Communicating Stuff: The Intercultural Rhizome¹

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"A rhizome has no beginning or end; it is always in the middle, between things, interbeing, intermezzo. The tree is filiation, but the rhizome is alliance, uniquely alliance. The tree poses the verb 'to be,' but the fabric of the rhizome is the conjunction, 'and...and...and'." (Gilles Deleuze and Felix Guattari, "A Thousand Plateaus," 1980)

Introduction

"Between things [...] alliance [...] 'and ... and ... and ". The rhizome, on this view, stands in contrast to entities with a finite pattern of branches and fixed nodes of homogeneous entities. It stands for relations, not "things", not reified objects of phonology, grammar or the lexicon. Elsewhere in "A thousand plateaus" Deleuze and Guattari distinguish their concept of the rhizome from the linguistic framework of Chomsky and other structural-generative linguists. This paradigm, they argue, is typically represented by the derivational tree:

A derivational tree like this is hierarchical. It starts with an initial symbol (S = sentence) which is progressively expanded by binary branching into other categories which are pre-specified by the theory, its inventory of categories, and its laws/rules of expansion. The terminal symbols, here N and V (representing, for instance, *trees grow*) are linear. The categories allowed are homogeneous, and in an important sense reductionist. They tend to be reified by the theory, to the point where, instead of being seen as constructs which emerge from specific theoretical postulates, they are seen as "existing" as independent entities. Moreover, the standard version of the theory is socially, culturally and pragmatically decontextualized. By concentrating on "an idealized speaker-hearer", the theory concentrates on the mathematical and generative properties of linguistic competence. It is explicitly and deliberately disconnected from

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the social and cultural context, and from the speaker's communicative intentions and the hearer's uptake.

This summary goes substantially beyond the specific issues raised by Deleuze and Guattari in the chapter from *A thousand plateaus* quoted above, but it does reflect the key points which they make throughout their book. In contrast, the rhizome (model? metaphor? theory?) is characterized by **connexion**, **heterogeneity** and **multiplicity**: all nodes (and even "node" may be an excessively concrete concept) are connected to any and potentially all others. What is connected is not a closed list of categories, but a heterogeneous and potentially infinite set. These connexions are characterized as lines, rather than points – as relations and links – and by their multiplicity, forming a topography or cartography which is quite different in epistemology and methodology from the tree model. In this paper we shall concentrate on the properties of connexion, connectivity and multiplicity (the others are asignfying rupture and decalcomania, and take us beyond the framework of the issues for which we have space here).

Deleuze and Guattari are quite explicit that they do not see the tree model and the rhizome as mutually exclusive. Indeed, if both are to be accepted as bona fide models of intellectual enquiry, both must be concerned with the discovery and interpretation of patterns, regularities and links in the material which they represent, and in the models which they use to interpret them. In one sense, however, Deleuze and Guattari seem to have misread a key feature of generative linguistics. In their critique of the closed and finite nature of the categories and rules of the tree model, and in emphasizing the essentially open and unrestricted character of the rhizome world and its representations, they are talking about only one aspect of generative linguistics, namely competence, or the inherent linguistic knowledge of the idealized speakerhearer. Both inductive structuralist linguistics, and deductive generative linguistics, arrive at a finite number of categories within the linguistic domains that they work on. For instance, in phonology there are between around 11 and 100 phonemes in each of the world's languages. But the realization of these phonemes in linguistic performance is infinite: there is no limit to the potential different realizations of sounds by individual speakers in specific communicative contexts. And as we shall see, there are mechanisms for overcoming the alleged limiting homogeneity of these representations as well.

I am interested here in a question which spans the space between me and the rhizome. Most social scientists would think of the rhizome as a construct, a metaphor, some kind of schema, which does not sit well with empirical science and the analysis of objective data. But there is one recent phenomenon which has been extensively studied by social scientists, and yet which has many properties of the rhizome. That phenomenon – as has been amply observed before – is the Internet, and more specifically the Web. Strictly speaking, the Internet is the totality of nodes linked by electronic connexions and routers, while the Web is the specific part of the Internet which works with HTML and the World-Wide Web conventions. The Web will be our main focus, though in several respects the arguments we use could apply equally to the Internet as a whole.

