

## **Theory of Complex Communication\***

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### **Resumo**

*A teoria interdisciplinar da comunicação pode contribuir para uma teoria de complexidade em contextos capazes de análise empírica (p.ex. comunicações em hospitais, entre pilotos e torres de controle ou entre plataformas de perfuração e mergulhadores) na medida em que oferece uma modelagem de processos comunicacionais como processos complexos e instáveis. A instabilidade – ou contingência da comunicação – deriva, por sua vez, da complexidade do agente (autonomia cognitiva), da complexidade da interação intra-sistêmica bem como extra-sistêmica e da complexidade da relação de referência entre a comunicação e o real assim como entre a comunicação e sujeitos (agentes). Neste sentido, este artigo oferece uma teoria da comunicação complexa, utilizando fontes interdisciplinares tais como o construtivismo radical, a teoria dos sistemas, a lógica vaga e a semiótica.*

**Palavras-chave:** *Comunicação, Complexidade, Teoria Social, Contingência.*

### **1 – Introduction: the objects, theory, scope of interdisciplinary communication theory**

Like complex ergonomics, interdisciplinary communication theory shares a commitment to a “better articulation between the social sciences and engineering” (Vidal, Gomes, Tenchekroun, 2001, p.14). There are common objects of analysis (interactions between humans and other elements of a system<sup>1</sup>) and common theoretical instruments (such as complexity theory) which seek to take account of the contingencies of human experience, although arguably a slightly different scope in as much as interdisciplinary communication theory comprises an integrated approach to the articulation of environmental, cognitive, organizational and social factors from the point of view of communication and not physicality (cf. Vidal, Gomes, Tenchekroun, 2001, p.12-13).

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<sup>1</sup> This is the definition of ergonomics approved by the Scientific Council of the International Ergonomics Association (IEA) in San Diego, 2000.

If the relationship between complexity and communication were stable, there would be no need to conceptualise complexity in communication and the relationship would become a tautology. Since each sign alone appears to be dead and “breathes through use” as Wittgenstein said, instability can be considered an irreducible factor of communication. A theory of communicative instability as a theory of complex communication thus examines contingency on a series of levels, ranging from cognitive aspects to social organization, including subsystems. In this sense, a theory of complex communication offers points of contact with organizational and cognitive ergonomics. Since the relationship between cognitive factors and organizational factors is also characterized by communications, a theory of complex communication can be seen as contributing to the debate over the modes of communicative interactions between human agents in an environment of complex systems (see Vidal, Gomes and Benchechrout, 2001, p.12-13). And given the complexity of such an environment, the multiple contingencies of communications require an adequate theoretical modelling. A theory of complex communication adopts as its object of analysis more than simply an iterability of structures (see Derrida); instead, it must take account of a dynamic and vague theory of communicative signs. In other words, communication does not merely take place as a stable factor in an otherwise complex environment, as some theorists presuppose; rather, *communication is itself a factor of complexity* which can only ever be stabilised momentarily for the purposes of interaction. This interaction obeys functional requirements rather than a universal logic. From this point, then, it is possible to elaborate a theory of complex or *porous* communication (see Grant, 2000a, 2000b, 2001b) without recourse to transcendental codes (Habermas, 1999).

The following article seeks to sketch an answer to the question: “What does it mean that communication has itself become complex?” (Leydesdorff, 2001, 170). The aim is to recognize the contingency (and thus the paradoxical complexity of contact and instability) on three levels, namely cognition, communication and social systems. By recognizing social interaction not in ontological terms, but instead in functional terms and without recourse to transcendental epistemology, theoretical and empirical gains can be made. Here, the concept of fictionality is important. It can be used in the empirical context of the contingency of communicative interactions within social systems and subsystems, for example, in ‘closed’ communication contexts, in contexts of communication ‘dysfunction’ and in contexts of communication risk. These are, potentially at least, of interest in the field of ergonomics.

Thus, a theory of complex communication represents a theoretical turn: if Wittgenstein introduced the linguistic turn, now we are faced with the communicative turn (Leydesdorff). What are its characteristics? On the epistemological level, the communicative turn stresses the self-referentiality of the functional differentiation of communication *systems*. Three movements are therefore characteristic of this turn: 1. Communication, in simplified heuristic terms, is distinct and derived from semantics. Contingencies of a semiotic, semantic, pragmatic and cognitive character are differentiated with greater rigour from logical and syntactic determinations. 2. The concept of *reference* in social terms must also be problematized and enriched by paying greater attention to the fractal relationship between communication and “the reality” (cf. Schmidt, 2001). 3. The category of reality must also be problematized. The clear interdisciplinary connections derive from a fundamental question: the exploration of the problematic status of meaning and reference since Shannon and Weaver, theories of deconstruction, theories of social systems and constructivist theories.

This article seeks to examine the (radical) implications of interdisciplinary communication theories for our intuitive, dialogical understanding of interaction (see also Grant, 1997). Three areas are to be considered in this interdisciplinary modelling of communicative interaction: cognition, communication and context (society). In part one, the concepts of reference and self-reference will be explored in constructivist terms. In essence, it will be argued that if cognition is a self-referential operation as opposed to one in which reference is made to an external reality, then this means communication (with others) occurs, as it were, *despite* the closure of cognitive processes. If cognition is indeed closed, in the sense that there can be no 'contact' between one mind and another, or indeed between one mind and 'reality', then 'contact' – and this means interaction by implication – should be remodelled to take account of such closure. For reasons of cognitive closure, therefore, communicative interaction can be more adequately viewed as a precarious process. The general concept used to conceptualise communication here is that of contingency in a social-theoretical sense, i.e. closer to risk than to dependency.

