Memory, Media and Research: Mnemonic Oral-style, Rhythmo-stylistics and the Computer

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What is the Mnemonic Oral Style?

The nature and operation of the mnemonic Oral Style became apparent to Marcel Jousse (1886-1961), anthropologist, psychologist, linguist, ethnologist, educationist, theologian, through observation and investigation focused on the question:

> How does man, placed at the heart of all the immeasurable *actions of the universe*, manage to conserve the memory of these actions within him, and to transmit this memory faithfully to his descendants, from generation to generation? (Jousse 2000:30).

Jousse searched for and discovered

> ... the permanent and universal psycho-physiological laws, the anthropological laws, that unify what time and space and custom had separated in so many ethnic varieties. He consistently believed in and stressed a human, an anthropological continuity, refusing to see writing as a dividing invention in the history of humanity. To him, writing had not created a hiatus between oral- and written-style man, between orality and literacy, but the civilisation of writing was preceded and shored up by an Oral-style civilisation. And as style implies laws of expression, it was his aim to unearth these stylistic laws from beneath written texts or to discover them wherever the absence of writing had left them intact (Sienaert 1990:93).

Jousse's search exposed him to the cultural expressions of a range of peoples

through time and across space. He was himself the product of what he termed a *paysan* milieu. He was born into a community of small-hold farmers and labourers the majority of whom had had a minimum of formal schooling but whose extensive traditional and indigenous knowledge was used on a daily basis to conduct personal and community business. He applauds their remarkably accurate and extensive memorial capacity for their oral tradition and for functional day-to-day matters, their prodigious knowledge and wisdom, and their intellectual capacity to accommodate and relate the abstractions of thought to the concrete reality of action. In a community largely without written records, the memory is paramount. Jousse records his first—and lasting—encounter with the rhythmo-mnemonic texts of his mother's lullabyes:

> I have repeatedly claimed that I owe my contribution to these scientific discoveries to my mother .... no sooner was I born, than cantilenas were being sung over my cradle. My mother had an extraordinary memory. As she was an orphan, she was raised by her totally non-literate grandmother, who taught her her own personal oral repertoire of the ancient cantilenas of the Sarthe region. My mother, who went to school for three winters only, never saw these cantilenas in any written form. In infancy, I came to consciousness amid the rocking motions of these cantilenas, and, even now, whenever I reflect, it is those very first rocking motions that I relive within myself. It is both strange and significant to discover the extent to which those first rhythmic experiences influence the whole of a human life. My hypersensitivity to the role of rhythm can only be attributed to this training which took place even before my consciousness was fully awakened. The rocking of the rhythm of those songs, and the songs themselves, inevitably informed the whole infinitely extensive system constituted of my receptive fibres (Jousse 2000:15).

Jousse's early encounters with prodigious memory capacity extended into the community, and he records in telling (and, for some of us, familiar) detail the gatherings of communal song, dance and storytelling:

> As the evening progressed, and as the paysans got more and more into the swing of things, they would get up and strike up a song. I could feel that the rhythms imbricated in me by my mother's songs,

responded to the deep 'rhythmisation' of all these paysans. This was not so much song as a kind of chanting singsong. They all had large repertoires. The people, and more specifically, the women, who knew the most songs were the old grandmothers. They were extremely interesting to observe, because they were passionately particular about accuracy. Thus when someone began to intone one of these chants and dared to introduce a variation, one or other of the old ladies, (and I can once more picture good old mother Guespin in her corner), would reprimand the reciter and say: 'It's not that word, but this!' (Jousse 2000:16-18).

It is easy to appreciate that this early experience of the operation of memory as human socio-cultural archive of indigenous knowledge impacted on Jousse's eminent scholarship throughout his life. Jousse records the problems in education arising out of the adoption of 'only the teacher's point of view', (Jousse 2000:18) which assumes the 'professorial equation' of learners' 'prelogicality' and regards those who cannot write scribally—the 'illiterate'— to be inferior to those who can—the 'literate'. His position is

> ... exactly the opposite and unlike so many other psychologists and philologists who have lived with the printed word from the very beginning of their training. They have graduated from schoolbooks to this or that somewhat larger book, from matriculation to bachelor's degree or doctorate—how could they have the slightest notion of what the training of the human memory means? I have observed that in our society people feel somewhat ashamed to admit that they have lived in a non-literate milieu. What a mistake! .... I owe all my references in my lectures to examples taken from nature, to those non-literate paysans. They accustomed me to be wary of the fine speeches of those who speak brilliantly about everything but know nothing. Paysans smile quietly to themselves in the presence of fine talkers of this kind (Jousse 2000:18).

From which, Jousse concludes that:

> Those who have made genuine discoveries and have contributed to science, are those who have put their books aside and started their study from reality. I will constantly reiterate that my first scientific

training was this contact with the paysans of Beaumont-sur-Sarthe (Jousse 2000:18).

