The thesis according to which computer networking is an epistemologically significant phenomenon – that, in other words, the technology of communicating on the net has implications not just for the form, but also for the content and indeed for the overall logic of what is being communicated – rests on a set of general philosophical assumptions as regards the relation between thought and its medium. In my paper I wish to show that formulating these assumptions, and elaborating them, has been a characteristic concern of Austro-Hungarian philosophy; that between the philosophers who played a role in the relevant endeavours there obtained significant, sometimes mutual, influences; that Austro-Hungarian realities had a marked effect on their thought; and that their thinking was influenced – albeit in a peculiar way – by an important earlier chapter in the history of Austrian philosophy. (A further possible topic, one however I will not pursue here, is the influence Austro-Hungarian thinking had on the practical development of computer technology. Think of Gödel’s and Wittgenstein’s impact on Turing; or indeed of J. von Neumann.)

An Austrian Background

Let me start with the issue I mentioned last: The influence of earlier Austrian philosophy. The influence I am referring to is that of the German-Bohemian philosopher Bernard Bolzano. His Wissenschaftslehre (1837), a book in the domain of the philosophy of logic and of the sciences, constitutes a system of extreme Platonism. Bolzano’s world is one of objective, abstract meanings; language, for him, is but an expression of thought; and thinking, a representation of timeless entities given independently of the agent who thinks, or the community of which the agent is a member. In Catholic Austria Bolzano – himself an enlightened Catholic priest – was very influential; for some decades his ideas served as the basis, first explicitly and later tacitly, of philosophy textbooks on the gymnasium level. Even at the turn of the century, Austro-Hungarian philosophers could not ignore Bolzano. They accepted him (like Twardowski, Meinong or Husserl did), or they rebelled against him. Those who rebelled, became anti-Platonists, conscious of the role of language and communication in cognitive processes. It is this latter group Palágyi was an important member of.
As to the effect of Austro-Hungarian realities: What I mainly have in mind is the phenomenon of *disturbed communication* within the Habsburg Empire. Recall Freud. And recall the role the problem of language played in multilingual Austrian society and in Austrian politics, so revealingly described by Musil in his *Man Without Qualities*. Think of Fritz Mauthner ("der Deutsche im Innern von Böhmen, umgeben von einer tschechischen Landbevölkerung, spricht keine deutsche Mundart, spricht ein papierenes Deutsch"); think of Ettore Schmitz (assuming the name "Italo Svevo", "der italienische Schwabe"), who created literary works in a language he had difficulties to master; think of Josef Weinheber, complaining about the difficulties of thinking in *two* languages at the same time – the Viennese dialect on the one hand, and literary German on the other.

But recall also the retarded emergence of literacy in rural Eastern Europe – the strong oral residues. Here substantial empirical research still would have to be done. Digging down to the level of pseudo-literacy (more obvious in the north-eastern, eastern, and southern, than in the central and western, parts of East Europe) would involve detailed literary and sociological investigations. One task here would be the working out of some Eastern European and *Russian* parallels and differences.

**Digression on Russia**

An independent middle class did never emerge in Russia; communications between the lower and the upper strata of society were utterly sporadic, and indeed the whole of Russian society was, and to some extent still is, characterized by a peculiar lack of coherent discourse. This phenomenon of broken communications is to some extent illuminated by a reference made by the linguist Roman Jakobson. Jakobson describes it as "one of the most peculiar features of Russian cultural life, which sharply distinguishes it from that of the occidental world", that "for many centuries Russian written literature remained almost entirely subject to the church: with all its wealth and high artistry, the Old Russian literary heritage is almost wholly concerned with the lives of saints and pious men, with devotional legends, prayers, sermons, ecclesiastical discourses, and chronicles in a monastic vein. The Old Russian laity, however, possessed a copious, original, manifold, and highly artistic fiction, but the only medium for its diffusion was oral transmission." If Europe was created by alphabetic literacy emerging from the interplay of ecclesiastical and secular forces, this fundament was missing in Russia. – Russia as a society of discontinuous communications was lucidly analyzed by the nineteenth-century Russian philosopher Chaadaev. "We belong", he writes, "neither to the West nor to the East, and we possess the traditions of neither." Thus Russian thinking is not structured around coherent narratives, has, as Chaadaev puts it, no "vivid recollections", no "charming memories" and "gracious images" to which it can "cling"; it is "without a heritage", "without a link" with preceding generations,
it has "rifts", it is "broken". There is in Russian life, he writes, "no rule for anything at all", no "common bond", Russian society swings "back and forth without convictions and without rules, even in routine matters", lacks those common "elementary ideas" without which "all consistency, all certitude", all "feeling of continuity" must escape one. Chaadaev in fact applies a perspective which was later developed by Emile Durkheim and Ludwig Wittgenstein, viz. that without fixed points in collective thinking the coherence of individual cognition is impossible. Russian thinking lacks such fixed points, since at no point in Russian history could "one single idiom", a deeply interiorized collective narrative, develop.