Part two will present a communication model which takes such contingency seriously. It is felt that this is best achieved by making use of concepts taken from such diverse disciplines and areas as information theory, vagueness theory and constructivist theories of communication since these are, in certain important aspects, more sensitive to contingency. In information theory, use is made of the concept of entropy in the sense proposed by Shannon, that is to say, related to improbability. At a simplified level, entropy in an information-theoretical sense means improbability or the 'rate of generating information' (Shannon, 1964, 58) and hence contingency in the general extension outlined above. In non-linear thermodynamic theory, by contrast, 'the entropy production describes the dissipative irreversible processes inside the system' (Glansdorff and Prigogine, 1971, 18). The detail of thermodynamic theory need concern us here only to the extent that it impinges on a broadly generic modelling of structure, flow and instability in communication processes. Attention will return to dissipative structures in a similar context later. As far as the concept of entropy is concerned, this article will operate with a modified information-theoretical model.

Shannon's great merit for social communication theory was to uncouple the concept of meaning from the concept of information. Since his model deals essentially with syntax (we can extend this to refer to form and medium), the task here will be to enrich the entropy concept in pragmatic-semiotic terms and thus make it useful at the level of social communication. Improbability in communication can then be related to recognition of greater contingency in the relationship between human language and its environment. This relationship is said to be contingent in a contextualistic sense since there is no unmediated reference to any putative external reality. Any linguistic reference to a reality construction, therefore, can be said to be vague. The vagueness concept is not used here in the semantic sense of bivalence, i.e. making assertions about statements for which it is impossible to say whether they are true or false. Rather, it is used in a semiotic sense, i.e. to refer to the fractured relationship between language and what are taken to be its referents. This semiotically enriched concept of vagueness considers signs not in their relationship to reality (since cognitive closure means that this relationship is not based on contact), but in their vagueness for the self and other speakers – as 'fuzzy signs for someone' (Grant, 2001b).<sup>2</sup> Both

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<sup>2</sup> Wittgenstein notes in his *Philosophical Grammar* that sign systems, always appeal to a 'live being' (Wittgenstein, 1991, 192).

the concept of vagueness and the concept of entropy are considered in these pragmatic-semiotic terms.

Part three builds on the concepts of cognitive closure, semiotic entropy and semiotic vagueness by considering the implications of such multiple contingency for society and the way in which society operates. The whole point of a radical theory of fuzzy semiotics is to re-examine social communication without recourse to universalistic or rationalistic models which suppress autonomy; communication, in other words, should not be taken for granted. Equally, it should not be superficially denied. It will be argued that the dialogical understanding of interaction does not in fact take adequate account of the improbabilities in communication (as opposed to any improbability of communication itself – as analysed by Luhmann, 1997) which emanate from cognitive closure and the fuzzy relations between speaker and speaker, speaker and world(s). The tendency to operate with concepts such as dialogue, exchange of meaning, or even dialogism introduces at worst a binary aspect into an understanding of communication processes or at best unproblematic assumptions about social relations and social stability itself. For example, the dialogical attitude is often taken to constitute an innate characteristic or a rational predisposition. This view of dialogue already makes strong normative claims on the basis of a series of assumptions about what communication involves. Normative theories of innateness or rational predisposition in communication must remain less sensitive to the construction of codes and to the role of constructors in making and negotiating these codes for they state ‘realities’ held to be truths:

*Irrespective of the cultural background, all participants know intuitively too well that a consensus based on conviction is not possible without symmetrical relations between the participants in communication – relations of reciprocal recognition, reciprocal adopting the stance of the other, reciprocal imputed willingness to see one's own traditions with the eyes of an outsider and to learn from other etc. (Habermas, 1999, 332 – my translation).*

If the communication model is altered on the basis of different assumptions, then these claims can be challenged or reformulated in a way which is still socially meaningful.

As a result of these considerations, the dialogical interaction concept will be replaced with a different theoretical model based on an exploration of functional social (and not literary) fiction in the sense of ‘normative virtuality’ (Piaget), and thus disabused of strong claims to the related concept of intersubjectivity. Norms will be seen here not in pre-ontological, but in constructed terms (in the sense proposed by Varela, 1992). The modelling of social communication processes as functional fictions derives from the cognitive autonomy (Schmidt, 1994) of speakers who clearly cannot gain access to the cognition of their communication partners. One of the media used to bridge the gap between cognitively closed subjects is language. By extending, mutatis mutandis, the epistemic concept of vagueness (e.g. Williamson, 1994) to communicative interaction, it is possible to relate cognitive autonomy to a model of contingent communication. Here, identity, understanding or mutuality – so often sweepingly used throughout the human and social sciences – can only ever be imputations, and precarious imputations at that. The potential empirical gain of such an approach lies in heightening awareness of the improbabilities in communication and the elaborate fictional codes constructed to simulate ‘shared knowledge’.

