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Scientific Communication and Authorial Identities in Cognitive Neuroscience Handbooks

Non più ritenuto esempio di linguaggio impersonale, il discorso scientifico è stato al centro di studi sui generi testuali – Swales (1990, 2004), Miller (1992), Bhatia (1993), Berkenkotter / Huckin (1995), Hyland (2004), Gillaert / Gotti (2005) and Bhatia / Gotti (2006) – e, più recentemente, sulle identità linguistico-culturali, professionali e autoriali. Appare adesso necessario costruire un equilibrio fra l’attenzione ai tratti di individualità, alle caratteristiche di genere, all’identità dei singoli testi, e ai valori collettivi delle comunità scientifiche. Il punto d’interesse di questo studio è il linguaggio dei manuali di neuroscienze cognitive, in prospettiva diacronica. L’ipotesi della proporzionalità diretta tra la presenza di tratti di individualità e il prestigio degli autori, soprattutto nelle introduzioni di tali testi, è stata supportata dai dati. Si è utilizzato un *corpus* di 8 manuali di rilievo nella storia delle neuroscienze cognitive (1970-2004), che è stato analizzato prevalentemente applicando le categorie dell’Appraisal Framework (Martin/White 2005). I dati hanno evidenziato elementi sia di cambiamento, sia di continuità. Insieme all’affermarsi di una terminologia/linguaggio meno ‘speculativo’ e sempre più espressione dell’innovazione tecnologico-scientifica, si rileva la persistenza del manifestarsi delle persone autoriali. Gli scienziati di successo continuano a ricercare, nel 1970 come nel 2004, in determinati *loci* testuali, una comunicazione olistica con i lettori, che renda possibile condividere informalmente “la genesi e l’evolversi di un’idea” (Christie 1970:1), e ricorrono a tratti discorsivi che evidenziano il valore del lavoro sia individuale, sia di gruppo, in una articolata interazione di aderenza ai canoni della comunicazione scientifica, e di affermazione di identità individuale.

1. Introduction

As accounts of impersonality in scientific discourse have fallen out of favour, greater emphasis has been laid on professional, personal and lingua-cultural identities, and consequently on the exploration of authorial identities of individual researchers. At the same time, the tendency to study texts as examples of specific genres has been growing

steadily since the 1980s, representing a major paradigm shift in textual studies. Thanks to the work of Swales (1990, 2004), Miller (1992), Bhatia (1993), Berkenkotter / Huckin (1995), Hyland (2004), Gillaert / Gotti (2005) and Bhatia / Gotti (2006), among others, the domain of genre studies has flourished and added impetus to the analysis of specialised discourse. What is necessary is a balance between attention to individual authorial identity and collective characteristics, with a view to a complex relationship between single texts and genres – at an intersection where generalisations may be misleading.

The present study focuses on the language of handbooks in the cognitive neurosciences (CogSci). Its hypothesis is that individual authorial traits are more apparent in given textual *loci*, especially in more prestigious titles. As the data will show, in prefaces and introductions prominent authors are not particularly interested in conforming to an ‘objective’ scientific reporting style; they seek instead to engage an authentic exchange with their audience through a more personal language. This involves a sensitivity to what Halliday / Hasan (1976: 24) defined as “degrees of texture” and to the linguistic signals of differences in communicative mode. Compliance with genre features, on the other hand, prevails where research methods, data and results are reported, thus mirroring the communicative expectations of the scientific discourse community.

The need for a more personal communication style, whenever possible, was advocated a few decades ago by the social psychologist Richard Christie (1970: 1):

The chapters that follow are based on empirical findings and in them we will adhere to the currently approved canons of social psychological reporting. However, one of the complaints frequently made by students, and often from their professors as well, is that most research reports are presented in a highly stylized state of desiccation. [...] When technical writing is well done, it conveys the relevant information concisely. Too often though it leaves one with the impression that the actual research proceeded as neatly and as colourlessly as the report.

The genesis of the hunch or chance observation that sets the research in motion, the false starts and brilliant insights that don’t work, the unanticipated botches which can ruin a study, the excitement of scanning data to see if it bears out hypotheses, the painful re-evaluation of material

which run counter to predictions, and the elation when all the pieces fall into place – all of this rarely appear in technical work. In this chapter, therefore, before renouncing personal pronouns and prejudices, I would like to describe informally the genesis and development of an idea: the Machiavellian orientation in interpersonal behavior.