A list of the investigations that would be necessary here: comparative surveys of the Eastern European region pertaining to (1) cognitive differences deriving from differences of the Cyrillic alphabet on the hand, and the Latin on the other, (2) differences between the elementary school systems, (3) differences in early twentieth-century reading habits, (4) differences in local communication patterns, (5) communicational idiosyncrasies having to do with multi-ethnic populations. – For Hungary, the direct and indirect testimonies of the so-called populist writers of the 1920's and 1930's (Dezső Szabó, János Kodolányi, Zsigmond Móricz, Gyula Illyés, László Németh) are crucial; very significant is the work of the educational theorist Sándor Karácsony, whose descriptions and analyses of the "Hungarian mind" amount to an – unintended – picture of what are actually characteristics of preliterate linguistic and cognitive behaviour.

**Palágyi on Written Language**

Menyhért (Melchior) Palágyi was born and educated in Hungary, but most of his main works he wrote in German, where he for a time lived. His two books published in 1902 – *Kant und Bolzano* (Halle) and *Der Streit der Psychologisten und Formalisten in der modernen Logik* (Leipzig) – were written under the impact of, and constituted a reaction to, Husserl's *Logische Untersuchungen*, vol. I. In 1903 he published *Die Logik auf dem Scheidewege*; and in 1904 *Az ismerettan alapvetése* ("Foundations of Epistemology"), a revised version of the 1903 book. One of the main arguments of the book *Kant und Bolzano* consists in elucidations as to *language as a vehicle of thought*. A characteristic passage: 

"[D]er Sinn eines Satzes [kann] als selbständige, psychische Erscheinung (frei von begleitenden Zeichen, Lautvorstellungen u.s.w.) im menschlichen Bewusstsein nicht bestehen... eine logische Urteilstätigkeit [kann] in unserem Geiste nicht stattfinden ..., ohne dass sich diese Tätigkeit in einem Hervorbringen von sinnlichen Symbolen manifestieren würde..." Or as Palágyi puts it in his other book of 1902: "reflektierendes Denken" remains "in unaufhörlicher Abhängigkeit ... von selbstgeschaffenen Zeichen, namentlich den Zeichen der Sprache". And here the expression "selbstgeschaffene Zeichen", "self-created signs", anticipates a turn in Palágyi which will occur during the next two years, 1903 and 1904: the discovery of *written language* as a language having conceptual implications entirely different from that of spoken, in
the sense of oral-aural, language. One can sense this turn in the book Die Logik auf dem Scheideweg already; it becomes explicit and emphatic in Az ismerettan alapvetése. Taking issue with the well-known passages in Aristotle's De interpretatione concerning the distinction between concepts and judgments, Palágyi here writes: "I can not imagine that a primitive human being, who never learnt to read and write, could in his soul discover two kinds of thoughts, that is concepts and judgments... Indeed, of someone who could write, but had no idea of alphabetic writing, and used only a picture language like e.g. the Egyptians, of this human being one could hardly assume that it was inclined to find ... in its soul concepts on the one hand and judgments on the other..." Palágyi here offers, in sketch, a philosophy of almost the entire history of communication technologies. Just as writing bridges time, so do, as he puts it, telegraph and telephone bridge distance. What he finds decisive, however, is that language is not just a means of communication; it is, in all its forms – as spoken, written, etc. – also a vehicle of thinking; the erroneous impression of a "pure" reason, unpolluted by the use of symbols, can only arise because there is such a phenomenon as silent thinking – a phenomenon very much dependent on that of silent reading. But silent reading, Palágyi points out, of course does presuppose loud reading.

