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Collective Thinking

With the rise of ubiquitous networked communication due to the internet and its enhancement by mobile access anytime, anywhere, our capacities for effective problem-solving both on the practical and the more abstract levels have vastly increased. Two domains where one would expect such increases to be particularly noticeable are democratic politics on the one hand, and scientific and technological creativity on the other. The advancement of e-democracy and m-democracy was amply demonstrated by a number of talks given at the Budapest mobile communications conferences of May 2002, April 2003, and June 2004 – just think of the papers by Dányi[1], Paragas[2], Kim[3], and Lai[4] – and the momentous changes occurring in research and development with the rise of the new communication patterns have been lucidly analyzed by Laki and Palló at the 2002 conference. Recall, also, the scientific feat the world witnessed in 2003: the identification of, and the production of a test for, the SARS virus within a matter of weeks, an achievement unimaginable without ubiquitous networked communication.

It appears that a new kind of collective thinking has emerged, robust and tangible. The gains we are enjoying are obvious; but might we not suffer losses as well? According to an influential line of argument that also surfaced at the 2004 Budapest mobile communications conference, continuous connectedness, and thereby the lack of extended periods of mental solitude, inevitably leads to superficiality in thinking. James Katz alluded to the concern that due to "mobile-communication activities in classrooms" problems may be emerging such as "damage to attention spans" and to "critical-thinking skills", as well as the loss of "ability to concentrate, to plan, and to work with complex ideas"[5]. Raimondo Strassoldo employed less uncertain terms. As he put it: "There is a time for speaking and communicating; but there should also be a time for thinking, for meditation, for contemplation, for concentration, for reflection, for introspection, for internal talk within oneself and, perhaps, with the inhabitants of the self." Strassoldo observes that with the spread of the mobile phone people "only seem to be able to exist as

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[1] Endre Dányi – Miklós Sükösd, "M-Politics in the Making: SMS and E-mail in the 2002 Hungarian Election Campaign", in Kristóf Nyíri (ed.), *Mobile Communication: Essays on Cognition and Community*, Vienna: Passagen Verlag, 2003, pp. 211–232; Endre Dányi, "WLC 2 UROP / Interconnected Public Spheres in the Age of Mobile Communication" in Kristóf Nyíri (ed.), *A Sense of Place: The Global and the Local in Mobile Communication*, Vienna: Passagen Verlag, 2005, pp. 129–137.

[2] Fernando Paragas, "Drama*text*ism: Mobile Telephony and People Power in the Philippines", in Kristóf Nyíri (ed.), *Mobile Democracy: Essays on Society, Self and Politics*, Vienna: Passagen Verlag, 2003, pp. 259–283.

[3] Shin Dong Kim, "The Shaping of New Politics in the Era of Mobile and Cyber Communication: The Internet, Mobile Phone and Political Participation in Korea", in Kristóf Nyíri (ed.), *Mobile Democracy*, pp. 317–325.

[4] On-Kwok Lai, "Mobile Communicating for (E-)Democracy beyond Sovereign Territorial Boundaries: Transnational Advocacies versus E-Government Initiatives in Comparative Perspectives", in Kristóf Nyíri (ed.), *Mobile Democracy*, pp. 327–337; Shizuka Abe – On-Kwok Lai, "Mobile Communicative Actions in (Anti-)Globalization Processes: Social Agencies and the State in an Information Society", in Kristóf Nyíri (ed.), *A Sense of Place*, pp. 93–103.

[5] James E. Katz, "Mobile Phones in Educational Settings", in Kristóf Nyíri (ed.), *A Sense of Place*, p. 316. Here Katz is referring to Marilyn Gilroy's paper "Invasion of the Classroom Cell Phones", *Education Digest*, vol. 69, no. 6 (2004), pp. 56–61.

nodes and terminals of communication networks". As he sees it, the young are ever less capable of becoming "autonomous, self-directed individuals", and he recalls David Riesman "denounc[ing] more than half a century ago the trend toward other-directedness".[6] Strassoldo's reference to Riesman is not entirely apt. The latter did in fact make the connection, in his 1950 book *The Lonely Crowd*, between the printed book and inner-directedness;[7] however, Riesman's notion of other-directedness is thoroughly bound up with the experience of centralized mass media. Networked communication of course provides one with very different experiences. Do we have reason to believe that the network individual's cognitive achievements[8] are in any way inferior to that of the inner-directed one? It was in the wake of Strassoldo's talk[9] that I decided, during the planning stages of the present conference, to dedicate my paper to the topic of collective thinking.[10]