At the time, the pressure to adhere to the “canons of social psychological reporting”, i.e. to an objective scientific style, was very strong in the English-speaking world. Such a claim, however, contrasted with the need for more personal exchange in scientific communication. Christie was trying to strike a delicate balance between the two needs, by adopting a more direct style to make the readers aware of the choices underlying the written text: a colourless, “desiccated report” is likely to leave out cultural insights and intuitions that might encourage further research. In a way, his reasoning anticipated the present necessity for negotiation in academic discourse.

1.1. Accreditation in written scientific dissemination

Much has been written about how information technology and electronic publishing have transformed the reading/writing process, together with disciplinary research hypotheses and methods. Moreover, increasing attention is now being paid to motivation and readers’ cognitive styles. Research articles (RAs) rather than books provide specialized information to contemporary scientific communities, though not infrequently only the abstracts and results of RAs are actually read (Abbamonte 2002, Boismenu 2004). Written scientific dissemination is dynamic, fast-evolving and not void of contradictions: prestigious scientific journals and reviews share the same fluid cyberspace as popular information, weblogs, newsgroups, wikis and peer-to-peer file sharing networks (Miller / Shepherd 2004). What status then can quality handbooks retain in this multi-layered context? Volumes are not always the most practical option in the global semiosphere; yet as Myers (1990:17) points out (my italics here and below):

Books are crucial in the life of fact, since they present a different sort of fact from journal articles, a *mosaic of claims from which the personal*

and provisional have been removed and in which the pattern of the whole is constructed. The physicist John Ziman is one of a number of science studies researchers who would see textbooks, along with encyclopaedia articles and university lectures, as the conclusion of a process of accreditation.

Among volume-length publications, the handbook is a highly respected publication consisting of collected writings on a given topic by prominent researchers supervised by prestigious editors. For this reason it was chosen for the corpus considered here.

2. Methodology

2.1. Tools for the analysis

When dealing with the evaluation of authorial identity and the subjective presence of communicative participants in texts, the methodological resources of the Appraisal Framework or AF (Martin / White 2005) are most helpful. Compared to other possible perspectives and tools for this kind of analysis (cf. Hunston / Sinclair 2000; Hunston / Thompson 2000; Hyland 2004, 2005, 2006), AF provides a dynamic, comprehensive functional approach to analyzing the language of evaluation and stance in its social and rhetorical dimensions, not only in media communication and commentary, but also in scientific dissemination. It facilitates an understanding of how the dialogic quality of such language is displayed in the intersubjective relation between texts and readers' beliefs and value systems, and how (academic) writers project their authorial *personae* before intended readers. In Hyland's words (2005: 2):

Academics in different fields represent themselves, their work and their readers in different ways. In the humanities and social sciences they take a more explicitly personal position than in the sciences and engineering, focus less on methods and warrants, refer more to social actors and processes, claim significance in different ways and employ more citations. This is because rhetorical practices are closely related to the

purposes of the disciplines and the ways they create knowledge. While this does not determine the ways we use language, it means disciplinary credibility and understanding can only be achieved through participating in communities and connecting with their socially determined and approved beliefs and value positions.

What is at stake is the process of the construction both of knowledge and of texts, which emerges as the result of social interaction between writers and readers “in a shared professional context [and in a] recognizable social world [created through] our rhetorical choices” (Hyland 2006: 36). The use of rhetorical practices and especially of metaphors in the language of science has been variously analysed (Lakoff / Johnson 1980, 1999; Brown, 2003) and has developed into an autonomous field of study (Gross 1990; Miller 1992; Harris 1997; Ceccarelli 2001; Collier 2005).

With its wide range of applications, AF has proved to be the most adequate framework for this type of analysis, because it is particularly sensitive to stylistic differences linked to socio-cultural contexts. It has been sometimes remarked how clearer definitions of AF subcategories or terminology would be advantageous. That notwithstanding, its ever-developing resources allow us to identify, among other textual features, the sense of solidarity and shared judgement between writers and their audience. In addition, its notions of *gradation* and *scaling* are functional to the aim of the present analysis, which requires a “delicacy of focus” (Halliday / Hasan 1976: 24). In brief, AF relies on the following categories:

- *Attitudinal positioning*, which implies a positive/negative assessment of people, places, things, state of affairs;
- *Intertextual positioning*, which refers to a writer/speaker’s reference to the words or thoughts of someone else;
- *Engagement and dialogistic positioning*, meaning that every word/utterance is refracted by a host of other (antagonistic) idioms.