Jousse discovered the non-exclusivity of the memorial capacity of his own ethnic community by the time that he was fifteen years of age. By then he had accessed in the written record of the Aramaic Besoreta or Oral Annunciation, the records of the Sayings and Deeds of the Rabbi Ieshou'a of Galilee[1]. In them he recognised the same rhythmic structures that informed and formed the songs and proverbs, stories and liturgies of his native soil. Thus encouraged, he sought to access the oral traditions of peoples from around the world, by personal experience and by interrogating the observations of missionaries and traders. Significantly he came into contact with a group of First Native Americans of whom he made the following observations:

> And there I was able to study, and learn to appreciate, the remnants of their mimographic writing and their marvellous gestual language, of which there is still so little known, and which is so misunderstood. In this way I was able to observe the *living* connection that exists between the significant mimic gestes of the Sumerians and Ancient Egyptians, and those of the Indians, and even of the present-day Chinese, who have, fortunately, notwithstanding the changes that have occurred over the centuries, preserved the natural appearance of objects in their written 'characters' to the greatest possible extent (Jousse 2000:24).

In short then, Jousse's lifelong work was

> ... to uncover the laws that govern this universal human language from under ethnic particularities, to identify the characteristics of the expression that flows from it (and which constitutes what he calls oral style) and to examine how this oral style can revitalise education and expression of faith ... (Sienaert 1990:94).

Jousse begins by identifying the 'original language as corporeal, it is the expression of the whole body, of the entire being of the whole of man'

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[1] Jousse insisted that Jesus of Nazareth be named by his original Aramaic name: Ieshou'a.

(Sienaert 1990:96). Jousse identifies that the corporeal-manual mode of expression is that which is immediate to the inner microscopic reality of human thoughts and emotions, *viz.* the body and hands serve as an interface between the thoughts and emotions recorded in the viscera and their 'ex-pression' in movement, mime and dance. Jousse identified this as the least reduced of the modes of transmission, and therefore the most faithful form of human communication. Jousse then identified further reduction in the localisation of expression from the body and hands (corporeal-manual) to another immediate mode of 'ex-pression', the larynx and the lips (laryngo-buccal), in sound, speech and song. Sienaert (1990:96) comments that:

> The shift from mimic global corporeal and gestural language to laryngo-buccal language is a vital one, for at this point [the human] moves away from anthropology into ethnology: the initial global universal and spontaneous mimage becomes localised conventional and socialised *langage* (Sienaert 1990:96).

Sienaert goes on to observe that

> Jousse's ethnic laboratory reveals to him beneath a great diversity of cultural, social and linguistic mechanisms, underlying unchanged anthropological laws—common strains in graphic and oral testimonies which form a style: the Oral Style (Sienaert 1990:96).

The Oral Style is constituted of Mimism, Rhythmism, Bilateralism, and Formulism, (Jousse 1990, 2000, 2001) which is 'profoundly rooted in the body, hence its great efficacy from the mnemotechnical point of view for in it the movement of the body and voice contribute to the shaping of thought in memorisable form' (Sienaert 1990:97).

> Le Rythmo-mimisme: the law of rhythmo-mimism. [The human] is a mimic; he receives, registers and replays his actual experiences; as movement is possible in sequence only, mimicry is essentially linked with rhythm.
> Le Bilateralisme: The law of bilateralism. [The human] can only express himself in accordance with his physical structure which is bilateral—left and right, up and down, back and forth—and like his global and manual expression, his verbal expression will tend to be

bilateral, to balance symmetrically following a physical and physiological need for equilibrium. Hence the omnipresence of parallelism in oral style not just in form but also in thought as the recurrent recourse to comparison and analogy shows.

Le Formulisme: The law of formulism. The biological tendency towards the stereotyping of gestures creates habit which ensures immediate, easy and sure replay; it is the facilitating psycho-physiological device as it organises the intussusceptions and the mnesic replay in automatisms, acquired devices necessary to a firm basis for action. Formulism is the storehouse linking in with memory in order to maintain firm teaching, founded on faithful tradition. In oral style, stereotyped formulas can be juxtaposed in new, more or less original combinations, although these will always accord with the physical laws of the body from which they arose (Sienaert 1990: 96-7).

The mnemonic Oral Style as Jousse perceives it records and expresses the sophisticated complexity of creative composition in performance that accommodates the wisdom of oral traditions: the *hokmah* of the ancient Galileans, the *sophia* of the Greek orators, the *ubuchule* of the nguni *imbongis*, and their equivalents among the eastern *sufis* and the African *griots*.

The holistic, dynamic three-dimensional nature of the performed mnemonic Oral-style presents particular challenges to the processes of recording and analysis in research.

The Aim of Research of Mnemonic Oral-style Texts

Mnemonic Oral-style texts reflect the ways in which human identity is recorded in memory and performance at the intersecting levels of the individual, the group and the species without writing. Research of this medium includes recording and analysing the explanation of oral traditional 'memories' performed as rituals and dance in movement and gesture (the corporeal-manual mode), protest, slogans and praises, narratives, epics and fables, negotiations, genealogies and histories in sound, speech and song (the laryngo-buccal mode); beadwork, masks and sculpting, rock and house painting as forms of writing (the mimographic mode[2]).

