordrecht: Springer Science + Business Media.

D'Angelo, Frank (1992). The Four Master Tropes: Analogues of Development. *Rhetoric Review*, 11(1), 91-107.

Daniel, E. Valentine (1987). *Fluid Signs*, Berkeley: University of California Press.

Daniel, E. Valentine (2017). Tropics of Invention. *Rhetoric Review*, 36(3), 200-213.

Deacon, Terrence W. (1997). *The Symbolic Species*. New York, W.W. Norton.

De Saussure, Ferdinand (1966 [1916]). *Course in General Linguistics*. Translated by Wade Baskin. New York, Toronto and London: McGraw-Hill.

Douglas, Graham (1997). Greimas's Semiotic Square and Greek and Roman Astrology. *Semiotica*, 114(1/2), 1-19.

Douglas, Graham (2000). Catastrophes in Semantic Space: Signs of Universality. *Semiotica*, 132 (3/4), 179-280.

Douglas, Mary (1970). *Natural Symbols.* Harmondsworth: Penguin.

Douglas, Mary (1978). *Cultural Bias*. London: Royal Anthropological Institute, Occasional Paper 35.

Douglas, Mary (ed.). (1982). *Essays in the Sociology of Perception,* London: Routledge and Kegan Paul.

Douglas, Mary (ed.). (1986a). *How Institutions Think*. London: Routledge.

Douglas, Mary (ed.). (1986b). *Thought Styles: Critical Essays on Good Taste.* Thousand Oaks, California: Sage Publications.

Dumont, Louis (1966, [1981]). *Homo Hierarchicus. The Caste System and its Implications.* Chicago: University of Chicago Press.

Favareau, Donald (2008). The Evolutionary History Of Biosemiotics in: M. Barbieri ed., *Introduction to Biosemiotics,* 1-67. Springer Science + Business Media B.V.

Favareau, Donald (2015). Why this now? The cOnceptual and Historical Rationale Behind the Development Of Biosemiotics. *Green Letters: Studies in Ecocriticism,* 19(3). Special Issue: Biosemiotcs and Culture, Wheeler, Wendy; Westling, Louise (eds.).

Favre M., Swedlow B. and Marco Verweij (2019). A Cultural Theory And Model Of Power Relations. *Journal of Political Power,* 12(2), 245-275.

Fiske, Alan Page (1991, 1997). *Structures of Social Life: The Four Elementary Forms of Human Relations.* New York: Free Press.

Fiske, Alan Page (1992). The Four Elementary Forms of Sociality: Framework for a Unified Theory of Social Relations. *Psychological Review* 99(4), 689-723.

Fiske, Alan Page (2005). In Nick Haslam (Ed.) *Relational Models Theory: A Contemporary overview*. Chapter 3: 60-98.

Frye, Northrop (1957). *The Anatomy of Criticism: Four Essays.* Princeton: Princeton University Press.

Gerard, R.W. (1960). Becoming: The Residue of Change. In *Evolution after Darwin II*: 255-267. Edited by Sol Tax. Chicago: University of Chicago Press.

Goffman, Erving (1974). *Frame Analysis: An Essay on the Organisation of Experience.* New York: Harper and Row.

Green, Sandy E, Li, Yuan and Nohria, Nitin (2009). Suspended in Self-Spun Webs of Significance: A Rhetorical Model of Institutionalization and Institutionally Embedded Agency. *Academy of Management Journal*, 52(1), 11-36.

Green, Sandy and Li, Yuan (2011). Rhetorical Institutionalism: Language, Agency and Structure in Institutional Theory Since Alvesson 1993. *Journal of Management Studies,* 48(7), 1662-1697.

Halliday, M.A.K. (1969). Relevant Models of Language. *Educational Review,* 22(1), 26-37.

Halliday, M.A.K. (1974). In (Herman Parret, Ed.) *Discussing Language.* Dialogues with Wallace L. Chafe, Noam Chomsky, Algirdas J. Greimas, M. A. K. Halliday, Peter Hartmann, George Lakoff, Sydney M. Lamb, André Martinet, James Mcawley, Sebastian K. Saumjan, and Jacques Bouveresse.

Halliday and Hasan (1989). *Language, Context, and Text: Aspects of language in a social-semiotic perspective*. Oxford, OUP.

Harris, R.A. (2013). The Fourth Master Trope. Conference presentation, Canadian Society for the Study of Rhetoric, University of Victoria.

Harris, R.A. (2019). The Fourth Master Trope: Antithesis. *Advances in the History of Rhetoric,* 22(1), 1-26.

Haugaard, Mark (2020). *The Four Dimensions of Power: Understanding domination, Empowerment and Democracy.* Manchester: Manchester University Press.