For our purposes, the first of these is the most relevant category. It is further subdivided into:

- *Affect*. The writer’s emotional commitment to the state of events described. Martin (2005) differentiates explicit (semantic) from implicit (contextual) affect. The general outlines of the grammar and

semantics of affect are well understood. It is concerned with emotional response and disposition and is typically realised through mental processes of reaction such as ideational metaphor, positive or negative categories and gradation along a sliding scale of force or intensity.

- *Judgement*. Positive or negative evaluation of human behaviour by reference to a set of rules and institutionalised social norms. It can be either explicit or implicit and is divided into two broad categories which entail authorial directives: social esteem and social sanction.
- *Appreciation*. It relates to positive or negative assessments of material objects, but also of artefacts such as work of art, texts, policies. It encompasses aesthetic as well as non-aesthetic values. Such values may focus on the compositional qualities of the evaluated entity or the aesthetically-related reaction/impact.

Authorial voices and identities can also be dealt with from the perspective of intertextual and dialogistic positioning, as we shall see below.

2.2. *The corpus*

Our corpus consists in the general prefaces and introductions to the most authoritative CogSci volumes (or their sections/chapters) published between the 1970s and 2004. Unless otherwise specified, a preface and an introduction were gathered from each of the following volumes – average length 1,000 words and 1,400 words respectively:

- R. Christie *et. al.* 1970. *Studies in Machiavellianism*. New York and London: Academic Press.
- M. Critchley 1970. *Aphasiology and Other Aspects of Language* (Preface, Introduction, 31 chapter openings). London: Edward Arnold.
- T. Dalgleish / M. Power (eds) 1999. *Handbook of Cognition and Emotion*. New York and London: John Wiley and Sons Ltd, 1999.
- G. Denes / L. Pizzamiglio (eds) 1999. *The Handbook of Clinical and Experimental Neuropsychology* (Preface, Introduction, 31 chapter openings). London: Psychology Press.
- M. D’Esposito (ed.) 2003. *Neurological Foundations of Cognitive*

- Neurosciences*. Cambridge MA: Massachussets Institute of Technology.
- B. Kolb / I.Q. Wishshaw 2003. *Fundamentals of Human Neuropsychology*. New York: Barnes and Noble.
- L. H. Goldstein / J.E. McNeil (eds) 2004. *Clinical Neuropsychology*. New York and London: John Wiley and Sons Ltd.
- M.S. Gazzaniga (ed.) 2004. *The Cognitive Neurosciences* (General Preface, 11 Introductions). Cambridge MA: Massachussets Institute of Technology.

2.3. Selection criteria and procedure

The corpus was assembled according to criteria of relevance and impact of the volumes on the discourse community. Christie's handbook remains the standard reference in the field of Machiavellian personality orientation, and the 20-item Mach IV test it provides is the main measure of Machiavellianism as a distinct personality construction¹. Critchley was one of the most authoritative scientists in his field (aphasiology), whose contributions centred not so much on technologically-enhanced research methods, but rather on his unusually deep powers of observation and meticulous dissection of patients' behaviour and sensibility². As we shall see, the expression of researcher/authorial identity is of particular interest when the recent evolution of scientific method in the field is considered.

The other volumes in the corpus belong to a later period (1999-2004) and are used as authoritative references in contemporary study and research. The function of this time gap is to highlight differences and meaningful analogies in communicative modes of the CogSci discourse community and of individual scientists in its midst, as related to ongoing scientific/technological developments. Dalglish and Power's (1999) handbook provides critical, integrative accounts by distinguished

¹ Mach IV was developed to measure political personality orientation of leaders in organizations. As defined by Christie (1970), political personality is an integrated set of personality traits whereby (in)formal power is used to control and manipulate others. This perspective was highly innovative and is still viewed as the most effective.