I have been undertaking two essentially unrelated research projects on the Web. One is top-down: it takes the topology of the Web and investigates the propagation of messages across it. The vehicle that we have been using (Sussex & White, in preparation) is Internet jokes. This is like the spreading of information or gossip through a community, and the manner and speed of its expansion. However, information and jokes do not spread totally freely. There are human factors which intervene in a way which relates to the nature of the recipients and forwarders. Some recipients are not forwarders, and as black holes send on nothing, so that the propagation stops with them. Others are automatic forwarders of everything. Still others select which joke to send to which person, and even edit jokes to soften or sharpen their impact. The interaction between the mathematical and the human factors provides insights into the actual operation of the Net for the purposes of human communication, community formation and maintenance.

My second project is more bottom-up in orientation. As a piece of observational, descriptive and socio-cultural linguistics it studies communication between people from different cultures, and the ways in which groups attune and accommodate their language and cultural performance in real-world communicating situations. This project uses models taken from linguistics and sociolinguistics (discourse and conversation analysis, accommodation theory) and intercultural communication studies, notably Hofstede's (1980) typology of cultures. It particularly studies first-language communicators in interactions with second-language communicators in English language emails on the Internet, and the ways in which the structure and nature of Internet-based communication affects the progress of email communication.

We begin with the top-down perspective and with the architecture of the Web, not specifically in the context of jokes, but more generically in terms of its topology. I then return to intercultural communication by email and to the question of what it can tell us about communication in a network where, unlike face-to-face communication, the bandwidth is systematically restricted, and there is evidence of filters and biases between the correspondents.

The rhizome and the web

The Web is, in many respects, an archetype of connectivity. It presents as an aggregation, a network; it is the "interbeing", the spaces between whatever may be at the nodes. The nodes are fundamentally heterogeneous, and are characterized by the kind of multiplicity which is fundamental to the rhizome. And the Web exhibits a cartography of multiple connexions which also matches the rhizome well. The nodes themselves are physical, but indeterminate too. No-one knows the extent of the WWW. Google no longer lists on its home page the number of web pages that it indexes, but a search for "the" yielded nearly 18 billion hits, and that is only the English-language material. It has been estimated, though controversially, that Google indexes perhaps 6% of the total Web. The key to the architecture of the Web is the link, and the link is an emanation of "interbeing". The hypertext architecture and the reading which it supports have been seen as a key element in the convergence of critical theory and hypertext (Landow 1997). Burnett (1993) has gone further and linked the rhizome specifically to hypertext; and Hamman (1996) makes the still stronger identification between the rhizome and the Net itself.

We can develop these parallels between the rhizome and the Web. The Web is open, since anyone with a connexion can establish a web site. It is decentralized, since there is no single gateway, and in principle anyone can establish access from anywhere (excluding problems of economics and censorship, which have to do with the local conditions and not with the topography of the Web as a whole). And it is unstructured: there is no hierarchical organization. You do not have to access a node via its highest parent: there is no need to navigate to my website via the University of Queensland home page, since if you know the web address (URL) of my website, you

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can go directly there from anywhere on the Web. A priori, then, the underlying structure of the Web looks flat. This means that each node has an equal chance of being connected to any other node through HTML links. In the nature of things, while some nodes will have more links than others, the distribution should follow that of a standard population, and should be represented by a bell curve.

We need to distinguish between potential flat access, which depends on knowing and using the URL of the node that you want to link to, and the actual hardware and software architecture which the Web utilizes. Internet service providers and Local Area Networks (LANs) in individual institutions all provide a physically non-flat, hierarchical structure. In order to access the Net one has to go through a service provider or local area network by connecting or logging in to it. Your user home page will then be part of that domain, one or more levels down, and the rest of your website will be topologically below your home page. Your local area network or service provider will connect to the rest of the Net through local gateways and internationally through international gateways, using cable or satellite connexions. These different levels of structuring can be seen in a number of tangible ways. The length of a web address will often reveal the structure, with the material at the left, following "www" and before the first"/", giving the highest-level information about the given local domain. The order is from more specific to more general: the University of Queensland is identified as "www.uq.edu.au", or "the University of Queensland domain in the educational domain in the Australia domain". After the first "/", however, the order shows increasing levels of specificity, and so increasing structuring: "uq.edu.au/research" is the research domain within the University of Queensland domain, and so on. The length of the Web address is in direct proportion to its depth of embedding in the hierarchical structure. This structuring, however, is an indexing device, a means of identifying a web page by its position within an information structure, and of doing that in as transparent a way as possible. In principle one could give a name like "www.MyUniquePage" to a web page dozens of levels down in a hierarchy. Unlike a physical map - this is where the cartography ideas of the rhizome are evident - where you have to pass into a town to get to a suburb to get to a street to get to a house, "www.MyUniquePage" is immediately accessible by this address to anyone on the Web, provided that the engines which run the Web know about the alias which links this shorter name to the full location address. The architecture of the Web, then, can circumvent the need for hierarchical travel which we find in physical domains. The web page "www.MyUniquePage" can access "www.YourUniquePage" directly: in principle, they should all have the same chance as any other webpage of sharing a link.