To recapitulate: the principal concern of this article lies in the construction of a destabilised theory of social communication which acknowledges contingency on three levels: cognition, communication and society. By recognizing social interaction not in ontological, but in functional terms and without recourse to the concepts of intersubjectivity, dialogism or consensus, real epistemological, and potentially empirical, gains can be achieved in operating with the fictionality of constructs of social interaction processes (e.g. in the area of mental health or in an analysis of closed-systems communication such as legal systems).<sup>3</sup>

In other words, in this theoretical model of social communication based on cognitive closure, the potential for cognitive solipsism or social atomism is neutralised by a modelling of the improbabilities in communication which are negotiated for purposes of social interaction by means of fictions (in the sense proposed by Schmidt, 1994, 2001). These fictions are subject to infinite change.

## 2 – Contingency and Dissipation

It might be intuitively felt that unless there is some kind of cognitive disturbance, ‘our’ perceptions establish and maintain contact with ‘reality’, thus enabling ‘us’ to make statements about that reality with a degree of certainty: ‘I see you’, ‘Those trees are green’. Realists refute sceptical positions, arguing that to doubt the existence of external reality (‘Do you see me or do you think you see me?’) is to adopt a relativistic and counter-intuitive stance (‘Everyone knows those trees are green’). The relationship between our perceptions and reality is understood in realist terms as a relationship of some form of reference to an objective world. In other words, assertions are taken to refer, and in extreme cases correspond to (external) reality. The question of reference and referentialism is relevant here given the aim of this article to model social communication theory to take more adequate account of instability. Sociolinguistic and discourse linguistic approaches have long since enriched denotative-referential functions with connotation at many levels of complexity. However, unless semiotic and pragmatic issues are to be neglected,<sup>4</sup> then the full implications of connotation other dimensions must also be taken into consideration. Bühler’s triadic language model, with its consideration of the expressive and appellative functions of language, can be made useful is conceptualising communication as fundamentally appellative in a radical sense.

The implications of realism are clearly that reference is stable (see the section on Putnam below) and therefore insensitive to the contingency of any reference and the appellative contingency and dissipative effects of communication. The latter concept is derived from thermodynamic theory and obviously cannot be applied here mechanically or imported without qualification. The thermodynamic concept of dissipative structures can be used as a *general observational paradigm* related to the observation of instabilities but without specific reference to biochemical or other physical processes.

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<sup>3</sup> I have argued elsewhere (e.g. Grant, 2000a) that closed communications systems are infinitely subvertible by virtue of the porosity of all communication media.

<sup>4</sup> See Bühler, K. 1934: Sprachtheorie. Jena. W. Iser’s *Die Appellstruktur der Texte* (1971), related appellative functions to indeterminacy without accepting the full implications of indeterminacy in communication, and viewing the role of the addressee as (simply) ‘filling in the gaps’ (see Grant, 1990, 77-78).

Classical science stressed equilibrium and stability (Kondepudi and Prigogine, 1998, 427) and the same general paradigm has rather more tenaciously informed human and social science – for example in the sense that social communication is not only assumed, but moreover assumed to be stable lest it succumb to anarchy. A social theory of instabilities in communication need not fall victim to this false dichotomy (stability versus anarchy) but can set out to examine the much more imbricated relationship between instabilities and organization. Such a paradigmatic question is thus common to thermodynamics and to the observation of contingency in general – including social communication theory. More precisely, nonequilibrium and order are not seen to be irreconcilable in thermodynamic terms. Indeed, since a ‘nonequilibrium system [evolves] to an ordered state as a result of fluctuations’ the concept of ‘order through fluctuations’ is central (ibid.). In more general terms, (social) organization and (cognitive and communicative) instability can be reconciled by modelling the dynamics of cognition and communication and the forms of social organization. This dynamic is neatly encapsulated by the concept of ‘dissipative structures’ introduced above: ‘Since the creation and maintenance of organized nonequilibrium states are due to dissipative processes, they are called dissipative structures’ (ibid. – emphasis in original; see also Glansdorff and Prigogine, 1971, 278-279). On cognitive grounds communication can be described as dissipative; cognitive closure and the fictionality of objectivity preclude correspondence of meaning, fixity of reference or reciprocity of worldview. By the same token, cognitively closed social actors communicate using the same media. In communication terms, dissipation is thus structured; in social terms, conflicts are organized. The concept of dissipative communication thus has a wider extension than Derrida’s theory of ‘infinite iterability’, although it can be seen as a natural social extension of this to include all forms of communication.<sup>5</sup> There is, it will be argued, a connection between dissipation and contingencies of reference.

### 3 – Problems of Reference and ‘Reality’

Admittedly, even critics of correspondence theory, retain a belief in referentialism. Putnam, for example, challenges the correspondence theory of language, arguing ‘that there exists a unique *natural* mapping of sentences onto sets of possible worlds’ (Putnam, 1997, 74). Mapping is a looser concept than correspondence in the sense that it relates not to precise relations of equivalence, but rather to the relations between sentences and sets or ranges of possible worlds. Despite the wider extension, however, the concept of mapping is far from implying (contingent) fictionality in the sense proposed here (ibid., 197). Putnam remains committed to realism as opposed to idealism since ‘concepts which are not strictly true of anything may yet refer to something’:

*If a number of speakers use the word ‘electricity’ to refer to electricity, and, in addition, they have the standard sorts of associations with the word [...] then, I suggest, the question of whether it has ‘the same meaning’ in their various idiolects simply does not arise (ibid., 201).*