² Critchley published more than 200 articles and 20 books. Many of these are still of interest, especially to scientists dealing with the development of the discipline over the years or with topics that have fallen out of fashion, as, for example, creative writing by aphasiacs.

researchers of the interaction between cognition and emotion, which is a major focus of current interest. As to the other handbooks in our corpus (Denes / Pizzamiglio; D'Esposito; Kolb / Wishshaw; Goldstein / McNeil), suffice it to say that they share similar characteristics of relevance and centrality within their respective areas of interest.

A few words need instead to be added as to Gazzaniga's 1,300 page volume, whose topics range from ions to consciousness, from reflexes to social psychology and to such emerging fields as adult neurogenesis. There is a constant merging of fundamental aspects of human brain functions and of behavioural elements, which is Gazzaniga's distinctive contribution to the development of the neurosciences. The authors of its 94 chapters offer rigorous accounts of their innovative experiments, providing the latest findings in the field, together with an exciting preview of twenty-first century science. This MIT volume enjoys a unique status in the CogSci discourse community, so both the general preface and the introductions to its eleven sections were included in the corpus.

The textual analysis did not primarily focus on lexico-grammar but on the communicative mode of entire texts, in terms of shifting texture, semantic gradation and scaling. Electronic versions of the texts were mostly unavailable, so qualitative data were extracted from the corpus manually and classified according either to their chronology or AF categories.

3. *Textual data*

The results of this investigation highlight that in CogSci handbooks from the 1960s-70s there was more scope for speculative, exploratory and interactive language, so that the identities of individual leading researchers (not infrequently the sole authors of such handbooks) were more easily perceptible. Critchley's Introduction is a case in point. The opening paragraphs in *Aphasiology* (1970) illustrate the personal approach, with an example drawn from everyday life reported in a fluid narrative, so as to facilitate interaction with the intended audience:

XVI. Iteration of written and spoken speech: verbal tics

Like a tourist abroad who rings the changes in his conversation on the few phrases of which he is the master, so in the same way we clinicians meet patients who reiterate certain words, phrases or sentences to the exclusion of all others.

The discourse moves on to an analysis of pathologies involving a tangible shift in semantic and grammatical choices:

The circumstances under which these speech iterations occur are very diverse; some of the patients are frankly psychotic, others represent neurological problems. Sometimes they obviously form an aphasic disturbance [...]

Much more complex is the phenomenon of palilalia, originally described by Brissaud. This is essentially an organic manifestation associated with diffuse pallido-striatal disease.

The language of CogSci handbooks is today more neutral, and leading researchers are seldom the only authors, since the most common option is to have prestigious scientists acting as editors coordinating contributions from several other researchers. The excerpts in Table 1, taken from the introductions and the chapter openings of handbooks by different authors dealing with the same topic (language/aphasia) illustrate how it has been investigated and described at different times. As we can see in this selection, the research method has shifted from human observation and historic contextualization to an almost exclusive attention to the analyses and findings of contemporary medical technology (words in *italics* in the table), especially when syndromes and their diagnoses are involved. This process also entails a variation in terminology (underlined words). The thirty-year gap also highlights differences in the way scientific ‘truth’ is constructed so as to address the intended audience successfully (words in small capitals):