Solitude

Will the incessantly communicating individual, then, produce but superficial thoughts; is solitude a necessary precondition of depth? Note that the term "solitude" has no meaning unless set against the background of a given communicational technology. The solitude of one bewitched by a book is different from the solitude of sulking Achilles and the solitude of the lonely texter. For members of nonliterate cultures solitude is an enforced condition, bound up with exceptional events such as rites of passage, or occurring as a result of unusual, indeed catastrophic, events. Similarly with silence. Referring to a nonliterate Eskimo tribe in the 1950s, psychiatrist J. C. Carothers found it significant that people there "talked a great deal", obeying the "rule of Eskimo life ... that a

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[6] Raimondo Strassoldo, "The Meaning of Localism in a Global World", in Kristóf Nyíri (ed.), *A Sense of Place*, p. 56.

[7] *The Lonely Crowd: A Study of the Changing American Character*, by David Riesman in collaboration with Reuel Denney and Nathan Glazer, New Haven, CT: Yale University Press, see esp. pp. 89–97. A singularly perceptive analysis of this book as seen from the perspective of the orality/literacy contrast is provided by J. C. Carothers in his paper "Culture, Psychiatry, and the Written Word", *Psychiatry: Journal for the Study of Interpersonal Processes* 22 (1959), 307–320.

[8] I have begun using the term "network individual", for designating what I think is a new type of personality, in the early stages of the project COMMUNICATIONS IN THE 21ST CENTURY (cf. http://21st. century.phil-inst.hu/2Summ.htm, see also my preface to the volume Kristóf Nyíri (ed.), *Mobile Democracy*, p. 16).

[9] And as a consequence of the recognition that the phenomenon Strassoldo refers to – the tendency for young people to be in continuous mobile contact – has clearly become a very real one. A dramatic narrative is Lin Prøitz's paper "Intimacy Fiction: Intimate Discourses in Mobile Telephone Communication amongst Norwegian Youth", in Kristóf Nyíri (ed.), *A Sense of Place*, pp. 191–200. My favourite sentence in Prøitz's paper is the one where she says of the teenage couple she deals with: "they send persistent text messages to each other from the very moment they wake up until they go to sleep – interrupted only, so to speak, by the text message break that occurs when they are physically together" (*ibid.*, p. 198).

[10] I became further motivated by an article in the December 13, 2004, issue of *The Christian Science Monitor*, quoting Naomi Baron, Professor of Linguistics at American University, author of *Alphabet to Email: How Written English Evolved and Where It's Heading*, London: Routledge, 2000. "If you talk to students you often find they have trouble being alone", Baron said. "Some argue that cellphones make it possible to have larger social safety net and that contact is good. I argue that part of what makes a human being is the ability to be alone with no one to help [think] through a number of difficult circumstances ... to figure out who [we] are, where [we] want to go, who [we] want to be." I side with those who believe that what constitutes a human being is the ability to communicate with other human beings.

man must not keep any thought to himself – for if he does so he will go mad".[11] Preliterate, Homeric Greek had no words to represent solitary, inner, mental events; thinking was a dialogue, thinking to oneself a dialogue between parts of one's body. There was no vocabulary to express abstract cognitive states or processes.[12] That vocabulary was gradually built up by Western philosophy, beginning with Plato, and reaching a point of culmination and a new beginning with Descartes. Ernest Gellner's book *Language and Solitude*[13] sketches a variety of perspectives from which to understand Cartesian-type loneliness; in the present talk, I will concentrate on one such perspective, namely that of *silent reading*.

Deep Thoughts

The term "superficiality" is merely a metaphor, complementing the already dubious metaphor of "depth", the latter suggested by the metaphor of "immersion" engendered by the experience of silent reading. As demonstrated in the 1920s in the pioneering work of the Hungarian scholar József Balogh, silent reading was almost unknown in ancient Greece and Rome, and all through the Middle Ages;[14] the written text, devoid of intervals and punctuation, had to be read out loud in order to be understood. Under such conditions, written-down thoughts, as contrasted with spoken-out-loud ones, do not exude the suggestion of depth. Neither in Plato's Academy, nor in Aristotle's school would "depth" have been a word of praise. Plato extolled "clearness and perfection and seriousness", "communicated orally for the sake of instruction and graven in the soul, which is the true way of writing"[15] – even if, of course, he himself committed his philosophy to writing, while mimicking, in his dialogues, the style of spoken exchange. As to Aristotle, it is here essential to register the simple truth which centuries of specialist scholarship, for obvious psychological and sociological reasons, have refused to accept, namely that the Corpus Aristotelicum was not the work of a single individual, but of generations of teachers and students of the Peripatetic School. The Corpus is the written documentation of oral discussions stretching over many decades. As Grayeff puts it in his work *Aristotle and His School*: "as regards both their meaning and their structure, [these writings] become intelligible only when it is realized that *they are part of a[n imaginary] dialogue carried on between the lecturer and rival philosophers*".[16] What the Aristotelian school valued was not depth, but articulateness, and dexterity in open argumentation.