Obviously, Palágyi did have some non-Austrian forerunners – mainly Germans. He mentions Herder and Humboldt; he should have also mentioned Gustav Gerber; and Max Mueller. That the latter had an influence on him, can be definitively shown. And he should have certainly mentioned Nietzsche. Nietzsche had been very much alert to the significance of language as having a formative influence on the way we think; and indeed he was alert, too, to the specific cultural and psychological effects of language written. He himself, characteristically, preferred the old-fashioned way of reading aloud to silent reading. "The German does not read aloud", runs a familiar passage by Nietzsche, "he does not read for the ear, but only with his eyes... In antiquity when a man read – which was seldom enough – he read something to himself, and in a loud voice... In a loud voice: that is to say, with all the swellings, inflections, and variations of key and changes in tempo, in which the ancient public world took delight. The laws of the written style were then the same as those of the spoken style." In his Basel lectures Nietzsche had already developed the untimely notion of a non-literary culture or education. As he said, introducing his course on the "History of Greek Literature" in the winter term of 1874/75: "The word 'literature' is dubious, and contains a bias. Just as it was an age-old mistake of grammar to start from letters and not from spoken sounds, similarly it is the old mistake of literary history to concern itself first with the writings of a people, and not with its spoken linguistic art, that is, to look at the matter against the background assumptions of an age in which the literary work of art is enjoyed by the reader only." How we take in a work of art, Nietzsche insists, is different when reading and when listening. A literature which is exclusively for readers amounts to a kind of degeneration. "Now however", writes Nietzsche, "we live in such an age of degeneration, and thus apply many false stand-
ards and presuppositions to Greek history, from which *alas* only the works for readers have come down to us." Nietzsche, who had very weak eyes, and in the course of time became almost blind, inevitably developed a certain keenness of hearing when it came to the pitfalls of written language. His short-sightedness soon drove him to limit himself to the jotting down of short aphorisms, which he thought up by reciting to himself during long walks and then tried to memorize. He curses this unwanted telegraphic style, and turns against the *objektive Schriftsprache*, "objective written language"; propounding a philosophy which, significantly, detects in grammar and language the source of metaphysics, of that "prejudice of reason" which forces us to assume "unity, identity, permanence, substance"; and he argues against the "old conceptual fiction that posited a 'pure, will-less, painless, timeless knowing subject'". Nietzsche senses that the rise of the telegraph-based daily newspaper is the beginning of the end of the age of the book. This perception is bound up with his recognition that the idea of fixed word meanings, and the Platonist view of concepts and of knowledge proceeding from that idea, emerge as a consequence of the one-sided allure of written language.

**Balogh and Hajnal**

Nietzsche had an essential impact on the classical scholar József Balogh; and influenced the historian István Hajnal. Whether Palágyi had an influence, direct or indirect, on either of them I cannot tell; but at least in Balogh's case I would assume that some kind of such influence did indeed obtain. And Hajnal of course read Balogh. It is clear however that the decisive impact came not from mutual influences – but from the new communications technology itself.