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[2] The mimographic mode: algebrised and mediated human expression, i.e. 'writing' in many forms.

These expressive behaviours, most of which have been over-simplistically identified by their aesthetic form as 'art', 'poetry', and 'craft', actually perform a no less important function than that of recording the structure and norms of civilisation: the socio-cultural archive. Traditional Oral-style texts record and teach beliefs and belief systems, ethics and values, and legal and fiscal systems. They record histories and genealogies, provide social commentary, impose social norms, mores and taboos, and inform and train occupational skills all of which differ from ethnic milieu to ethnic milieu in a multitude of details but all of which hold human memory as the preferred mode of archive or record, even in milieus which are literate. But in all Oral-style milieus there comes a time when the oral socio-cultural archive is committed to writing, a process which is neither as innocent nor progressive as it appears to be.

Jousse (2000) frequently alludes to the mortifying effect of inert writing on the vitality of performed oral texts. This is essentially a translation problem which manifests itself at both the oral-literate and interlingual interfaces. A preoccupation with such problems is recorded in the work of numerous researchers in the field: Foley (1996) records the 'impossibility of the canon in the oral tradition'; Chamberlin (1998) refers to this problem of '[p]utting performance on the page', highlighting the incongruity of the two dimensional page capturing the holism of oral performance; Ruth Finnegan (1990) likewise discovers that she cannot recapture the 'magic' in her written records of performance in the field; Neethling (1998) examines the authenticity of the voice of Black Elk in the work of John Neihardt and Brown (1998) critiques Lucy Bleek's records of the voice of the Xam bushmen, and then renders the texts, not unproblematically, in what we would recognise as free verse.

Another factor contributing to the problem is that what is immediate, familiar and commonplace is often overlooked as of no scholarly or epistemological significance:

> Distinguishing these features of oral art—or at any rate of some oral art—not only led to opening up new questions about texts ... but also provided a foundation for cross-cultural comparisons through which scholars could connect previously separate and apparently unrelated studies. The development of the consequent comparative movement— extremely influential now across the world—gave scholars from a wide range of different disciplines new insights and a new confidence

in studying material which before might have seemed somewhat peripheral to serious academic scholarship. As such it has led to a huge body of well-founded scholarship (Finnegan 1990:132-133).

A further consideration is the 'point of view' of the researcher in oral traditions. Reflective insider 'microscopic' (Jousse 2000), 'emic' (van Eck 1995), 'implicated' (Stoller 1996) observation provide authentic and valid insights. The 'outsider' perspective distorts meaning of what is observed, because the onlooker or outsider perspective of a text cannot be fully informed of the embedded implications. Stoller (1996) maintains that scholarly investigation needs to be 'implicated' in the object of research to achieve authenticity and validity. Further, the removed view of the 'outsider' researcher runs the risk of the twin ills of 'invention' and 'imagination'. Jousse records that he sets 'about gathering facts, slowly and methodically, taking great care not to invent any perceptions or evidence' (2000:31) and that it is 'dangerous ... in scientific matters to *imagine* instead of to *observe*' (2000:35). Taking the outsider view fails to achieve the desired objectivity, because it is inevitably coloured by the researcher's personal, cultural and academic worldview and perspective. Rigby demonstrates how the 'outsider' worldview contributes to racism in anthropology (1996), and Vail and White identify this as the key to the 'invention of "Oral Man"' (1991), thus focusing the problem at the oral-literate interface.

Human capacities for oral-literate expression and the consequent worldviews are simultaneously and paradoxically inextricably interdependent and mutually exclusive: uninitiated 'literates' are no better at reading and interpreting the performance of traditional dances and rituals of an oral milieu, than the uninitiated 'oralites' are at reading and interpreting scribal written texts. Further, human potential *per se* is not enough: capacity must be realised to be useful and measurable. Reading and interpreting any text is a learned behaviour, whether that text is composed of traces of animal 'presence-in-absence' in the sand, or traces of human 'presence-in-absence' on paper. Capacity to read either text does not automatically imply the capacity to read the other, notwithstanding evidence that both are operated by the same cognitive capacity, used by humans to the end of 'reading' for the last thirty thousand years (Chamberlin 2002).

Further conundrums present themselves. Logically it would follow that capacities for specialised forms of expression would be recognised and valued in the context of specified milieus. So scribal writing would be valued