On the other hand, it is perfectly possible to superimpose additional structure on the Web. A spam filter effectively divides the Web into two groups, permitted and excluded. Or there is the problem with my surname, which contains a dangerous word (SuSSEX) which is blocked by some firewalls, and so divides the Internet into domains where I may send emails, and domains where I am caught by the firewall and excluded. More sophisticated is the kind of stratified grouping proposed by Harnad (1991, 1992,1995a-b) for scientific discussion, with an external group of people who are allowed to read, and an inner circle of experts who are allowed to make written contributions to the discussion (Sussex 1994). This arrangement helps to exclude incompetent or vexatious postings from non-experts, while at the same time allowing access to advanced material for people who are able to appreciate and benefit from it. The Harnad models contrasts with the more rhizomatic nature of Wikipedia, the reader-written web encyclopaedia (www.wikipedia.org), where presence equates with

participation. There are, as would expect, a very large number of links to Wikipedia: Google shows 207 million. Web indexers like Google provide a structured means of managing the monstrously large and chaotic volume of information on the Web. Rhizome theory notwithstanding, humans prefer to process structured information, and Google's metric of "number of links to a site" is as good a measure as any yet found to prioritize the Web hits for a given set of search keywords.

Some nodes, then, do have many more links than others. This feature is the key to the operation of Web indexing software like Google, which sends web crawlers (automated programs) around the Web, collecting links from every page to every other page, and then aggregating and indexing the result. The list of hits in a Google search will be ranked in order or numbers of links: the webpage TO which the web crawlers have found the most hits will be listed first, and so on in descending order. The last listed may have very few links to them indeed. The existence of heavily linked and lightly linked web pages, however, is perfectly consistent with the rhizome. There is nothing in the rhizome which stipulates that every node should have the same number of links: that would make the Web not only flat but also homogeneous, and two key terms in the rhizome definition are "heterogeneity" and "multiplicity". But if some web pages have more links to them than others, then this should follow the principles of normal distribution, or the bell curve: there will be an average number of links per web page, with a few web pages having a lot more and a few having a lot less.

The demonstration that this is not the case, and that the Web does not share an important prediction of the rhizome model, is due to a network research group working with the mathematician Barabási (2003). Beginning from Euler and graph theory, and its extensions by Erdős, Barabási goes on to discuss Milgram's (1967) investigation of the "6 degrees of separation" idea, the notion that we can connect with anyone on the planet through at most 6 intermediaries, each of whom knows someone who is closer to a target individual. There are serious experimental doubts about Milgram's methodology and the number "6", but the underlying question has obvious relevance to the Web: how many clicks on average does it take to get from any node on the Web to any other? Working on a set of samples, Barabási and his colleagues calculated that in a Web of 800 million nodes (this was 1998, and the Web was smaller then), the average number of clicks needed was 18.59: in Milgram's (1967) sense, indeed a "small world", a structured one where random searching in a flat domain is not applicable. Furthermore, and more telling, was their result that the distribution of links on the Web is massively skewed. Far from following the normal (bell curve) distribution, 80% of the links on the Web point to 15% of the Web pages. This means that the appropriate model is rather a power law curve:



where a small number of websites are the target of an enormous number of links, and

a very large number receive very few links. As a result, the Web is not a rhizome, and it is not an open flat network:

The most intriguing result of our Web-mapping project was the *complete* absence of democracy, fairness, and egalitarian values on the Web. We learned that the topology of the Web prevents us from seeing anything but a handful of the billion documents out there. (Barabási (2003), p. 56; italics in the original)

If the Web were a random network, we would all have the same chance to be seen and heard. (*op. cit.*, p. 58)

In terms of mathematics and graph theory, therefore, the rhizome is at best a heuristic for thinking about certain aspects of the structure and functioning of the Web. There are, however, other aspects of the Web which do not so obviously show "the *complete* absence of democracy, fairness and egalitarian values". This question takes us to the human interfaces with and and through the Web, and specifically to intercultural communication.