The printed page is easily scanned; with the spread of Gutenberg's invention, in the course of two or three centuries, silent reading becomes the rule. Words on the printed page appear clearly and distinctly, creating an illusion of autonomous ideas clear and distinct in the reader/thinker's mind. The prophet of this illusion was Descartes. The sto-

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[11] Carothers, *op. cit.*, p. 314. The reference is actually a quote from Katharine Scherman's *Spring on an Arctic Island*, Boston: Little, Brown & Co., 1956.

[12] For references, see my paper "Thinking with a Word Processor", in R. Casati (ed.), *Philosophy and the Cognitive Sciences*, Vienna: Hölder-Pichler-Tempsky, 1994, pp. 63–74. A digital version of the paper is available at http://www.phil-inst.hu/nyiri/KRB93_TLK.htm.

[13] Ernest Gellner, *Language and Solitude: Wittgenstein, Malinowski and the Habsburg Dilemma*, Cambridge: Cambridge University Press, 1998.

[14] Cf. Josef Balogh, "'Voces Paginarum': Beiträge zur Geschichte des lauten Lesens und Schreibens", *Philologus* 82 (1926), pp. 84–109, 202–40. See also Paul Saenger, "Silent Reading: Its Impact on Late Medieval Script and Society", *Viator* 13 (1982), pp. 367–414.

[15] *Phaedrus* 278a, Jowett transl.

[16] See esp. Felix Grayeff, *Aristotle and His School*, London: Duckworth, 1974

ry of his withdrawal into seclusion during the winter of 1619–1620 is well-known, and the philosophical results of his solitary meditations were of course pathetic. The formula "Cogito, ergo sum" might have convinced some generations of thinkers labouring under unnatural conditions of communication similar to those affecting Descartes; but it would definitely meet with incomprehension on the part of today's texters, becoming unsure of themselves the moment the stream of incoming messages is at a low ebb. Similarly incomprehensible to habitual senders and receivers of e-mails, to regular mobile phone users, or indeed to ardent employers of texting/chatting abbreviations, would be John Locke's thesis that the words of language are actually "marks for the ideas within [one's] own mind"[17] – a thesis directly leading to the position according to which, as Wittgenstein put it, "[t]he individual words of … language … refer to what can only be known to the person speaking", namely to "immediate private" mental contents, with the implication that "another person cannot understand the language".[18] Wittgenstein believed himself to have shown that a private language is impossible; but what he actually did show, I think, is that such a language is impossible *under the conditions of an oral culture*.[19] In the culture of the printed book one can indeed become enmeshed in one's verbal abstractions, ending up with unfathomable ideas: deep thoughts, if you like. By the late 18th century there arose a feeling that depth is ineffable. As the Romantic poet Friedrich Schiller wrote: "*Spricht* die Seele so spricht ach! schon die *Seele* nicht mehr."

Visible Thoughts

Now it is essential to note that while writing in its fully developed form, i.e. the printed text, fosters a seeming clarity, and actual obscurity, of thinking turned inward, from the very beginning it also gives rise to an enhanced coherence of thinking conducted externally, publicly. As the Hungarian historian István Hajnal wrote in the early 1930s, referring to the beginnings of alphabetic literacy in Greece: "Writing vividly accompanies the human being's outer and inner life, objectifying it and thus rendering it capable of being observed. It links together the past and the present in the life of both the individual and the community, it encourages rational thinking, and enables the building of complicated mental edifices."[20] As, not independently of Hajnal's work, Walter J. Ong underlines in his *Orality and Literacy*, writing of course is, in a sense, alienating. However, as he puts it: "Alienation from a natural milieu can be good for us and is in many ways essential for full human life. To live and to understand fully, we need not only proximity but also distance."[21] Seen from the perspective opened up by Hajnal it is not difficult to understand why people often prefer to write SMS messages instead of

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[17] John Locke, *An Essay Concerning Human Understanding*, Book 3, chapter 1, sect. 2.