Haugaard, Mark (2021). The Four Dimensions of Power: Conflict and Democracy. *Journal of Political Power,* 14 (1), 153-175.

Haugaard, Mark (2024). The Author Confirmed That His Model Was Not Influenced By Tinbergen's Four Questions. Personal Communication.

Hladký, V. and Havlíèek, J. (2013). Was Tinbergen an Aristotelian? A comparison of Tinbergen's four questions with Aristotle's four causes. *Human Ethology Bulletin* 28 (4)*, Special Issue on Tinbergen.*

Hoffmann, Michael H.G. and Roth, Wolff-Michael (2010). Four Functions Of Signs In Learning And Inter-disciplinary Collaboration. In: *Semiotics – Education – Experience,* Semetsky, I. (Ed.): 131-150. Boston: Sense Publishers.

Huxley, Julian (1966). A Discussion of Ritualization of Behaviour in Animals and Men. *Philosophical Transactions of the Royal Society of London*, 251, 247-526.

Jakobson, Roman (1956). Two Aspects of Language and Two Types of Aphasic Disturbances, in R. Jakobson and M. Halle (Eds.), *Fundamentals of Language,* The Hague: Mouton, 53-82.

Jakobson, Roman (1960). Closing Statement: Linguistics and Poetics. In Thomas A. Sebeok (Ed.) *Style in Language*, 350-377. Bloomington: Indiana University Press.

Johansen, J.D. (1993). *Dialogic Semiosis: An Essay on Signs and Meaning.* Advances in Semiotics (Ed. Thomas Sebeok). Bloomington IN: Indiana University Press.

Keane, Webb (2018). Semiotic Ideology. *Signs and Society,* 6 (1), 64 - 87.

Kristeva, Julia (1974). *La Revolution du Langage Poètique: L'avant-garde à la fin du XIXe Siècle. Revolution in Poetic Language.* Translated by Margaret Waller. New York: Columbus University Press.

Kruse, Felicia E. (1990). Nature and Semiosis. *Transactions of the Charles S. Peirce Society*, 26(2): 211-224.

Kruse, Felicia E. (1991). Genuineness and Degeneracy in Peirce's Categories. *Transactions of the Charles S. Peirce Society*, 27(3), 269-278.

Kull, Kalevi (1998). Semiotic Ecology – Different Natures in the Semiosphere. *Sign Systems Studies*, 26(1), 344-371.

Kull, Kalevi (2020). Steps Towards the Natural Meronomy and Taxonomy of Semiosis: Emon Between Index And Symbol?. *Sign Systems Studies,* 47(1/2), 88-104.

Kull, Kalevi (2023). Freedom in Living Beings: Arbitrariness and the Forms of Semiotic Indeterminacy. *Open Semiotics*, 4, 81-97.

Land, Christopher (2005). Apomorphine silence. *Ephemera*, 5(3), 450-471 https://ephemerajournal.org/sites/default/files/5-3land.pdf

Lerner, R.M. (2002). *Concepts and Theories of Human Development,* 3rd Edition. New York: Lawrence Erlbaum.

Li, Yuan (2017). A Semiotic Theory of Institutionalization. *Academy of Management Review,* 42(3), 520-547.

Lyne, J.R. (1980). Rhetoric and Semiotic in C.S. Peirce. *Quarterly Journal of Speech,* 66(2), 155-168.

Maleki, Ammar and Hendriks, Frank (2014). Grid, Group, and Grade: Challenges in Operationalizing Cultural Theory for Cross-national Research. *Cross-cultural Research,* 49(3), 1-31. Online: http://ccr.sagepub.com/content/early/2014/10/23/1069397114555843

Malinowski, Bronislaw (1923). The Problem of Meaning in Primitive Languages. In Ogden and Richards, *The Meaning of Meaning* (see below), Appendix I, 296 - 336.

Mannheim, Karl (1936). *Ideology and Utopia: An Introduction to the Sociology of knowledge.* London: Routledge and Kegan Paul.

Marshall, D.L. (2010). *Vico and the Transformation of Rhetoric in Early Modern Europe.* Cambridge: Cambridge University Press.

Martin, J.R. (1992). *English Text System and Structure.* New York: Benjamins.

Martin, J.R. (1997). Analysing Genre: Functional Parameters, in F. Christie and J. Martin (Eds.): *Genre and Institutions*, pp. 3-39. London: Cassell.

Martin, J.R. (2023). Personal Communication, December 3rd.

Martin, J.R. and Rose, D. (2009). *Genre Relations: Mapping Culture.* London: Equinox.

Marty, Robert (2019). The Trichotomic Machine, *Semiotica,* 228, 173-192.