Critchley (1970)	Denes / Pizzamiglio (1999)
<p>IT IS A MATTER FOR SURPRISE THAT PHILOSOPHERS AND MEDICAL SCIENTISTS neglected for so long the subject of <u>disorders of the faculty of speech</u>. This is all the more strange in view of the speculative interest shown for well over two millennia into such recondite topics as the nature of language; the relationship between thinking and speech; communication with the animal kingdom [...] <u>debates</u> as to the rational views on the beginnings of speech as opposed to the hypothesis of divine origin; the nature of the original <i>lingua adamica</i> [p. 53]</p>	<p>SO AS NOT TO BE COMPLETELY EXTRANEOUS TO THE TOPICS IN WHICH CONTEMPORARY RESEARCHERS IN APHASIA are interested, it seems important to begin this chapter on the historical development of the concept of aphasia by referring to [...] the <u>aphasic syndrome construct</u>. [...] The aphasic syndrome construct is probably the one in which the facts [clinical/nosographical] and theories [theoretical] are most closely connected. [...] In most cases [syndromes] were detected through <u>clinical observation</u> [...]. In other cases, instead, the theoretical model clearly oriented clinical observation [p. 135]</p>
<p>THE STUDY OF APHASIA IN THE ADULT CAN BE ASSISTED BY COMPARISON OF THE DIVERSE KIND OF SPEECHLESSNESS ENCOUNTERED IN CHILDREN. [...] Up to now speech-development has been studied in Great Britain and America mainly by <i>educational psychologists</i> who have made an <i>intimate investigation of a single individual, or at most, a small series of cases</i> [...] Noteworthy assistance has also materialized from certain non-medical philologists, particularly Jespersen. Dr. Mary Sheridan approached the subject more from the standpoint of the phonetician [...] The names of Geselle, Lewis, Watts, Darwin [...] are important in this connection. [p. 144]</p> <p><i>Intimately linked with the conception of identity with language and thought, is THE CURRENT IDEA that aphasia is some kind of <u>disordered thinking</u>. This view correlates with traditional views as to 'endophasy' or internal speech [p. 234]</i></p>	<p>THE EFFECTS OF DAMAGE TO THE LEFT HEMISPHERE HAVE DIFFERENT CONSEQUENCES IN CHILDREN AND ADULTS, LEADING TO GREAT POTENTIALS FOR PLASTICITY and to better recovery in childhood aphasia (Lenneberg, 1967). The <i>exact timing of brain damage is probably a crucial factor</i>. Prenatal and early perinatal focal damage to the right or left hemisphere is associated only with mild delays in language acquisition (Bates <i>et al.</i> in press). <i>A recent study of children evaluated for epilepsy surgery</i>, in which the method of <u>electrical stimulation through chronically implanted subdural electrodes</u> was used to assess <u>cerebral language representation</u> (Dichonwny <i>et al.</i>, 1996) reported some unexpected results. [p. 166]</p> <p><i>The neurological and neuropsychological literature of the past 150 years PROVIDES EVIDENCE that the language disturbances due to <u>focal lesions of the brain</u> are sometimes associated with <u>disorders of conceptual thought</u> [p. 273]</i></p>

<p>HUMAN COMMUNICATION FUNDAMENTALLY STEMS FROM articulate speech [262] German dysgraphics – especially a generation or more ago – were apt to confuse their Gothic and Latin scripts [...] <u>the few cases of aphasia studied</u> among the Japanese HAVE SHOWN A TENDENCY for the <i>Kanij</i> or Chinese characters to be involved far less than the indigenous <i>Kano</i> script, probably because <u>the former is far more concrete</u> in nature [p. 272]</p>	<p><u>Some PET studies</u> HAVE INVESTIGATED the pattern of activation in Japanese subjects engaged in ideographic (kanji) or syllabographic (kana) reading. Kanij reading (Sakurai <i>et al.</i>, 1992), when compared to fixation, activated bilaterally, with a left sided prevalence [...]. Kana reading, of both words and non-words, <u>activated medial and lateral occipital regions</u> [p. 175]</p>
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Table 1. Shifts in terminology (1970-1999).

However, as mentioned earlier, there is also scope for ‘affective’ authorial attitude in certain textual *loci* of contemporary volumes. The appearance of such authorial *personae* can be ‘appraised’ using the AF subcategories of Attitudinal positioning (in particular AFFECT/JUDGEMENT/APPRECIATION) and other functional categories. It is perhaps worth remembering that these, especially APPRECIATION, may be implicit or explicit and are therefore not always decipherable as single words but require a delicacy of focus on texture. In (1) below, taken from Paul Ekman’s chapter introduction in Dalgleish / Power (1999:16), the scholar’s attitudinal positioning is conveyed by his argumentative attitude, which enhances authorial identity:

(1) AFFECT/JUDGEMENT

The argument about whether facial expressions of emotion are universal or culture-specific goes back more than 100 years. For most of that time the evidence was sparse, but in the last 30 years there have been many research studies. *That has not served to convince everyone, but it has sharpened* the argument. I will review the different kinds of evidence that support universals in expression and cultural differences.

JUDGEMENT/APPRECIATION

I will present eight challenges to that evidence, and how those challenges have been met by proponents of universality. *I conducted* some of this research and have been *active in* answering the challenges, *so I am not a disinterested commentator, but probably*

no-one is. I will try to present the evidence and counter-arguments *as fairly as I can*, so that readers can make up their own minds.