[18] Ludwig Wittgenstein, *Philosophical Investigations*, Oxford: Basil Blackwell, 1953, Part I, § 243.

[19] See my paper "Writing and the Private Language Argument", in J. C. Nyíri, *Tradition and Individuality: Essays*, Dordrecht: Kluwer, 1992. My point of departure in that paper is Bronislaw Malinowski's essay in the Ogden and Richards volume *The Meaning of Meaning* (1923). Language in a preliterate culture, Malinowski emphasized, is never "a mere mirror of reflected thought"; in writing however "language becomes a condensed piece of reflection", the reader "reasons, reflects, remembers, imagines". Such reflection is, as Malinowski sees the matter, a philosophically dangerous enterprise, leading to a "misuse of words", and thereby to a misleading picture of human communication and cognition.

[20] István Hajnal, "Írásbeliség, intellektuális réteg és európai fejlődés" ["Literacy, Intellectual Stratum, and European Development"], 1933, repr. in Hajnal István, *Technika, művelődés: Tanulmányok* ["Technology, Education: Essays], Budapest: História, 1993, p. 43.

[21] Walter J. Ong, *Orality and Literacy: The Technologizing of the Word*, London: Methuen, 1982, p. 82.

calling; or why, as for instance Abigail Sellen and Richard Harper have discovered,[22] surrounding the computer display with an array of printouts is indispensable if office workers want to understand longer texts and compose decent documents. On a less pedestrian level, Hajnal is a precursor of Merlin Donald's external memory theory, according to which the "three broadly different modes of visual symbolic invention" making up the last evolutionary transition in the development of humankind, namely the "pictorial, ideographic, and phonological", signalled the beginnings of "a new cognitive structure", leading, also, towards forms of "analytic thought", i.e. "formal arguments, systematic taxonomies, induction, deduction".[23] And Donald's external memory theory is then taken over by Andy Clark, a fact perhaps less than sufficiently acknowledged by the latter, in the form of the "extended mind" theory, a theory that plays a major role at the present conference: Andrew Brook, John Preston, and Zsuzsanna Kondor all deal with it.[24]

In the first chapter of McLuhan's *Understanding Media* there is a passage that ends with an intriguing, seldom-quoted sentence. "The content of writing", the passage runs, "is speech, just as the written word is the content of print, and print is the content of the telegraph. If it is asked, 'What is the content of speech?', it is necessary to say, "It is an actual process of thought, which is in itself nonverbal.' "[25] Donald's external memory theory does allow for thought to be nonverbal, in that it underlines the primary role of the pictorial in the sequence of visual symbolic inventions. Thoughts are made visible not just by writing, but also by images. However, as alphabetical literacy became increasingly dominant, with written texts widely copied while the technology of duplicating pictures was severely lagging behind, visible thinking became, for many centuries, merely thinking in words.[26] This situation has changed, at first gradually, with the invention of the printed image and later with the rise of photography, and then dramatically with the emergence of computer graphics. Computer graphics are at their best when turned into animations. Animations, however, cannot be conveyed via hardcopy; you need to watch a screen, and, ultimately, you also need to be online. We are back at the recognition that serious thinking, today, is inevitably thinking in the medium of ubiquitous networked communication.

The Collective Mind

In my paper "Thinking with a Word Processor", given at the 1993 Wittgenstein Symposium in Kirchberg am Wechsel, I concluded by saying: "When we think with a word processor it is a synchronous intellectual exchange with fellow thinkers all over

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[22] Abigail J. Sellen – Richard H. R. Harper, *The Myth of the Paperless Office*, Cambridge, MA: The MIT Press, 2002.

[23] Merlin Donald, *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition*, Cambridge, MA: Harvard University Press, 1991, pp. 278, 284, 273.

[24] Clark's new study, with direct bearing on the issue of mobile phones, the book *Natural-Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*, Oxford: Oxford University Press, 2003, contains two references to Donald – the index lists him as Merlin, D. – neither of which does any justice to the very close parallels between the external memory / extended mind theories.

[25] Marshall McLuhan, *Understanding Media: The Extensions of Man*, New York: McGraw-Hill, 1964, p. 8.