And now some quotes from Hajnal. First, from the fundamental essay "Irásbeliség, intellektuális réteg és európai fejlődés" ["Literacy, intellectual class, and European development"], published in 1933, here in my German translation of the Hungarian original: "Verschmelzung des natürlichen, sprachmässigen Denkens und der Schrift bedeutete die Ausbildung einer neuen, schriftlichen Denktechnik. Das äussere und innere Leben der Menschen werden durch die Schrift auf lebendige Weise begleitet, objektiviert, und damit der Beobachtung zugeführt. Indem sie Vergangenheit und Gegenwart sowohl im Leben des einzel-
nen, als auch im Leben der Gemeinschaft verbindet, spornt sie zum vernünftig- 
kausalen Denken an [okszerő gondolkodásra ösztönöz], ermöglicht sie einen 
kompilzierten Gedankenbau. Sie ist die eigentliche praktische Grundlage der 
Entwicklung des Rationalismus." Second, from another essay published in 
1933 ("Racionális fejlődés és írásbeliség" ["Rational development and liter- 
acy"]). In the age of fully developed literacy, Hajnal here writes, "real intel-
lectuals ... live in direct human relations almost in passing only; they live, 
rather, in a continuous electric contact with cultural sediments. Their fatal 
extremities are criticized with desperate scorn by Nietzsche." Third, from an 
unpublished introduction, written one or two years later, of his book Az újkor 
története ("History of the Modern Age"): "Writing as an instrument of com-
munication has reached the age of saturation: it has by now absorbed in itself 
everything that was previously the property of spoken language. ... With this, it 
begins to terminate its own role: especially when the arts and the moving pic-
ture satisfies with conjuring up perceptible life. In this state of saturation the 
one-sided role of literacy has to come to an end. ... Once more orality is our 
desire, the possible elimination of writing: spontaneity is valued, both in art 
and in life." And fourth, from a paper published in English in 1952 ("Univer-
sities and the Development of Writing in the XIIth-XIIIth Centuries", Scripto-
rium. International Review of Manuscript Studies, VI/2). Hajnal here stresses 
the oral nature of studies well up to (and even after) the 13th century: "Gener-
ally speaking, for quite a long time the learning of writing seems to be rather a 
sort of gradual drilling along with the progress in the studies. While correct 
Latin pronunciation is intensively learned, parallel with such oral sensitization 
there goes the visual writing, too. Orthography, as it is discussed in grammars, 
is the science of faultlessly pronounced latin text, touching on the rules of 
orthography proper just casually. ... Though waxed tablets might have been 
widely employed in the course of quick composition and recording, the fact 
remains that the time honoured methods of the education of the clerici centered 
around severe drilling in words of mouth and forms [sic]; the text to be written 
must have taken definite and exact shape in the mind prior to its being 'copied' 
on parchment as a so to speak 'prefab.' and recited text. Even text-books on 
grammar were concerned a great deal more with oral expression than with 
scriptural. .... the students themselves at their hospitia are preparing in advance 
for the text of the daily lecture, their masters and seniors reciting it loudly into 
their ears, and as soon as lecture is over, they repeat the text again and again. 
Public lectures, in any case, serve only to [sic] sort of authentication of the 
subject. ... The quarters of students should not be regarded as mere necessities 
of a common subsistence but, in the first place, as forms of educational meth-
ods evolved by feudal society. ... It is simply indispensable for a student to 
have groups of mates, and elders around himself; they are his living educa-
tional tools, carriers of scientific material available for exercises."
Hajnal's researches on the role of writing and literacy in medieval Europe began in the 1910s, and were to a great part conducted in Vienna (cf. Hajnal István, *Irástörténet az írásbeliség felújulása korából*, Budapest: Budavári Tudományos Társaság, 1921). Another Hungarian working in Vienna at the time was the poet, playwright and film critic Béla Balázs, whose book *Der sichtbare Mensch* ("The visible man"), a book dealing with the aesthetics of the film, was published in 1924. In this book, which soon became very influential, speaking of the silent film Balázs makes the following observation: "In film ... speaking is a play of facial gestures and immediately visual facial expression. They who see speaking, will learn things very different from they who hear the words." Balázs has put forward a number of very interesting psychological and philosophical reflections. Thus after noting that it is actually "the language of gestures" that is the "mother tongue of mankind", Balázs remarks: "It is not the same spirit that is expressed now in words, now in gestures. ... For the possibility of expressing ourselves conditions in advance our thoughts and feelings. ... Psychological and logical analyses have proven that our words are not subsequent representations of our thoughts, but forms which will from the beginning determine the latter." The view that words are mere carriers of thoughts from person to person Balázs associates with the emergence of *printing*; and he observes that as a consequence of printing all forms of communication other than reading and writing have receded into the background. However, the new medium, the film, Balázs believes, will bring back "the happy times" when, in contrast to the times "since the spread of the printing press ... the word came to be the main bridge between human beings"; the times "when it was still allowed for pictures to have a 'theme', an 'idea', because ideas did not always first appear in concepts and words, so that painters would only subsequently provide illustrations for them with their pictures."