According to Putnam, stability of reference comes about pragmatically, i.e. through use. Although the shift to a pragmatic level of questioning does indeed make the question of reference more relevant for questions relating to social communication while eschewing a

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<sup>5</sup> See J. Derrida 2000.

semanticist approach, it remains disingenuous to suggest that the question as to whether references have the same meaning ‘does not arise’. Admittedly, there may be plausible pragmatic reasons for adopting such a position, for example, so that social interaction can be observed as taking place smoothly. However, this interaction remains precarious precisely because there is no guarantee that my use is the same as yours. That the difference may be suspended for pragmatic communication purposes may well be true; it is nonetheless equally the case that there is no guarantee that meaning is as stable in use as this position suggests. Putnam himself has conceded this very point (as Rorty points out) in ‘Realism with a Human Face’ (1990):

*[...] elements of what we call ‘language’ or ‘mind’ penetrate so deeply into what we call ‘reality’ that the very project of representing ourselves as being ‘mappers’ of something language-independent is fatally compromised from the start. Like Relativism, but in a different way, Realism is an impossible attempt to view the world from Nowhere* (quoted in Rorty, 1998, 43 – emphasis in original).

This contingency in reference – or vagueness in a semiotic sense – also makes the notion of fixity of reference problematic. For Putnam, the ‘reference is fixed by the fact that that individual is causally linked to other individuals’ (Putnam, 1997, 203). Thus, ‘the referent in that person’s idiolect is also fixed, even if no knowledge that that person has fixed it’ (ibid., 201 – sic!). Here, too, criticisms are called for. If there is no guarantee that meanings used are identical (‘I see you but my “you” is not yours’), then there is no guarantee that reference is fixed. It is important to stress that there is temporary stabilisation of social communication. However, this stability is produced above the contingent uses and references of speakers (synreferentially, as Hejl, 1995, has put it). Stability of reference, in other words, is an a posteriori social (Putnam uses the term ‘collective’ construct). Recent attempts to reconcile referentialism and polysemy also achieve little. A referentialist conception of ‘semantic potential’ argues that expressions can be applied to a ‘collection of real situations’ (Recanati, 2001, 202). This criticism of Waismann’s conception of the open texture of concepts (see Grant, 2001b, 45-46) derives from the belief that the real ‘source situations’ underlying ‘semantic potential’ act as an ‘input for the contextual construction of sense’ (ibid., 204). The semantic potential model reifies source situations and contexts and thus removes their instabilities. The semiotic appeal model views source situations as constructs and contexts as polycontexts (in the sense proposed by Luhmann, 1997).

In terms of a social theory of universal pragmatics, Habermas appeals for a revised concept of reference without abandoning realist foundations. Accepting that there is no representational correspondence between language and facts, he argues for a new concept of reference which will be able to explain how it is that speakers can refer to the same object (Habermas, 1999, 18). In realist terms, the ‘objective world’ is still held to be the backdrop for our assertions (‘a system for possible references’ – ibid., 37) in which reference can be made to the same object: ‘The presence of possible alternatives expresses the realist intuition that we refer provisionally to an extension of the concept which is assumed to be independent of language’ (ibid.). Whether or not Habermas is able to reconcile his realism with his own semi-constructivist admission that we make assumptions about reality is open to some sceptical questioning. Although it is unproblematic to say that ideal truth assertions are contingent on language, this relates to only one side of the double contingency of

communication. The other side of contingency is that there is no guarantee that our references transcend language; and if they do, it is only by means of imputations (von Glasersfeld, 1996) of other possible worlds. These imputations are also constructions, and, therefore, contingent. In other words, the notion of reference does not imply the fixity of an object, but instead assumptions about that fixity for social and cognitive purposes.

#### 4 – Semiotic Vagueness

If the concept of reference is to be made more contingent, then notions of fixity and correspondence must be revised or abandoned. The concept of higher-order vagueness may introduce an element of contingency into questions of reference for vagueness need not be seen as an atrophied form of an originally precise language. The concept of vagueness is closely related to the lack of determination of language which is cognitively and communicatively determined (by a similar lack of determination) and as such can be imported into social communication theory at an appropriately abstract level as porosity: 'higher-order vagueness corresponds to contingency in which worlds are possible' (Williamson, 1999, 128).

In his defence of an epistemic concept of vagueness, Williamson argues that 'full understanding' is possible and that 'to know what a word means is to be completely inducted into a practice that does in fact determine a complete intension' (ibid., 276). It can be argued that such a logically idealised concept of meaning signifies little in terms of social communication. Where meaning is conceived as a complete induction into practice the inescapable vagueness of language is neutralised. Meaning is stabilised in a potentially static way at variance with the endless dissipation (oscillations and negotiations) of communication processes in social terms. Induction is in fact nothing more than an operational or functional fiction, designed to stabilise the proximate uses of several speakers.

As will be shown below, pragmatic-semiotic vagueness, with its emphasis on the instability of any referential operation, is closely intertwined with the concept of communicative porosity according to which boundaries – both definitional and social-systemic – remain inevitably porous. As noted above, this does not mean logical vagueness (bivalence) but the use of fuzzy signs appealing to someone (multivalence).