JUDGEMENT/APPRECIATION

It begins with Charles Darwin, “The Expression of the Emotions in Man and Animals” (1872/1998). His evidence for universality was the answers to 16 questions he sent to Englishmen living or travelling in 8 parts of the world [...] *Even by today’s standard that is a very good, diverse sample*.

In (2), from the Introduction in Kolb / Whishaw (2003: 1), an *exergue* is used to convey the authors’ attitude to the topic and to endorse their stance on the topic through reference to classical culture:

(2) AFFECT & ‘FACTUAL’ INFORMATION

[*exergue*] In Sophocles’ (496–406 B.C.) play “Oedipus the King”, Oedipus finds his way blocked by the Sphinx, who threatens to kill him unless he can answer this riddle: “What walks on four legs in the morning, two legs at noon, and three legs in the evening?” Oedipus replies, “A human,” and is allowed to pass, because a person crawls as an infant, walks as an adult, and uses a cane when old. The Sphinx’s riddle is the riddle of human nature, and as time passes Oedipus comes to understand that it has a deeper meaning: “What is a human?” *The deeper question* in the riddle *confounds* Oedipus and remains unanswered to this day. The object of this book is to pursue the answer in the place where it should be logically found: the brain. The term neuropsychology in its English version originated quite recently, in part because it represented a new approach to studying the brain.

In (3), from the Introduction in D’Esposito (2003: 3), the major emphasis is on change, or rather on the timing of science as transitive action and positive progress:

(3) APPRECIATION – graduation

It is an *exciting time* for the discipline of cognitive neuroscience. In the past 10 years we have witnessed an explosion in the development and advancement of methods that allow us to precisely examine the neural mechanisms underlying cognitive processes.

APPRECIATION – change/progress

Functional magnetic resonance imaging, for example, has provided *markedly improved* spatial and temporal resolution of brain structure and function, which has *led to* answers to new questions, and the re-examination of old questions.

AFFECT/JUDGEMENT – graduation

However, in my opinion, the *explosive impact* that functional neuroimaging has had on cognitive neuroscience may in some ways be *responsible for* moving us away from our roots—the study of patients with brain damage as a window into the functioning of the normal brain.

AFFECT

Thus, *my motivation for creating* this book was to provide a collection of chapters that would highlight the interface between the study of patients with cognitive deficits and the study of cognition in normal individuals.

JUDGEMENT/ APPRECIATION – graduation

It is *my hope* that reading these chapters will remind us as students of cognitive neuroscience that research aimed at understanding the function of the normal brain can be guided by studying the abnormal brain [...].

The *incredible insight* derived from patients with neurological and psychiatric disorders provided the foundation for the discipline of cognitive neuroscience and *should continue* to be an *important methodological tool* in future studies.

IMPLICIT APPRECIATION – through repetition

Each chapter in this book was written by a neurologist who also practices cognitive neuroscience. *Each chapter* begins with a description of a case report [...] Each chapter then explores investigations using a variety of methods [...] *In many chapters*, there are conflicting data derived from different methodologies and the authors have tried to reconcile these differences.

IMPLICIT APPRECIATION – through repetition

The goal of preparing this book was not to simply describe clinical neurobehavioral syndromes. Such descriptions can be found in many excellent textbooks of behavioral and cognitive neurology. Nor was *the goal* to provide a primer in cognitive neuroscience. *The goal* of this book is to consider normal cognitive processes in the context of patients with cognitive deficits.

AFFECT – aesthetic APPRECIATION through direct address to audience

It is a privilege to have assembled an outstanding group of neurologists and cognitive neuroscientists to present their unique perspective on the physical basis of the human mind [...]. Unilateral spatial neglect is a fascinating clinical syndrome in which patients are unaware of entire sectors of space on the side opposite to their lesion. This clinical syndrome is produced by a lateralized disruption of spatial attention and representation and raises several questions of interest to cognitive neuroscientists. How do humans represent space? How do humans direct spatial attention? How is attention related to perception? How is attention related to action?