Balázs's book was reviewed in 1925 by Robert Musil. Musil had contemplated a career as a philosopher – he earned a doctorate in philosophy with a dissertation on Mach – but he was originally trained as an engineer, and had a particularly keen sense of the relevance of the facts of communications technologies for a philosophical interpretation of history. This is certainly shown by his review of Balázs; but also by the lines from his famous critique of Spengler's *The Decline of the West*: "The negative sides of civilization in the main hang together with the fact that the volume of the social body has become too immense; thus its susceptibility to influences no longer survives. No initiative is able to penetrate the body of society across broad fronts, and to receive feedback from its totality. ... The social organization does not keep pace with the increase in numbers." Musil eventually found that he could not formulate his philosophy in the framework of a treatise; that he had to employ the indirect means of narration and dialogue, exploiting all the potentials of relativization and retraction. He died without having finished his grand novel *The Man Without Qualities*. The immense number of draft chapters he left behind are fraught
with cross-references, forming a complicated network. The Musil papers have recently been published – on CD-ROM, accompanied by software that allows the user to do justice to the complexities of a text for which the medium of print was, obviously, no longer adequate.

Musil seems to have been personally acquainted with Neurath in the early 1920s. It was at this time he contemplated the role of a logician for Achilles, one of the forerunners of Ulrich in the earliest sketches for *Mann ohne Eigenschaften*.

Neurath today is mainly known for his prominent role in the Vienna Circle; but a major part of his activities had to do with transcending the limits of written language. His program was that a better integration of text and images. "Frequently it is very hard", he wrote, "to say in words what is clear straight away to the eye. It is unnecessary to say in words what we are able to make clear by pictures". Neurath was working towards an 'International System Of Typographic Picture Education', abbreviated as *isotype*, an interdependent and interconnected system of images, to be used together with *word languages*, yet having a visual logic of its own. Isotype would be two-dimensional ¹, using distinctive conventions, shapes, colours, and so on. Neurath particularly stressed that the elaboration of this picture language was meant to serve a broader aim, that of establishing an international encyclopaedia of common, united knowledge – the 'work of our time', he said – and in this connection he specifically referred to the French Encyclopaedia which 'gave a great amount of material and a great number of pictures, but there was only a loose connection between them'¹.

The "Explorations" Circle

Hajnal was read in the late 1930s or early 1940s by the Canadian economic historian Harald Innis, author of *The Bias of Communication*; somewhat later, by Innis' younger colleague in Toronto, Marshall McLuhan; and also by other members of the McLuhan circle "Explorations". (A member of this circle was David Riesman, whose *The Oral Tradition, the Written Word and the Screen Image* appeared in 1956 [Yellow Springs, Ohio: Antioch Press]. In a loose way Eric Havelock, too, was associated with the circle.) Béla Balázs, too, was read, and referred to, in this group. Indeed in the Toronto circle Hungarian and Austrian ideas merged. McLuhan was certainly the first to discover the connections between Wittgenstein and the passing away of linear literacy. In the journal *Explorations*, no. 8 (1958) McLuhan, in an article under the title "Eminent Extrapolations", speaks of the "strongly oral character" of the work of the later Wittgenstein. He quotes the famous lines from the preface of the *Philosophical Investigations* ("the very nature of the investigation ... compels us to travel over

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¹ "The writing or talking language is only of 'one expansion' – the sounds come one after the other in time, the word-signs come one after the other on paper, as for example the telegram signs on a long, narrow band of paper. The same is true in books – one word over another in the line under it has no effect on the sense. But there are languages of 'two expansions'" (Neurath, *International Picture Language* [1936], Department of Typography & Graphic Communication, University of Reading, 1980, p. 60).
a wide field of thought criss-cross in every direction"), and goes on to write: "All that need be said is that Wittgenstein is here trying to explain the character of oral as opposed to written philosophy." McLuhan does not actually spell out the connections between the emergence of secondary orality on the one hand, and Wittgenstein's use theory of meaning on the other; however, another member of the circle, the Hungarian Károly (Karl) Polányi, contributed an article, "The Semantics of Money-Uses", in which he utilizes what are actually Wittgensteinian insights. As Polányi puts it: "Symbols do not merely 'represent' something. They are material, oral, visual, or purely imaginary signs that form part of the definite situation in which they participate; thus they acquire meaning."