This is the paradox of contingency since even non-dialogue is relational. In 'Philosophical Grammar', Wittgenstein defines grammar as a series of agreements in which meaning is constituted through relations and not effects. A language rule, therefore, is not constructed according to an external telos, but follows the relational connections of the speakers (Wittgenstein, 1991, 94 – my translation). Contingency – in the form of determinate indeterminacy – is a concept which models such relations in terms of communicative dissipation and cognitive self-reference. It is heightened when the context in which pragmatic relations are constructed is seen as something altogether less stable (polycontextuality). Arbitrariness need not imply anarchy,<sup>6</sup> but a specific pattern or form which can interact with another specific pattern by means of operational fictions – communication. In other words, language users bring about a convergence in arbitrariness by operating with fictions (as socially functional constructions).

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<sup>6</sup> A mathematical model can be found in Spencer Brown, G. 19: Laws of Form. Boulder: Cognizer.



## **5 – Functional Fictions of Communication<sup>7</sup>**

Constructivism can be used in the context of a theory of the interweaving of fiction and sociality precisely because it questions paradigms and premises inherited by social and human sciences from Enlightenment rationality. The contingency of perception, which constructivists are at pains to see as socially functional, means the end of the knowability of objective realities as something external to man. This must also mean the end of the notion of fixed reference. At the same time, a theory of social communication must go beyond the postmodernist *jouissance* of pure contingency for contingency's sake in a construction of functional contingency, which is compatible with a theory of social integration (even, for this may surprise some, in the sense proposed by Habermas).

Perception can be modelled as a self-referential neurological process in a closed organ (the brain), according to which direct contact with external reality is precluded (Roth, 1987); the environment merely transmits electrical impulses which are incapable of penetrating the brain. Data processing (in neurological terms) is independent of outside reality to the extent that the language of the nervous system is independent of 'meaning'. In rather more iconoclastic terms, the language of the brain is a series of clicks (von Foerster in Schmidt, 1994, 15).

Just as the fact that the brain is independent of 'meaning' need not induce irrationality or chaos, so, too, the cognitive autonomy it implies does not send us sliding down a slope into social atomism (see von Glasersfeld in Schmidt, 1994). By means of operative fictions of collective knowledge, the cognitive autonomy of social actors is communalized (Schmidt): 'understanding is something like a useful fiction (in H. Vaihinger's use of the word). We presuppose understanding in order to assume that communication is reasonable, because we assume that other people 'think' (Schmidt, 1995, 322-323).

This (fictionally) transcendent realm seems to take a step back from the brink of epistemological solipsism in a way curiously reminiscent of Husserl's horizon of expectation or 'functional community of perception' (Husserl, 1997, 122). However, whereas Husserl sees intersubjectivity as a phenomenal ontology (see below), the concept of a fictionality of understanding processes views interaction as a precarious operation which the concepts intersubjectivity and dialogue deny. The concept of intersubjectivity should, following Luhmann (1997), be cast off and replaced with a term which does justice to the contingency of communication. Confusion has arisen in the literature here for both constructivists and realists use the concept of intersubjectivity; given its onerous past, this common usage should be replaced. The potential gain lies in opening up inquiry to the multiple fictions of everyday life. At this stage, the following conclusions can be reached: 1. vagueness in semiotic terms is multivalent (i.e. in relation to the multiple environments of the actor); 2. in cognitive terms, non-solipsistic fuzzy semiotics is the price of autonomy and that also means information; 3. in social communication terms, semiotic vagueness, cognitive solipsism and communicative porosity are overcome by operational fictions.

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<sup>7</sup> Cf. GRANT, C.B. (2000b).

## 6 – Entropy/Information/Communication

Although socialization means that language users learn rules and then learn to question them only after they are ‘born into’ normative language contexts, rules are historically contingent over time. There is no pre-ontological or rational need for a given syntax – it reflects functional needs for complexity and risk reduction and varies through time. Miscommunication, misreadings, misinterpretation and a series of other instances of ‘unsuccessful’ communication are evidence of the porous quality of rules. As observed above, the lattice-work structures of communicative porosity are closely related to entropy. If language users can subvert rules, they can produce improbable communication. In this sense, entropy is to be seen as a positive quality that asserts a language user’s autonomy. To recapitulate: there is then an inter-related progression from autonomy in cognition to a semiotic concept of vagueness to improbability in communication and operational fictions of society.

In terms of social communication theory, the use of the entropy concept – the improbability in communication and maximization of information – implies that society builds on dissipative structures – actors are autonomous, but rule-bound. Society however, also requires stability in order to function as a system and thus imposes constraints and seeks to keep improbabilities to a minimum (Mead, 1967; Foucault, 1971, Luhmann, 1975). This is especially true of closed communication systems such as legal systems or even computer software programming systems. In a closer examination of the concept of entropy it will become clear that the term can only be imported into a theory of social communication with a number of important revisions and qualifications. As noted above, the classical information-theoretical formulation of entropy is: ‘In the limiting case where one probability is unity (certainty) and all the others zero (impossibility), then  $H$  [information] is zero (no uncertainty at all – no freedom of choice – no information)’ (Weaver, 1964, 15).