The web as intercultural communicating space

If the Internet is not architecturally flat, is it culturally flat? Is it culturally neutral? I am a linguist, an empirical rather than a theoretical linguist, and my work lies at the social science end of the more-or-less-continuum of the discipline area covered by the discipline of Linguistics. This means that I typically work with data gathered from real-world observations or real-world sources like documents or broadcasts. The kinds of analysis that I do start with empirical taxonomy, description and some statistics, and structured qualitative analysis. And the theories that I work with tend to be those of social science: conversation theory, discourse theory, accommodation theory, communication theory. This places me, on the linguistic scale, a fair distance from the rhizome of Deleuze and Guattari. Nonetheless, there is a chain of epistemologies which joins me to critical linguists like Fairclough and thence to critical theorists like Habermas, and from there it is certainly a shorter jump to rhizomes than it is from where I stand.

The Internet email project into intercultural communication addresses questions of communication and their interaction with the architecture and functionality of the Internet. They offer another angle on "democracy, fairness and egalitarian values" in cyberspace.

Hofstede (1980), and after him many studies in the field of intercultural communication, identify a series of variables, perhaps stereotypes, as a means of classifying cultures. Particularly relevant for our purposes are the following, from different sources in the literature:

- **collectivistic** / **individualistic**: Confucian cultures broadly give priority to the welfare and feelings of the group, whereas individualistic (typically: Western) cultures give priority to the needs of the individual;
- **power distance**: the difference between cultures where there is a wide distance in prestige, power, money and other factors between the empowered and the disempowered. A specific expression of power distance has to do with age: in Korea, as in Vietnam and especially some other Asian cultures, juniors in age are expected to address people older than themselves deferentially (in Vietnam this affects even the younger of identical twins);
- uncertainty tolerance: some cultures prefer leaving many things implicit,

whereas Western cultures tend to prefer explicit enunciation. Uncertainty, though Deleuze and Guattari do not address it in detail, is in fact an implication of the rhizome, which is open-ended and constantly in a process of evolution and shifting links;

ascription: cultures like Korean (Trompenaars and Hampden-Turner (1998) belongs to ascription cultures, where one's identity is strongly linked to family and social structure.

These factors have a direct relevance for fair and equal interchange on the Internet. The subjects in this study were Australian and Korean university students, the latter students of English. Interactions were one-on-one, though the Australians mostly had two penpals, given their greater facility in their mother tongue English. The data from this project (Sussex, Yu & Kim, 2005) are currently under analysis. Several tends in the data, however, are already evident. Penpals begin from near-zero knowledge about their partners, so that their first task – the task of minimizing uncertainty – is self-introduction. Compare the ways in which a Korean and an Australian introduce themselves to their new penpals:

Korean: By the way, about me. I am male and married. I have a baby who was born on April 2nd.

Australian: My name is R^{***} and i'm 24 years old. I live in Brisbane city, which is the capital city in the Australian state of Queensland.

The Korean's ascription focus is clear: he reveals gender, marital status, parental status and the baby's date of birth in 20 words. The Australian provides a name, and by implication a gender, as well as geographical location in 25 words. The Korean's goal is the systematic situating of himself in his social network. The relative prominence of various variables within the social network are shown even more clearly in a following email:

Korean: Do you believe God? I believe in God. I'm a christian from I was in my mother's womb. Although there are so many pains and sufferings in the world I can live and love the world by believing God. Nowadays there is early heat in Korea. I can feel a rise of an air temperature. I'm sure that we must keep our environment clean.

This contribution is striking by the way in which it does not sit comfortably with the kind of self-introductions, or the development of a fairly new acquaintance, that would be standard for Australian English. The abrupt switch from personal religious belief to weather and ecology is remarkable enough, since it implies that all these issues are of similar weight in siting oneself in a physical context. But the religious declaration stands out even more. Australians tend to be reticent about their religious beliefs. This belongs to the more private areas of personal experience for the average Anglo-Australian, though charismatic Christians might not agree. One does not talk about it to strangers, or even to people whom one meets and is developing an acquaintance with, until rather further into the interchange than is chosen by this Korean penpal. Australians are also reticent about national ethnic unity and

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Identities have been changed to preserve the anonymity of the contributors.

homogeneity, though they may be avidly xenophobic in sport. This contribution from the Korean participant stands out for its strongly sincere and detailed account of the collectivistic concerns of Koreans, both personally and in local social and wider national perceptions:

Korean: As a Korean, I can feel strongly the Korean own national homogeneity. Korea has been a racially homogeneous nation for a long time. So we have the strong power of unity. Our Korean never live alone. We must make up party anywhere, anytime and whatever we do, do it together. Korean often say that 'we are the one.' From family, friend, school, military we learn how to be the one. There are abundant affections among Koreans. Between parents and children, friends, teachers, seniors, juniors, and so on. In this strong relationship we live.