Marty, Robert (2021). The Podium of Universal Categories and their Degenerate Cases. Available at https://www.researchgate.net/publication/352641475_The_Podium_of_Universal_Categories_and_their_degenerate_cases

Marty, Robert (2024). Personal Communication.

Mead, George Herbert (1934). *Mind, Self and Society from the Standpoint of a Social Behaviorist.* Introduced by Charles W. Morris (ed.). Chicago: University of Chicago Press.

Mertz, Elizabeth (2007). Semiotic Anthropology. *Annual Review of Anthropology,* 36, 337-353.

Molnar, Charles; Gair, Jane (2015). *Concepts of Biology* – 1st Canadian Edition, Chapter 14.2. Available online under Creative Commons Attribution 4.0. https://opentextbc.ca/biology/chapter/14-2-animal-primary-tissues/

Monticelli, Daniele (2016). Critique of Ideology or/and Analysis of Culture? Barthes and Lotman on secondary semiotic systems. *Sign Systems Studies* 44(3), 432–451.

Morris Charles W. (1938). Foundations of the Theory of signs. In: *International Encyclopedia of Unified Science,* Volume 1, number 2.

Morris Charles W. (1946). *Signs, Language and Behavior.*

Morris Charles W. (1969 [1964]). *Signification and Significance,* Cambridge, Mass: M.I.T. Press.

Mulligan, K. (2012). Toward a Working Definition of Emotion. *Emotion Review*, 4 (4), 345-357.

Needham, Rodney. (1975). Polythetic classification: convergence and consequences. *Man* 103: 349-369.

Ness, Sally and Coleman, Steve (2018). Semiotics in Ethnography and Anthropology, in (Ed. Jamin Pelkey), *Bloomsbury Companion to Semiotics*, London: Bloomsbury Press.

Nowacki, M.R. (2007). A Critique of Cultural Theory's Impossibility Theorem. *Innovation: The European Journal of Social Research*, 17, 325-347.

Ogden, C.K. and Richards, I.A. [1923], (1989). *The Meaning of Meaning,* London: Harcourt Brace Jovanovich.

Osgood, C.E., Suci, G.J. and Tannenbaum, P.H. (1957). *The Measurement of Meaning*. Chicago: University of Illinois Press.

Ostrander, David. (1982). One- and Two-dimensional Models of the Distribution of Beliefs. In Douglas, Mary (ed): *Essays in the Sociology of Perception,* 14-30.

Parmentier, Richard, J. (1985). Diagrammatic Icons and Historical Processes in Belau. *American Anthropologist,* 87, 840-852.

Parmentier, Richard, J. (1994). *Signs and Society: Further Studies in Semiotic Anthropology.* Bloomington: Indiana University Press.

Peirce, Charles Sanders (1958). *The Collected Papers*. Volumes 7 & 8, Burks, Arthur (ed.). Cambridge MA: Harvard University Press. Vol.8: 315. Referenced here by CP, followed by the volume and page number.

Peirce, Charles Sanders (1977) [1909]. *Semiotic and Significs: The Correspondence between Charles S. Peirce and Lady Welby*. Edited by Charles S. Hardwick. Bloomington: Indiana University Press.

Peirce, Charles Sanders (1984). *Writings of Charles S. Peirce. A Chronological Edition, Vol. 2 1867-1871.* Edited by The Peirce Edition Project, Bloomington, IN: Indiana University Press.

Peirce, Charles Sanders (1992). A Guess at the Riddle. In: *The Essential Peirce: Selected Philosophical Writings: Vol.1, 1867- 1893*, The Peirce Edition Project (ed.). Bloomington, IN and London: Indiana University Press: p. 248.

Pepper, Stephen (1970) [1942]. *World Hypotheses,* Berkeley: California University Press.

Pepperday, Michael Edward (2009). *Way of Life Theory: The Underlying Structure of Worldviews, Social Relations and Lifestyles.* Ph.D Thesis, Submitted to Australian National University.

Rayner, Steve (1982). The perception of time and space in Egalitarian sects: A millenarian cosmology. In M. Douglas (Ed.) *Essays in the Sociology of Perception.* London: RKP.

Reese, H.W.; Overton, W.F. (1970). Models of development and theories of development, Chapter 5 in *Life Span Developmental Psychology*, 115-145. Edited by L.R. Goulet and P.B. Baltes. Amsterdam: Elsevier.

Richards, Paul (2010). Ritual dynamics in humanitarian assistance. *Disasters,* 2010, 34(S2), S138-S146. Journal compilation © Overseas Development Institute, 2010 Published by Blackwell Publishing, Oxford.

Robinson, R. and Swedlow, B. (2018). Beyond Liberal and Conservative: Advancing the Study of Judicial Behavior with a Cultural Theory of Political Values. *Journal of Law and Courts,* 6(2), 263 – 302.