and confer status in those societies that favour scribal literacy, and the mnemonic Oral Style likewise in Oral-style milieus. But such is the tapestry of human society that no such neat divide exists, and the oral-literate interface increasingly exists within contexts of blurred edges and confused perspectives and so what is logical does not prevail. In part, this can be attributed to issues of capacity and worldview. Being without a capacity renders one blind and deaf to that incapacity, until one experiences otherwise, hence we are blind and deaf to the worldview of the 'other'. Were the political playing fields of the world of the oral-literate interface equal, this would render the 'illiterate' and the 'in-oral-ate' equally advantaged or disadvantaged in the 'other' milieu. It seems strange and ironic then, that even though it is estimated that 70% of the world's population is scribally illiterate, scribal literacy holds hegemonic sway. But we must remember that scribally illiterate does not automatically mean 'oralate', or having the capacity to operate the mnemonic Oral Style: quite the contrary for the deceit afforded scribal literacy is that it 'remembers' when it actually merely 'records'. Consequently, the world is increasingly populated by people who are neither literate nor 'oralate' in the mnemonic Oral-style sense: they have neither the 'power of the pen' nor the 'power of memory'. In a sense they are robbed to a significant extent of the human birthright of a full range of human expressive capacity. In a world which is increasingly dominated by technologies that are intrinsically literate or literacy dependent, the worldviews of the 'literate-inoralates' hold sway. Being blind and deaf to the 'geste and rhythm of the oralate' cannot but impact on the validity of research of mnemonic Oral-style texts.

What are the Problems Related to Research Method in Mnemonic Oral-style Texts?

Accessing mnemonic Oral-style texts from an academic literate viewpoint is a contradiction of considerable proportions, as the intrinsic natures and functions of the scribal and gestual-visual/oral-aural modes challenge and even exclude their mutual substitution. To demonstrate this viewpoint, I will examine and compare (1) mode(s) of expression in which oral traditions are performed, with special reference to the mnemonic Oral Style (Jousse 1990; 2000; 2001a; 2001b): the performer's perspective; (2) the mode(s) of expression in which research is carried out: the researcher's perspective; and (3) modes of record of mnemonic Oral-style texts: the recorder's perspective.

Mode(s) of Expression in which Oral Traditions are Performed with Special Reference to the Oral Style: The Performer's Perspective

Oral traditions are expressed in the gestual-oral mode as a matter of intrinsic function and identity, and are the product of human behaviours that favour the gestual-oral mode (even in scribally literate milieus) over the written mode for a number of reasons.

The gestual-oral mode is a performed mode which is indivisible from its visual-aural reception, and its accompanying material representation, hence the identifying term 'gestual-visual/oral-aural' which is holistically and immediately expressive. This form of representation includes: (1) movement, mime and dance (the corporeal-manual mode); (2) sound, speech and song (the laryngo-buccal mode); and (3) material attire and domestic, personal, socio-cultural objects as media of expression (the mimographic mode). Mnemonically structured, the Oral-style text is psycho-biologically holistically engaging thus intussuscepting its meaning through performance in the viscera of the performer, and effecting 'apprehension' or 'understanding with the whole being'. Such mnemonic intussusception ensures longevity of memorial record. The nature of the psycho-biological record is energetic, and exists internally in the human viscera in the form of what Jousse terms 'microscopic geste' (Jousse 2000).

The gestual-visual/oral-aural mode is more immediate and spontaneous than the literate mode. Its immediacy arises in the first instance from the performer's relationship with him/herself and the performance, the space and time in which the performer performs and from the face-to-face interaction between performer and audience during the performance. This influences the spontaneity of the performance: the performer can adjust his/her performance immediately according to his/her own responses with him/herself simultaneously with the responses from the audience. In effect, it can be argued that each performance is the unique product of the interactions within the performer and between performer and audience, and is therefore the product of simultaneous personal introspection and group authorship. In this way, multiple authorships and occasions of authorship are intrinsic features of the oral tradition. A record of such a group-authored performance is only complete, faithful and authentic if it accounts for the performed text within its performance context and taking the audience engagement into account.

The gestual-visual/ oral-aural mode—implying group interactive

authorship during performance over an indeterminate period of time—performs social and moral norm-referencing and cohesive functions within the relevant group. Simultaneously, the use of the gestual-visual/oral-aural mode implies the recording of traditions in human memory, which enables portability and immediate access, dependent upon the capacity of the memory, which is particularly important for itinerant peoples in all ages and societies. In milieus that have not yet developed scribal literacy, the mnemonic gestual-visual/oral-aural mode is used universally for the transmission of traditions. Settler environments with and without scribal literacy variously present and record oral traditions in mimographic mode, i.e. in forms of expression that record the traditions in fixed forms of pre-literate 'writing', such as various forms of painting, sculpting, carvings, weaving and pictographs, *inter alia*.

The Mode(s) of Expression in which Research is Carried out: The Researcher's Perspective

Academic research is historically a scribal/literate exercise of a specific and high order, for a number of reasons. Scribal literacy fixes large amounts of information outside of the human author(s) for dissemination across time and space. It also allows for the revision of a text before transmission, thus providing for refinement and concision of complex thinking, as well as allowing the modification and further refinement, revision and concision of the text even after its original transmission. Scribal literacy allows for the identification and prescription of appropriate genres or structures by group consensus, where the decision-making group is that body of people closely associated with the production of writings in the relevant genre. It also allows the writing to exist on paper independently of its author, and for this reason becomes a defined and identifiable entity in its own right, which can be analysed and critiqued independently of its author(s) and in and on its own terms. Finally, scribal literacy frees human memory from the task of extensive record keeping, the benefits of which are ambiguous and debatable.