This is a sound lesson in social relativism for the Australian penpal. Although apparently not meant didactically, the Korean presents a mini-lesson in Korean ethnic sociology and civics. Apart from the fact that these sentiments are somewhat unfamiliar to the Australian consciousness, the insistence on unity through shared affection and shared social duty would not be part of an Australian cultural script, to adapt a concept from Schank and Abelson (Schank & Abelson 1977). And this in spite of strong and consistent English on the part of the Korean student.

This type and level of communication via email merit further investigation. Whether a Korean would present a statement on Korean civics like this, and in this manner, to an Australian in face-to-face conversation is open to question, and dependent on a variety of contextual factors. It is a commonplace that the Internet presents much narrower bandwidth than face-to-face communication, and so inevitably skews or potentially distorts communications. This is particularly true of information which does not belong to the formally expressed parts of language. But on email, language is the carrier of culture, and language identity and competence are much easier to gauge than culture in terms of spelling and grammar and lexical choice and collocations. I have been developing a notation involving a conjoined language-and-culture formula to try to capture these phenomena (Sussex, in preparation). In L'1C'1 L-primed refers to a particular language, and C-primed to a particular and associated culture. The "1" in both cases indicates a first (mother) language and a first (mother) culture. Communication (here diagrammed " < > ") should normally be easiest and most effective between speakers of identical L / C profiles:

L'1C'1 <> L'1C'1

with speakers of identical language and culture backgrounds: monolingual Australians, say. On the other hand, L'2C'2 designates someone speaking English and operating in an Australian cultural framework, but having both language and culture as learnt or acquired non-native. The problem is that in a situation like the Australians and the Koreans communicating in English, the formula

L'1C'1 <> L'2C'2

is not quite correct. To be sure, the Korean is speaking English as an L2 and using the cultural content as a C2 (i.e. non-native). But is the second prime in L'2C'2 correct? It should probably be a question-mark: L'2C[?]2. It is usually not too problematic to work out, from an interlocutor's performance, which language they are speaking. But culture contact is less clearly evident, and the speaker's language competence need not be matched by cultural competence: some competent speakers are culturally incompetent, and some incompetent speakers can be culturally quite sophisticated.

The Korean and the Australian successfully negotiated their way through what might have been taken as a didactic exercise in lecturing on cultural practices. Here the rhizome's framework of connectivity, heterogeneity, multiplicity and uncertainty provides some rich links for exploring both the language and culture interactions between this pair of penpals, and comparatively against the behaviour of other penpal pairs, and other investigations Computer-Mediated Communication.

Conclusion

This conference is highly inter-disciplinary. The range of topics, disciplines, theories, methodologies and data show that presenters are coming from a wide range of different perspectives. One of the joys of conferences like this is the serendipitous discovery of new things: a set of data that confirm, or better still, deepen your understanding of your own work; new theories; alternative methodologies; literature in an area that you hadn't thought of searching; epiphanous moments of lateral thinking.

Before undertaking this paper I had what I conceptualized as two separate projects: one project investigating the topography and propagation of information on the Web, and one analyzing socio-cultural aspects of interactions by email. I began with the rhizome, and its properties as presented by Deleuze and Guattari ⁵. I expected to discover that the rhizome would map closely on to the Net. Thanks to Barabási, I discovered quite the reverse. On the other hand, I had a developing analytical project in intercultural communication on the Net where I expected that the rhizome concept would be too high-level and too abstract, and so not amenable to application to specifics of intercultural communication. Thanks to its focus on indeterminacy, fluidity, negotiation, connectivity and heterogeneity, the rhizome here confounded my expectations once more, and is providing avenues for further description and analysis. The rhizome concept, in its various manifestations, pervaded this conference. I was stirred, but not shaken, to find I had been wrong about the rhizome metaphor twice in two applications to my own work. A viable research framework succeeds by surprising.

⁵ See http://rhizomik.net/content/rhizomik for information on the rhizome as a scientific model and metaphor.

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