[26] I have dwelled at some length on this theme in my papers "The Picture Theory of Reason", in Berit Brogaard and Barry Smith (eds.), *Rationality and Irrationality*, Wien: öbv-hpt, 2001, pp. 242–266, and "Pictorial Meaning and Mobile Communication", in Kristóf Nyíri (ed)., *Mobile Communication*, pp. 157–184; see also my essay "Images of Home", in Kristóf Nyíri (ed.), *A Sense of Place*, pp. 375–381.

the world we are, ultimately, engaged in. So what are we thinking with when we think with a word processor? The word 'with' here … does in the last analysis point not to instrumental application – but to human companionship."[27] This paper was basically a continuation of what one could call Wittgenstein's theory of the extended mind, put forward, for example, in one of the opening remarks of the *Blue Book*: "We may say that thinking is essentially the activity of operating with signs. This activity is performed by the hand, when we think by writing; by the mouth and the larynx, when we think by speaking… If we talk about the locality where thinking takes place we have a right to say that this locality is the paper on which we write or the mouth which speaks."[28]

Wittgenstein's theory of the extended mind essentially involves the position that the agent of thinking encompasses not just devices external to the individual brain, but also the community of thinkers playing the same language-game. As he puts it in a well-known passage of the *Philosophical Investigations*: "If language is to be a means of communication there must be agreement not only in definitions but also (queer as this may sound) in judgments. This seems to abolish logic, but does not do so. … human beings ... agree in the *language* they use. That is not agreement in opinions but in forms of life."[29] It is interesting to note that Heidegger, along with Wittgenstein the other great twentieth-century philosopher of post-literacy, had quite similar views, even if expressed in a rather different terminology. "We do not merely speak *the* language", he wrote, "we speak *by way of* it. ... We hear language speaking. ... *language* speaks."[30] ("Wir sprechen nicht nur *die* Sprache, wir sprechen *aus* ihr. ... Wir hören das Sprechen der Sprache. ... die *Sprache* spricht.") Both for Wittgenstein and Heidegger, speaking, and thus thinking, is first, foremost, and to the end, a collective achievement. The primary agent of thinking is the community of speakers; the rules of traditional logic are a makeshift substitute in the mind of the solitary thinker for the absent voices of interlocutors. In the age of post-literacy linear logic is, once more, supplanted by the logic of conversation. As McLuhan's theory of the extended mind foresaw: "In the electric age … our central nervous system is technologically extended to involve us in the whole of mankind… the creative process of knowing will be collectively … extended to the whole of human society".[31]

But let me note, in closing, that the working of the collective mind does not always rely on networking. It was a fundamental insight of the economist and philosopher Friedrich August von Hayek that not only is social knowledge, under modern conditions, *fragmented* in the sense that "each member of society can have only a small fraction of the knowledge possessed by all, and ... each is therefore ignorant of most of the facts on which the working of society rests", but also that this knowledge must remain "widely dispersed among individuals", since it is tacit, practical, local, not of the kind that can be transferred, ordered, united. How can we benefit, Hayek asks, from "knowledge ... we do *not* possess"?[32] Hayek's question is echoed by James Surowiecki in his

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[27] J. C. Nyíri, "Thinking with a Word Processor", cf. note 12 above.

[28] Ludwig Wittgenstein, *The Blue and Brown Books*, Oxford: Basil Blackwell, 1958. pp. 6 f.

[29] *Philosophical Investigations*, §§ 241 f.

[30] Martin Heidegger, "The Way to Language" (1959), in Heidegger, *On the Way to Language*, New York: Harper & Row, 1971, p. 124.

[31] *Understanding Media*, pp. 3 f.

[32] F. A. Hayek, *Law, Legislation and Liberty*, vol. 1: *Rules and Order*, London: Routledge and Kegan Paul, 1973, pp. 13–15.

recent *The Wisdom of Crowds*,[33] a stimulating albeit inconclusive book; but then Hayek himself, at the end of the day, was unable to outline a conclusive answer. Hayek emphasized the role the *market* plays in co-ordinating local segments of knowledge; he did not, however, build upon the fact that the marketed goods themselves bring together, embody, and carry such knowledge. Our tools and devices are materialized results and vehicles of, as well as ever new inputs to, collective thinking. And here, finally, the mobile phone re-enters – not as a means of communication, but as the supreme instance of an instrument incorporating the expertise of a vast number of specialists, enabling the individual to enjoy the fruits of that enhanced scientific and technological creativity to which I was referring when I embarked on this talk.

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[33] James Surowiecki, *The Wisdom of Crowds: Why the Many Are Smarter than the Few and How Collective Wisdom Shapes Business, Economies, Societies, and Nations*, New York: Random House, 2004.