In (4), from the Introduction in Goldstein / McNeil (2004: xi), the semantics of graduation is highlighted by the use of modals:

- (4) AFFECT & 'FACTUAL' INFORMATION – graduation
Although often viewed as a specialty within Clinical Psychology, *it should be immediately apparent* that knowledge of neuropsychology (and its applications) is relevant to all areas of clinical work where people (across the age span) *might be* showing some change in their cognitive functioning.
- APPRECIATION & 'FACTUAL' INFORMATION – graduation
While *we would argue* that neuropsychological assessment should form part of the core skills acquired by all trainee clinical psychologists, our compilation of this volume is *based on the more realistic appreciation* of the training opportunities available to those who are both pre- and post-qualification, an *appreciation gained* through many years of being actively involved in both pre- and post-qualification training of clinical psychologists at the Institute of Psychiatry.

In (5), from the General Preface in Gazzaniga (2004: xiii), the emphasis is on the time of science as *Kairos*, which is the coincidence of propitious circumstances, opportunities and abilities, so that the mood is of enthusiastic optimism. Science is evaluated as a scientific and aesthetic achievement:

- (5) AFFECT/APPRECIATION – aesthetic/scientific – scaling intensity
This book represents the *combined effort of more than a hundred brain scientists*, each carefully *chosen to illuminate* one of dozens

problem areas within the field of cognitive neuroscience. Our initial meeting in 1993 launched this series of books, and *with its success* we met in 1998. Each volume has served as a *benchmark* for where the field stands at each of *these points in time*. At the end of the 2003 meeting, the meeting that produced this new book, *the field once again looked vibrant, energetic and disciplined. Cognitive neuroscience will be around for a long time.*

APPRECIATION – aesthetic/scientific

All of the talks were structured to include *cutting-edge research in support of a broader thesis*. Yet, when placed in the context of an entire section, each talk's individual significance expanded as common themes and discrepancies emerged [...]. *In this rich environment, largely removed from the daily rigours and pressures of advancing laboratory progress [...] we spontaneously began to link seemingly unrelated questions and sub-disciplines, excitedly discussing how a new generation of questions relating to the brain and behaviour could be addressed [...].*

AFFECT/APPRECIATION – aesthetic/social/scientific

Each of us left with a greater appreciation of how individual research fit into a larger picture [...]. It is our hope that this book capture that energy, so that all may appreciate this comprehensive and current view of a field that is moving forward at lightening speed.

4. Discussion and concluding remarks

Within the rich environment of English scientific communication (whether multi-genre, multi-media, global or web-wired) a corpus of handbooks on the same subject matter was investigated to identify continuity or change over time in terms of commonality/individuality in scientific discourse. Tangible, rapid progress in science and technology obviously entails changes in scientific methodology which need to be taken into account when studying communication. Four decades ago there was more scope for individual discursive features in scientific communication, despite the increasing pressure of scientific reporting conventions. The lack of tools such as PET (Positron Emission Tomography) for functional mapping of the brain made it necessary for

the clinicians to undertake prolonged observation of patients, leaving more space for speculation. This made a tangible difference in linguistic constructs and, as expected, in terminology (see Table 1).

In prefaces and introductions, however, the presence of an authorial *persona*, especially when the authors are famous researchers, appears to depend mainly on their status in the discourse community. In books (unlike research articles) these textual *loci* have often been used to promote a holistic type of communication with readers: such a feature represents an aspect of continuity with the past. The excerpt from Christie's (1970) introduction shows how tensions between individual and collective values and the need "to describe informally the genesis and development of an idea" can construe a common ground with the intended audience.

Four decades later, the communicative choices of authors in Gazzaniga (2004) follow a similar vein to Christie's, dominated by an affective attitudinal position towards ongoing research. Yet, at the same time, contemporary scientists often complain that referees of research articles eliminate (important) parts of their submissions on account of their being 'speculative' in nature. This is further evidence of the complexity of interaction between scientific-disciplinary content and its presentation according to expected discourse modes.

So far as CogSci handbooks are concerned, the textual evidence collected here shows both meaningful differences and aspects of continuity with the past. Continuity was found in the 'engaged' attitude of researchers, in terms of authorial identity. In prefaces and introductions of their handbooks, far from concealing their personal involvement, leading scientists highlight how their research fits into a larger picture, while engaging readers as participants in a situated social interaction. They use affective discursual features to negotiate and shape knowledge and research results from a personal perspective by explicitly appraising both individual and team work in a complex interplay of delayed adherence to generic norms and assertion of individual identity.

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