While the scribal record captures and records aspects of the linguistic elements of the performance, i.e. the actual words are recorded, it does not record the dynamic vitality of the performance as an indivisible whole manifest in (1) the kinaesthetic features, i.e. movement and gesture; (2) the spatial features, i.e. line, form, shape; (3) the paralinguistic and non-verbal aural features, i.e. non-verbal sounds, pitch, inflection, timbre, emphasis, vocal modulation; (4) the temporal features, i.e. pace, pause; (5) the interactive features, i.e. the responses of the audience.

By virtue of the transitory nature of the gestual-visual/oral-aural mode(s) of record, oral traditions are subject to the vagaries of human endeavour and survival. Disease, pestilence, oppression, war, and technology, *inter alia* all inform and threaten the survival of Oral-style traditions. In the face of these threats and notwithstanding its shortcomings, it can be argued and demonstrated that the scribal recording of Oral-style traditions is preferable to their disappearance.

Modes of Record of the Mnemonic Oral Style:
The Recorder's Perspective

Various modes of recording have been used (or suggested) to capture Oral-style traditions for analysis and research. Broadly speaking, verbal elements have been recorded in writing, while voice and music have been recorded on audiotape, and movement and dance on videotape and film. Although material expression in the form of artifacts, such as carving and statuary, beadwork and cave and wall painting are intrinsically their own records, their lack of portability has resulted in them also being 'recorded' in writing. The mode of representation of Oral-style traditions has taken so many forms and fallen into so many intersecting categories that the field defies classification, resulting in the realisation of the problems with 'putting performance on the page' (Chamberlin 1998). Even a cursory indication of what has led to that realisation is instructive.

Any form of verbal narrative whether historical or literary falls prey to the kinds of issues which Finnegan refers to as the 'problematic and decision-laden nature of text-processing' (Finnegan 1992:90). Problematic decisions include the choice of medium of recording. 'Literary' records belie the nature of the performance and give rise to the kinds of challenges implicit in 'Does Black Elk Really Speak?' (Neethling 1998) or represent the performance in a cultural mode that is foreign to the original (Brown 1998). Oral 'histories' face challenges of veracity and provenance (Parker 1986). The page as used in literary and linguistic analysis and historical recording simply does not accommodate gestual-visual/oral-aural performance, which presents the researcher with most particular challenges. So what are the alternatives?

Video and audio recordings capture the gestual-visual/oral-aural modes of performance of oral traditions, but this medium only partially captures the elements of context that impact upon the performance of oral tradition, and with which the performer interacts. The limitations of video-

and audio-recordings of gestual-visual/oral-aural modes of performance are numerous. The technological expertise and personal viewpoint of the recorder creates a context in which the message is recorded and interpreted. Maintenance of the records requires special expertise and is costly and access to the video-recorded records is limited by the technology.

Posters and photographic records capture and freeze the gestual-visual geste, but without movement and sound the record is woefully incomplete, and must be supported by extensive verbal texts to minimise misinterpretation. Such records are also cumbersome, expensive and difficult to archive and maintain.

Aural linguistic analysis accounts for the oral-aural mode, as opposed to the literate mode, and is not yet developed (Alant 1996). Most importantly, it does not account for the gestual-visual mode of the mnemonic Oral Style. The recording or capture of movement—the gestual-visual mode of expression—for the purposes of replication at some later time, has been addressed variously. Examples of these include, Jasmine Honore's (1986) 'Towards a Transcription System for Xhosa Umtshontsho dances', and Rudolf van Laban's 'Labanotation' or 'Choreutics' also in the latter half of the last century (Laban 1980; Hodgson & Preston-Dunlop 1990). Both Honore and Laban rely heavily on a system of diagrammatic representation which plots the body's relationship with the space in which the performer moves. In Honore's representation, the diagrammatic representation is accompanied by a verbal text of explanation. In 'Labanotation', the relationship between the performer and time, and all to the energy of the performance are represented. The whole is a layered and complex requiring extensive training to record and interpret.

Saussy (1996) and Sienaert (1996) both remind us that there is a need to consider rhythmography as a mode of recording dynamic mnemonic performance. As research mode and record, Jousse developed Rhythmo-stylistics (Conolly 2000) and Rhythmography (Sienaert 1996).

Rhythmo-stylistic or Rhythmo-mnemonic analysis identifies the macroscopic gestual-visual/oral-aural mode of expression holistically. In other words, it enables the examination of that which is seen and heard in performed corporeal-manual (movement, mime and dance) and the laryngo-buccal (sound, speech and song) expression with Rhythmo-mimism as a single universal anthropological law. In so doing it also allows the identification of that which makes the text memorisable. Mnemonic features appear in performance in the Rhythmo-stylistic analysis, the first being the binary and ternary rhythmic schemas, followed by layers of patterns of repetition of

discrete elements, each reinforcing that which has gone before, and incrementally creating a mnemonic gestual-visual/oral-aural web which interfaces with the geste and rhythm of the human memorising psycho-biology.