It is important to remember that Shannon’s theory of communication is explicitly concerned with syntax, or, in his terms, statistical structures. Questions of meaning are not, therefore, considered relevant and entropy is conceptualised in syntactical terms. Syntax – or, we can say, structure – operates as a constraint on (dissipative) communication. For example, in telegraphy, the sequences of letters are not random (Shannon, 1964, 39). In a more complex communication model, which goes beyond discrete characters, semantics cannot be ignored; here, then the distinction between regular and irregular sequences (or, in information-theoretical terminology between ergodic and entropic processes) is too rigid. Equally, communication as a social operation cannot be reduced to semantic or semanticist models and it must integrate semiotic and pragmatic dimensions.

The randomness of communication is reduced by syntax (structure). The interplay between randomness and structure is dissipative. Noise is introduced by the arbitrariness of communicative relations with the addressee(s) since cognitive autonomy means that signs can only ever operate appellatively. Since this relation introduces instability, communication can be said to be a dissipative process. ‘Messages’ are always unstable.

From within the information-theoretical approach Jumarie (1990) seeks to extend Shannon’s model to the realm of semantics in order to more adequately examine the ‘coupling effects which necessarily exist between symbols and meanings’ (Jumarie, 1990, 2):

*[F]or sufficiently large values of  $n$  [the number of preceding words – CG], we switch from the space of words to the space of sentences, that is to say, loosely speaking, we move from symbols to meanings (ibid., 5).*

This criticism of the semantic poverty of Shannon's model (which betrays its discrete origins in telegraphy) is of clear relevance to social communication theory. However, its deficiency in terms of any use in human and social sciences is not its syntactical atomism, since Shannon deliberately set out to examine discrete sources. The problem is that Jumarie proposes a shift to the level of the sentence which amounts merely to a shift in structural complexity and not necessarily a gain in terms of semantic sensitivity. If signs are appellative, then semantics are not predetermined by structures, but also by the symbolic function of those structures in the constantly renegotiated contexts of subjects, institutions, systems or societies. Jumarie thus conflates two levels in his critique.

An approach which conflates words with symbols and sentences with semantics neglects crucial dimensions in language as a social event. Since signs are cultural constructs they are context-dependent. Since they are pragmatically constructed by users of those signs they cannot be derived from morpho-syntax. Here, then, in pragmatic communication contexts, signs are contingent; relations between signs and a putative reality are re-negotiated among users. However, it is certainly not the case that rules in themselves, that is to say immanently, lay down the meaning of our signs. It is not rules which determine what is often referred to as meaning, but the users of these rules in pragmatic contexts. Or, as Glasersfeld argues: 'The subjective element remains unavoidable because the semantic link which connects acoustic images with meanings must be actively constructed by each individual speaker' (Glasersfeld, 1996, 219).

And since these rules have not come about ex nihilo, we can add: the users of rules are not mere users or consumers, but rule-constructors. Without such construction there would be no freedom to subvert them. According to Fischer: 'Rules lay down the meaning of our signs, our language. Rule-following is a practice and for this reason rules can only be grounded in a feedforward-loop, i.e. pragmatically [...]' (Fischer, 1999, 45 – my translation).

In terms of social communication theory, the semiotic dimension is thus relevant in a dual sense. Firstly, to borrow information-theoretical concepts, it posits redundancy (zero information) as meaningful (e.g. honorifics). Secondly, it is empirically more flexible in introducing greater contingency into communication theory than either syntax or semantics in their conventional conceptualisations. Where probability and stability are seen as a posteriori constructions, a communication model based on contingency is best located at the crossroads of semiotics and semantics. Porosity (semiotically close to Bühler's pragmatic appeal function of language) means the double contingency of communication where contingency means (1) uncertainty of information (entropy) and (2) constraint or dependency – on a channel or medium for example, which reigns in fuzzy signs. In a formal mathematical model, Paris offers a reductionistic view of the 'higher principles of uncertain reasoning': 'And where to find such principles? Well, we would claim, that some such 'principles' already have a name. They are called common sense, and it is in this direction that we now turn (Paris, 1998/99, 78 – emphasis in original). Common sense, like its relatives consensus, interaction and dialogue,

is invoked where there is fear of contingency or anarchy. However, common sense is aporetic and does nothing to resolve the problem of the precariousness of interaction.

## 7 – Fictions of Social Stability: ‘Dialogue’ and ‘Intersubjectivity’

Few social communication theorists have been as ambitious in their interdisciplinarity as Jürgen Habermas. On many occasions, since the publication of his seminal ‘Theory of Communicative Action’, he has addressed questions of contingency, the counterfactual and even the concept of entropy. However, despite the range of his programme of universal pragmatics, his treatment of the precariousness of social communication tends to eschew some of the more radical points essayed here:

*To be sure, the rational motivation based on each person’s ability to say no has the advantage of stabilizing behavioral [sic!] expectations non-coercively. But the risks of dissension, which are continually fuelled by disappointing experiences and surprising contingencies, are high. If communicative action were not embedded in lifeworld contexts that provide the backing of a massive background consensus, such risks would make the use of language oriented to mutual understanding an unlikely route to social integration [...]. The constant upset of disappointment and contradiction, contingency and critique in everyday life crashes against a sprawling, deeply set, and unshakable rock of background assumptions, loyalties and skills (Habermas, 1996, 21-22).*

For instance, Habermas attributes to rational life-world communicative practices the capacity for communicative renovation ‘in a communication threatened by entropy’ (Habermas, 1995, 552 – my translation). In other words, entropy is seen here as the antinomy of rational inclusive communication and as something which can be avoided. However, since entropy is a characteristic of any complex communication system such as the social communication system with its multiple bifurcations and codes, any control must take place at the cost of a reduction of the very freedom that entropy (as the generation of new information) underlines.