**Wittgenstein**

Although he was an obsessive writer, Wittgenstein had a problematic relation to written language, especially to written language in its fully developed form: the printed book. Already in the preface to his *Wörterbuch fuer Volksschulen* Wittgenstein had complained about the distorting effects of typography; and his reluctance to publish his writings is of course notorious. Here also come to mind his poor orthography; his anachronistic predilection for having people read texts out loud to him; the common observation that his favourite readings he really knew by heart; the aphorism and the dialogue as conspicuous stylistic features of his writing; and his inability or unwillingness to put together what one would call a treatise in the modern sense.

Now a post-literal phenomenon clearly having specific impact on Wittgenstein was film, both in its silent and in its "talkie" versions – to apply here the terminology of late twenties. Going to the movies was almost an addiction with Wittgenstein; and it is striking that he regularly used the film metaphor to illustrate philosophical points, in particular points where the relation of the signified to signs belonging to more than one media was at issue. Thus in the *Philosophical Remarks*, in a telling passage originally from a notebook of 1931/1932: "das gesprochene Wort, was mit den Vorgängen auf der Leinwand geht, ist ebenso fliehend wie diese Vorgänge und nicht das gleiche wie der Tonstreifen. Der Tonstreifen begleitet nicht das Spiel auf der Leinwand." *(Philosophical Remarks*, Chicago: University of Chicago Press, 1975, p. 104: "the spoken word that goes with the events on the screen is just as fleeting as those events and not the same as the sound track. The sound track doesn't accompany the scenes on the screen." Originally from: MS 113:519.) Or in another passage in the *Philosophical Remarks*: "what I call a sign must be what is called a sign in grammar; something on the film, not on the screen" ("Was ich Zeichen nenne, muss das sein, was man in der Grammatik Zeichen nennt; etwas auf dem Film, nicht auf der Leinwand", *Philosophical Remarks*, p. 98.). In England the first "talkie" films were shown in 1928, in Vienna towards the end of 1929. Wittgenstein must have been exposed to new experiences of language through watching them, as also, earlier, through watching silent films. When one recalls
the observations by Béla Balázs, one is certainly not left without possible conjectures as to the nature of those new experiences.

Wittgenstein's use theory of meaning stands under the impact of spoken, as opposed to written, language. In the light of this theory language appears as an activity, as something living. Wittgenstein's question: "Every sign by itself seems dead. What gives it life?" – does not arise in relation to spoken, but only in relation to written language. As he puts it in his so-called Zettel (par. 135): "Conversation flows on, the application and interpretation of words, and only in its course do words have their meaning." Now it is precisely the differences in application that are veiled by writing. Wittgenstein speaks of "the power language has to make everything look the same, which is most glaringly evident in the dictionary..."; that is, of the power of written language. "Led astray by the substantive", he says, "we assume a substance. Indeed, if we leave the rein to language & not to life, then there arise the philosophical problems. 'What is time?' – in the question already there lies the error" (MS 113, p.554). To language, not to life. This can only mean: to language dead, i.e. to language committed to writing.

**Conclusion**

Some two decades ago I have put forward the suggestion that the later Wittgenstein was a conservative, in the sense of a traditionalist, philosopher; and for some years now I have maintained that at the root of his traditionalism there lay an oral bias – a discovery of secondary orality, if you like, disguised as a yearning for bygone days of primary orality. In Balogh, too, there are some obviously romantic, traditionalist nostalgias. (Hajnal is a more ambiguous case.) Balázs and Musil, by contrast, saw the coming of the new communications technologies as a liberation from under the yoke of the printed letter. So why don't I end this draft with the programmatic statement: Hopefully this present Austro-Hungarian joint research project will continue; and hopefully it will further articulate the democratic and avant-garde, as contrasted to the conservative, potentials of Austro-Hungarian philosophy.