Rhythmography records the Rhythmostylistic analysis and is in some way reminiscent of the 'Strategies for the Presentation of Oral Traditions in Print' (Montenyohl 1993) which attempts to record vocal inflection and emphasis using varying font sizes and faces. Rhythmography (Sienaert 1996) records the performed Oral-style texts in binary and ternary rhythmic schemas, which contain the mnemonic propositions of which the text is composed. As such on the page they look no more 'alive' than any other form of written record. They come 'alive' when the reader actually revivifies the rhythmic schemas by following the bilateral arrangement on the page with his/ her body and performs the rhythmic schemas, illuminating and transforming understanding of the recitative. As Jousse noted, as one moves the body rhythmically in a balanced way (Rhythmo-energetically), the vocal inflections of the voice automatically become melodic (Rhythmo-vocalism), and once one has repeated a recitative in this fashion even as few as four times, one is able to perform confidently even in a language that is foreign to one's linguistic repertoire, thus demonstrating that the 'Anthropology of Geste and Rhythm' (Jousse 2000) identifies an expressive capacity and function that underlies and underpins verbal language.

Jousse's Rhythmo-graphic record of the Rhythmo-stylistic or Rhythmo-mnemonic analysis does not exclude the use of aspects of other approaches for recording, e.g. film, video, audio, posters, photographs, material objects, but we cannot escape the limitations of the media in capturing and analysing all aspects of the gestual-visual/oral-aural mode.

What is the Role of and Challenge to the Computer in this Scenario?

The computer facilitates the Rhythmographic recording of Rhythmo-stylistic analysis and representation by accelerating the replication of the Oral-style text at each level of repetition: this drawing and replicating function, while not profound, is significantly labour-reducing making an otherwise impossible task 'do-able'. The computer facilitates the recording of levels of text with the use of the colour functions, and demonstrates the centring of texts and the balancing of rhythmic schemas of two or three pitgamas in 'boxes', thereby

simplifying the process of recording Rhythmo-stylistic analysis because of the numerous functions which can be performed quickly and effectively. At the extreme of simplicity, these include the capacity to cut/copy and paste, draw and fill text boxes, centre the text on the page, and colour-code text so that the oral-aural mnemonic web becomes visually explicit (Conolly 2000).

At the more complex end of the spectrum, the use of hypertext, 3D, and Virtual Reality enable the replication of performance on the computer screen albeit the enormous byte size restricts the amount of performance that can be recorded in this way.

The Piero Project (Alexander 1997; Lavin 2002) 'succeeded in displaying and navigating through three-dimensional space while retaining instant access to the spatial context, detailed images and all relevant factual evidence' (Alexander 1997:1). *The Piero Project* demonstrates the computer's capacity to replicate a Virtual Reality into which the human can be immersed: the Virtual Reality moves around the human (Alexander et al 1996). The recording of the performance of the mnemonic Oral Style for analysis requires a capacity that is significantly different. It requires that the computer capture both the inner microscopic and outer macroscopic movement of the performer in three-dimensional Virtual Reality.

This is more than the capture of an image. Jousse avers that:

> Images do not exist. This term must disappear from our vocabulary. Following Draghicesco we will use the terms *revivification* and *reviviscence* rather than imagination or image (Jousse 1990:27).

The exclusion of the concept/ term 'image' can be justified on the grounds that it is an exclusive concept/ term which refers only to that which is visual thus effectively excluding reference to auditory and other sensory stimulation. Jousse identifies that what we experience (see, hear, smell, taste, feel and intuit) in performance are not 'images' but the 'ex-pression' of motor impulses—movement—hence 'geste and rhythm' (Jousse 2000). Brunel too notes that his 'work began with a refusal of the image as a working element, and an emphasis on the key aspects of movement in real space.' Both Jousse and Brunel focus on 'movement' as the element central to human expression, that which the computer is best suited to capture because of the dynamic nature of its recording capacity: what Brunel (2002) identifies as 'a fluid phenomenon', 'a process that cannot be stored. It is a process running in the moment. It is a happening'.

But can the computer capture and record human performance in ways that approximate human capacity?

Brunel (2002) claims that:

> It is now possible to create theatre and dance movements by computer. The advances in new technology that create a world dematerialised by digital media also opens new opportunities for live performance to (re)discover the nature of its physicality, its materiality (Brunel 2002).

By a simple extension of logic, one can anticipate the computer's capacity to translate the moving images photographed by a digital camera into a rhythmo-stylistic record of a performed text revealing the underlying rhythms, balances and formulas in a dynamic rhythmo-graphic representation for analysis. This is in effect 'the study of the rhythmic aspects of the person-computer interface' or 'man and the computer coming together in time', for which Orr (2000) coins the term

> Anthropocybersynchronicity, and considers this aspect of the 'person/machine interface' largely unexplored, but which holds great promise .... Untapped aspects of our being can greatly enhance the contact between people and computers. The secret: Rhythm. Human scale rhythms—visual, auditory, and kinaesthetic—can and should be incorporated into the design of effective computer systems (Orr 2000).