Habermas’ overarching social-theoretical aim (a formal pragmatics of social integration via rational communicative contestation of transparent validity claims)<sup>8</sup> is valid, but it is achieved by neglecting the fact that it is the ‘shuffledness’ (Weaver, 1964) of communication which offers the warranty for autonomy. Of course, one danger lies in taking such shuffledness (which the concept of fictionality does not, as it were, unshuffle) as an absolute and thereby failing to carry out the second step which relocates the examination of contingency (i.e. fictionality) in terms of its (social) functionality. If entropy, as a guarantee of cognitive autonomy (Schmidt), is inherent in communication, how can this entropy can be brought into the fold as functional communication without denying freedom or pathologizing allegedly abnormal discourses as parasitic?

As mentioned above, part of the problem in prevailing social communication theories can be found in the tendency to reify notions of dialogue and relate them to intersubjectivity with the series of strong epistemological and cognitive claims this move entails. The origins of

<sup>8</sup> This is not the place to reconstruct Habermas’ arguments in detailed form. Readers are referred to T. McCarthy, 1978: The Critical Theory of Jürgen Habermas. Cambridge, MA: MIT Press and R. Bernstein, ed., 1985: Habermas and Modernity. Cambridge, MA: MIT Press.

the concept of intersubjectivity can be found in Husserl's attempts to avoid the aporias of the Cartesian ego (conflation of the transcendental cogito with the psychological self) with a dynamic relation between phenomenon and consciousness. To the extent that the subject constitutes the importance of the phenomena around him, it relates itself to a perception of the phenomenon in its character as the other. The orientation to the other enables the subject to overcome its monadic status:

*Only by starting from the ego and the system of its transcendental functions and accomplishments can we methodically exhibit transcendental intersubjectivity and its transcendental communalization, through which, in the functioning system of ego-poles, the 'world for all,' and for each subject as world for all, is constituted. Only in this way, in an essential system of forward steps, can we gain an ultimate comprehension of the fact that each transcendental 'I' within intersubjectivity (as co-constituting the world in the way indicated) must necessarily be constituted in the world as a human being (Husserl, 1997, 185-186 – emphasis in original).*

Husserl was not here considering such interaction structures as the family, church or friendship, but the reasons for which various subjects can perceive an object intersubjectively. The same insight opens up an infinite range of others, an objective nature and an objective world. Intersubjectivity acquires transcendental status in so far as such others constitute a 'monadological community' of different selves.

Husserl's concept of transcendental intersubjectivity casts a long, albeit often unnoticed, shadow over much social interaction thinking. In many writings in the human and social sciences there are references to reciprocity (Malinowski), the 'I-Thou relation' (Buber), an intersubjectivity of common sense (Schutz) or the 'dialogistic character' of interpersonal rituals (Goffmann).

Within this shadow Linell's theoretical framework for a 'dialogical theory of misunderstanding and miscommunication' reveals much about the aporias of dialogical interaction theory. His dialogical/dialogistic<sup>9</sup> model is seen to stand in opposition to what he terms the monological model which is based on a model of communication as transmission via a conduit. In the sense that monological communication models based on the transmission of meaning were outdated and in need of revision, the dialogical approach certainly introduced much-needed plausibility. However, the dialogical interaction concept has succumbed to its own type of conservatism in replacing one communication model with another based on strong intuitive claims. Here, the use of the concept of intersubjectivity as closely related to the dialogical model exposes the passionate belief in the new model which renders it blind to deeper implications of communication processes: 'Understanding and misunderstanding (in discourse) concern degrees of intersubjectivity and are therefore pertinent to mutualities in dialogue' (Linell, 1995, 177); and 'misunderstanding clearly presupposes some (lack of) intersubjectivity' (ibid., 208). Where Husserlian intersubjectivity implies transcendental reference to common objects and is therefore accompanied by some radical epistemological and indeed cognitive implications, Linell's (highly representative) use of this concept might be somewhat disingenuous. Indeed, the influence of Goffman's

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<sup>9</sup> I have argued elsewhere that dialogism and dialogicity are not synonymous – see Grant, 1997.

‘interpersonal ritual’ concept exposes the intuitive but ultimately trivial roots of dominant interaction concepts: ‘[...] it behoves the recipient to show that the message has been received [...] and] that the recipient has an appreciative, grateful nature’ (quoted in Graumann, 1995, 14).<sup>10</sup>

Admittedly, the loose association of the concepts intersubjectivity, mutuality, shared knowledge and understanding may be politically attractive (in the name of inclusionary politics), but too often theoretical models break up into normative intuition. As a result, where the monological approach is rightly criticised for its gross simplifications, the dialogical model proposed in its place is over-simplified on a series of grounds (including cognitive and communicative grounds) and its conceptual apparatus (dialogism, intersubjectivity, reciprocity) is easily reified:

*The speaker is assigned the status of interpretive authority when it comes to the meaning of his/her own utterances. But this holds most unambiguously for reference, not necessarily for descriptive (or other aspects) of meaning. In other words, the speaker knows what the intended referents are, but s/he may be mistaken in her/his choice of words for describing them (Linell, 1995, 180).*