Rudwick, Martin (1982). Cognitive Styles in Geology. In: Douglas, Mary (ed.), *Essays in the Sociology of Perception*, 219-241. London: RKP.

Salais, Robert and Storper, Michael (1992). The Four Worlds of Contemporary Industry. *Cambridge Journal of Economics,* 16, 169-193.

Schneider, Herbert W. (1952). *Studies in the Philosophy of Charles Sanders Peirce*. Chapter 16: *Fourthness.* Available at (paywall): https://www.degruyter.com/document/doi/10.4159/harvard.9780674862906.c20/html

Sebeok, Thomas A. (1976). Contributions to the Doctrine of Signs. In Sebeok (Ed.): *Studies in Semiotics,* 5, 26-27, 72, 98, 140. Bloomington, IN: Indiana University.

Sebeok, Thomas A. (1979). Semiotics and Ethology. In *The sign and its Masters*, Chapter 2: 28-35. Austin and London: University of Texas Press.

Schmutzer, M.E.A. and Bandler, W. (1980). Hi and Low – In & Out: Approaches to Social Status. *Journal of Cybernetics*, 10, 283-299.

Shotter, John and Lock, Andy (2012). Sixth Sense, Second Nature, and Other Cultural Ways of Making Sense of Our Surroundings: Vygotsky, Bernstein, and the Languaged Body**.** In Daniels, H. (ed.), *Vygotsky and Sociology*. London & New York: Routledge, pp. 61-79.

Sillince, John A.A. and Barker, James R. (2012). A Tropological Theory of Institutionalization. *Organization Studies,* 33(1): 7–38.

Smith, Karl. (2012). From dividual and individual selves to porous subjects. *The Australian Journal of Anthropology* 23, 50-64.

Stevens, S.S. (1946). On the Theory of Scales of Measurement. *Science, New Series*, 103(2684), 677-680. (Jun. 7, 1946).

Swedlow, Brendon (2012). Cultural Coproduction of Four States of Knowledge. *Science, Technology & Human Values,* 37(3), 1-29.

Tappolet, C. (2015). Value and Emotions, in Iwao Hirose and Jonas Olson (eds), *The Oxford Handbook of Value Theory*, New York, Oxford University Press

Thompson, Michael, Ellis, Richard, J., Wildavsky, Aaron (1990). *Cultural Theory.* Boulder, CO: Westview.

Thompson, Michael, Ellis, Richard, J., Wildavsky, Aaron (2008). *Organizing & Disorganizing: A Dynamic and Non-Linear Theory of Institutional Emergence and its Implications.* Charmouth: Triarchy Press.

Tinbergen, Niko. (1963). On Aims and Methods of Ethology. *Zeitschrift für Tierpsychologie,* 20, 410-433.

Van der Leeuwen, Theo. (2005). *Introduction to Social Semiotics,* London: Routledge.

Verweij, M, Sheghua, L. and Nowacki, M. (2011). How to Test Cultural Theory: Suggestions for Future Research. *Political Science and Politics*, 44(4), 745-748.

Verweij, Marco, Alexandrova, Petya, Jacobsen, Henrik; Béziat, Pauline, Branduse, Diana, Dege, Yonca, Hensing, Jakob, Hollway, James, Kliem, Lia, Ponce, Gabriela, Reichelt, Inge, Wiegmann, Mareile. (2020). Four Galore? The overlap Between Mary Douglas's Grid-Group Typology and Other Highly Cited Social Science Classifications. *Sociological Theory,* 38 (3), 1-32.

Viola, Tullio (2011). Philosophy and the Second Person: Peirce, Humboldt, Benveniste and personal pronouns as universals of communication. *Transactions of the Charles S. Peirce Society,* 47(4), 389-420.

West, Donna E. (2012). The Semiosis of Indexical Use: From Degenerate to Genuine. *American Journal of Semiotics,* 28 (3-4), 301-323.

West, Donna E. (2013). Cognitive and Linguistic Underpinnings of *Deixis am Phantasma:* Buhler's and Peirce's semiotic. *Sign System Studies,* 41(1), 21-41.

Wheeler, Wendy. (2016). *Expecting the Earth: Life, Culture, Biosemiotics,* London: Lawrence and Wishart.

White, Hayden. (1973). *Metahistory,* Baltimore, Johns Hopkins University Press.

Wildavsky, Aaron. (2006). *Cultural Analysis: Politics, Public Law, and Administration*, B. Swedlow (ed.). New Brunswick, NJ: Transaction.

Zumthor, P. (1972). *Poétique Mèdiévale.*

Cite this article as: Graham Douglas (2024). Degenerate Signs and Cultural Bias. *International Journal of Languages and Culture.* 4(2), 1-33. doi:10.51483/IJLC.4.2.2024.1-33.