Such a clear demonstration of the mnemonic Oral-style elements and their operation will accommodate the kinds of analysis that are needed for a more complete understanding of the mnemonic nature of traditioned Oral-style texts that have survived generations of recitation as a reliable and valid record. Such an analysis and demonstration will in fact allow us to establish which rhythms and patterns are the most enduring and reliable. These insights will also help us to understand the operation of the Oral-style text as writing of a visceral kind, and of this visceral writing as memory as a psycho-biological phenomenon. Such an understanding of memory extends beyond the architectural visual memory of Yates (1966), Clanchy (1979) and Carruthers (1990). It embeds memory and intelligence in the 'wax tablets of your mind' (Small 1998:244), in the body as Keller records:

> Before the arrival [of my teacher] says Helen Keller in her simple way,

> when I wanted an ice-cream (which I liked very much), I felt a delicious taste on my tongue (which, by the way, I have never since experienced) and felt the handle of the ice-box in my hand; I made the appropriate gesture and my mother understood that I wanted ice-cream. I thought and wanted things with my fingers and if I could have made a man, I would certainly have placed his brain in the tips of his fingers (Jousse 1990:28)

... and throughout the psycho-biology of the human being as Pert observes:

> These recent discoveries are important for appreciating how memories are stored not only in the brain, but in the psychosomatic network extending into the body, particularly in the ubiquitous receptors between nerves and bundles of cell bodies called ganglia, which are distributed not just in and near the spinal cord, but all the way out along pathways to internal organs and the very surface of our skin (Pert 1997:143).

Pert further comments on her observations of psycho-biological behaviours:

> I was beginning to realize that the receptor changes shape, switching back and forth between any number of predominant configurations, all the while vibrating and swaying to some as yet unknown melodic key (Pert 1997:84).

The 'vibrating' and 'swaying' to a 'melodic key' constitute the microscopic rhythms and patterns of the anthropological microscopic construct that enables macroscopic performance of the mnemonic Oral Style.

Pert (1997) demonstrates that the rhythms of the receptors are measurable bio-physiologically. The question remains whether it would be possible for technology to measure the same rhythms energetically and replicate a substrate of these rhythms in the computer. Should this be possible, it would indeed be possible to put the resultant rhythmic performance on the page—or in this instance—on the computer screen.

To what extent is this possible given the nature of human rhythm and the limitations of the computer? To answer this question we need to examine the possible congruencies between the human 'Real', the mnemonic Oral Style, and Virtual Reality (VR).

The 'Real', the Mnemonic Oral Style and Virtual Reality (VR)

Jousse perceives that what is the inner 'Real' is that which is 'in(m)-pressed' in humans by the universe, contextualised in the experience of previous 'in(m)-pressions, events which constitute the psycho-physiological context of each succeeding text. The 'Real' is the individual and idiosyncratic human 'take' on reality, for no matter that two or more will be present for a single event, the prior experiences of each will colour the understanding of each. Jousse identifies this inner 'Real' as a 'complexus of geste' (Jousse 2000:24), an energetic, vibrating and rhythmic collection of all experience which constitutes the memorial essence of the individual with which s/he identifies him/herself and by the expression of which s/he is recognisable. Hence we have Jousse's perception of the 'Real' being microscopic—intimately and immediately individual, inner, apparently silent and invisible—awaiting 'real-isation' in a form of translation, into the macroscopic 'ex-pression' of sensory human communication.

Quoting the cognitive psychology usage of the term 'intimacy' to refer to 'the portion of the field of view occupied by a phenomenon', Negroponte (in Orr 2000) identifies 'intimacy' as the logical sequel to personal computing in which 'immediacy' is the key. Orr observes that 'in most VR applications, the virtual world takes up the entirety of the user's field of view, intimacy is total: the user feels entirely 'inside' the VR 'world'.

Where Orr's notions of 'intimacy' and 'immediacy' place the individual in Virtual Reality, Jousse's 'Real' is the immediate experience by the individual of his/ her microscopic geste—that collection of experiences 'in-pressed' by the immediate external environment on the 'immediate' and 'intimate' internal environment of the psycho-biology of his/ her being. This 'Real' will include, *inter alia*, all texts recorded in memory to be performed in the mnemonic Oral Style. At the first remove, these must be 'ex-pressed' in a translation from a state of the inner microscopic rhythmic geste of (un/sub)consciousness/ intuition to the outer macroscopic rhythmic geste of (un)conscious performance. In the instance of the Oral Style, the mnemonic laws and mnemotechnical devices will hold the construct and assure its reliable and faithful performance.

What indications are there that the computer is able to measure and replicate the vibrations which (in)form the microscopic geste and its translation into macroscopic performance?

Orr (2000) identifies the capacity of a range of 'nominally anthropo-

synchronous' rhythmical uses of computers, including the capacities to translate the inner human 'Real' to externalised performance via the computer instead of the human body. Orr demonstrates that the human can 'operate' the computer by 'changing brain wave patterns (through visualisation or other means), or by looking in different directions' (Orr 2000:4)—by activating consciously, in Jousse's terms, the inner microscopic geste or 'Real'.