Habermas himself has argued that by following in the footsteps of Husserl, Luckmann for example could not avoid being lost in the aporias of the phenomenological life-world concept. In other words, common knowledge is simply affirmed without due regard for the communicative practices which bring it about. As Habermas sees it, this aporia can be avoided by replacing the phenomenological method with a communication-theoretical method since phenomenology cannot apprehend the regenerative energies of the life-world released by communication. The life-world is thus reconceptualised on a communicative-theoretical basis of rational validity claims and non-teleological communicative action as a counterfactual ideal:

*The one-sidedness of the culturalistic concept of the lifeworld becomes clear when we consider that communicative action is not only a process of reaching understanding; in coming to an understanding about something in the world, actors are at the same time taking part in interactions through which they develop, confirm and renew their memberships in social groups and their own identities. Communicative actions are not only processes of interpretation in which cultural knowledge is ‘tested against the world’; they are at the same time processes of social integration and socialization (Habermas, 1992.2, 139).*

Even where communicative or discourse-theoretical approaches are adopted, the result of the amalgamation of Husserlian intersubjectivity, Mead’s ‘other-directedness’ and Schutz and Luckmann’s ‘stock of (common) knowledge’ is a modelling of communicative interaction in which the dialogical taking of another’s perspective is reified and actors become ‘entangled’ in the perspective of the other. This entanglement is at variance with the constructivist cognitive model set out above and induces positions which amount to a form of intuitive transcendentalism – or the belief ‘that in everyday life the environment I perceive

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<sup>10</sup> Mead also proposes a different, more constructed conception of meaning in interactional terms: ‘Meaning is (thus) not to be conceived, fundamentally, as a state of consciousness, or as a set of organized relations existing or subsisting mentally outside the field of experience into which they enter’ (Mead, 1967, 78).

and grasp is perceived and grasped similarly by fellow-beings endowed with a consciousness “essentially similar to my own” ’ (Graumann, 1995, 15).

As a consequence of such cognitive premises, mutuality is modelled as probabilistic despite a certain willingness to see interaction or mutuality as fraught with risk (ibid., 17). However, the probabilism thesis is problematic since the features of instability outlined above – cognitive autonomy, vague semiotics and the dissipative character of communication – render a dialogically modelled interaction model based on reciprocity, shared knowledge etc. quite exceptional, if not impossible altogether. A more plausible model in the communication and cognition terms developed above is provided by Albrecht Wellmer’s fallibilism thesis – admittedly in a discussion of truth and consensus. If communication is a fundamentally unstable operation/process, then interaction processes take place in a world of contingencies:

*We cannot ever rule out the emergence of new experiences, new arguments and new reasons which could require us to question or abandon truth claims held to be secure: a context-transcending concept of truth cannot therefore be founded in the terms of a theory of consensus, but instead only in fallibilistic terms* (Wellmer, 1992, 23-24 – my translation).

Habermas famously argues that social actors are able to overcome the contingency or locality of their experiences by raising validity claims which are counterfactual (Habermas, 1999, 26). Whereas it is certainly true that society resolves contingency in order to operate, there is an inherent dualism implied in the counterfactual concept (as an alternative to factuality). The frontier between the factual and what Habermas terms the counterfactual must be blurred; and if it is blurred, then we have no notion of the counterfactual and instead only different levels of construction (see also Wellmer, 1992, 30). This is the essential difference between realist concepts of counterfactual imputations and constructivist concepts of fictional imputations. A Habermasian ideal communication community, the related normative concept of consensus and its political counterpart – discursive democracy – rely heavily on counterfactual ideals that can be intuitively invoked in order to challenge the self-referential logic of systems, abuse of power and violations of language games we witness every day. Whether the counterfactual ideal is sufficient to make good the reality deficit is open to serious doubt. It is more plausibly replaced by the concept of operational fictions (see Grant, 2000) which remain sensitive to social and subjective construction and heighten theoretical awareness of the porosity and precariousness of social order.

## 8 – Concluding remarks

There must be a nagging doubt that to see language and cognition as contingent and coupled only by fictions is to open a door beyond which leads onto a slippery slope of anarchy, solipsism, relativism and social atomism.<sup>11</sup> This need not be so. Cognitive autonomy, fictionality, non-correspondence and communicative instability can be reconciled with social stability without recourse to dialogism, intersubjectivity and consensus and their acritical premises.

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<sup>11</sup> These are some of the recurrent concerns voiced in my discussions in the universities of Rio de Janeiro and Aberdeen (2000) and Stirling (2001) and in the GENTE research centre based in COPPE at the Federal University of Rio de Janeiro (2002).

In more concrete, practical political terms it can be argued in that, even bearing in mind the avowedly counterfactual ideality of the discursive model of social interaction, the prospect of a genuinely accessible communicative realm (e.g. the public sphere), in whatever form, is a chimera. A model of the institutions and systems (in the sense proposed by Luhmann, 1986) could be adopted whereby the system seeks one imperative – its survival – and achieves this by self-referential closure. Although there is insufficient space to develop this idea further here, suffice it to say that the basic modification would reside in reconceptualising the system as a much less stable phenomenon which is, in itself, *contingent on communication*.

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