Theall (1997:2) reminds us that the researchers of the MIT Media Lab conceive of a VR 'composed, like the tribal and collective 'global village,' of the 'tactile, haptic, priopreceptive and acoustive spaces and involvements' as one of the more recent points along the 'road to VR' informed by poetic and artistic experimentation including those of 'avant-garde movements, (such as the Dadaists, the Bauhaus, and the Surrealists) and of individuals (such as Marcel Duchamp, Paul Klee, Sergei Eisenstein or Luis Bunuel)'. Theal notes that Joyce 'also explores similar aspects of motion, light and movement, gesture and concept'. And that

> The road to VR and MIT's Media Lab begins with poetic and artistic experimentation in the late nineteenth and the early twentieth century; later ... many of the media lab researchers of the 60's and the 70s— placed great importance on collaboration with artists involved in exploring the nature and art of motion and in investigating new relationships between sight, hearing and other senses (Theall 1997:2).

Theall explores the 'Joycean view which grounded communication in tactility, gesture, and CNS processes, rather than promulgating the emergence of a new oral/aural age, a secondary orality' (1997:3). MIT's AI lab takes the Joycean view a realm further in the early 2000s. An examination of the titles of current research projects reveals a preoccupation with tactility and gesture, but this time with the view to replicating these capacities in computers, not merely by computers. In other words, this means that while the 1960s and 1970s saw computers with the capacity to replicate the performance as a medium, the 2000s envisage a computer that replicates performance of its own accord.

It is clear that the business of performance, of movement, is very much at the forefront of investigative thinking. This means that such investigators in VR have already established for themselves that the business of words follows the business of the body in human intelligence and communication, and that until the business of the body as communicator and performer has been established there is little point in trying to replicate the verbal aspect of communication and performance.

Further limitations must include perceptions about human/ computer intimacy. Human intimacy even in computer terms goes far beyond the field of vision and includes what Orr (2000) identifies as the 'visual, auditory and kinaesthetic'. The kinaesthetic sense implies both the tactile and the kinetic, both touch and movement, and that movement in three dimensions. Once again, it is not so much the capacity of the computer that is challenged as the receiving space of the projected transmission. The whole-body three-dimensional experience of human movement simply does not transfer on to the two-dimensional surface of a computer screen.

Limitations are complicated by dilemmas. The kinaesthetic sense implies the source of human energy: the human heart. Here, Orr (2000) identifies the capacity of the computer to hook into the heart rhythms of the human computer operator, which is dangerous precisely because computer rhythms simulate human rhythms closely but not completely: humans will be hard put to discriminate between the 'Real' and VR. But the distinction remains, and it is a distinction where the least replicable element of this imitation/simulation process comes into play: the human breath. For the human heart and the capacity to breathe are indivisible, and it is the oxygenated heart that energises the performance of the living Oral-style tradition. Paul tells us, 'For the spirit giveth life and the letter bringeth death', the 'spirit' being the anthropological 'breath', the Aramaic 'rouah', the Greek 'pneuma', the Zulu 'moya', the Hindu 'prana'.

Limitations and dilemmas notwithstanding, the focus of VR and computer graphic research on the recording of movement as energetic vibrations implies the recording in Virtual Reality of the micro- and macro-scopic geste of the mnemonic Oral Style. This could enable the identification and measurement of the 'textual atoms' (Conolly 2000:360) which constitute mnemonic texts and which support and enable human memory.

Conclusion

This article has examined the form and function of the mnemonic Oral Style, the difficulties attendant upon its research, and the possible role of the computer in establishing a better understanding of its operation and the operation of the human capacity of memory and performance.

Even superficial observation and analysis of the mnemonic Oral Style has demonstrated that it operates rhythmically and formulaically in a series of balancings and repetitions of various, layered and self reinforcing

constructions. The quantifiable measurement of these mechanics will reveal much about how the human mind operates to further answer the question that Jousse posed at the outset of his research:

> How does man, placed at the heart of all the immeasurable *actions of the universe*, manage to conserve the memory of these actions within him, and to transmit this memory faithfully to his descendants, from generation to generation? (Jousse 2000:30).

If the capacity of the computer can be harnessed to address Jousse's question, then we perhaps will be able to access what he termed the microscopic geste, the inner 'Real', the real reality of every human being: their inner 'complexus of geste' (Jousse 2000:24) the bank of vibrations that constitute the self-realisation of memory so intractably and only partially translatable into any form of human expression. Should the computer be able to record in Virtual Reality, the macroscopic and microscopic geste and rhythm of the mnemonic Oral Style, it will provide an invaluable tool for the archiving and analysis of Oral-style traditions and indigenous knowledges of the world. Perhaps even more significantly, it will allow us to explore further the potential capacity and operation of human memory, the psycho-biological source of human intelligence and understanding and that which distinguishes us as human.

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