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Language, Translation, and the Telematic City

The city is a discourse and this discourse is truly a language: the city speaks to its inhabitants, we speak our city, the city where we are, simply by living in it, by wandering through it, by looking at it. Still the problem is to bring an expression like "the language of the city" out of the purely metaphorical stage. It is very easy metaphorically to speak of the language of the city as we speak of the language of the cinema or the language of flowers. The real scientific leap will be realized when we speak of a language of the city without metaphor.

Roland Barthes

My inspiration for this paper derives from two themes that interlace the philosophical writings of Vilém Flusser: first, his commitment to thinking about and between languages and, second, his conceptualisation of the city as a network, an intersubjective field of relations. If Flusser hardly brought these two areas of his philosophical reflection into direct dialogue, his preoccupation with each invites us to consider their relationship.

Flusser's engagement with multilingualism and translation stem from his own experiences, first growing up as part of the German-Jewish community within Prague's complex cultural and linguistic arrangements between the two World Wars, and subsequently the many years he spent in the remarkably diverse atmosphere of São Paulo. As Rainer Guldin (2005) has meticulously demonstrated, these experiences of "living in translation" not only nourished Flusser's early passion for developing a theory of translation, but also work in conjunction with the notions of *wandering* ("nomadic thinking"), *leaps* and *bridges* which he continually brings into play. His concept of translation ultimately extends beyond linguistic parameters to encompass the broader implications of communication, information and technology. In his writings on cities, as with much of Flusser's later work, emerging media technologies play a central role. In this analysis, new technologies constantly exert pressure on the coherency of the city, on the dynamics of public and private spaces. As such, I view Flusser's reflections on the city as indicative of his metaphorical extension of translation from language and linguistic relations to the mediated, dialogic experiences that continually "in-form" and re-form urban life.

I wish to build upon these connections inherent in Flusser's work. I begin by reflecting upon the materiality of language in cities. I outline ways in which languages exert a material presence on the form and operations of cities. I then extend this discussion to the metaphorics of translation that Marshall McLuhan employs in building his theory of media and the global village, and Jacques Derrida's approach to translation and linguistic variability. These standpoints allow us to consider the implications of computer technology for universal language and machine translation, each of which have been wrapped up in discourses about the city. I finally connect this discussion

to Flusser's writings on the city and his concept of the telematic society, which will have profound implications for the future of the city.

Cities are clearly dialogic spaces. The fluid and layered linguistic spheres of urban life have long been associated with urban form, with the built environment itself. The obvious example, in the Judeo-Christian tradition, is the story of the Tower of Babel, the origins of linguistic variability. In Genesis 11, the great city engineering project is aborted due to the scattering of human idioms. Babel represents an ancient city type that anticipated the contemporary, linguistically diverse metropolis, based on the premise that there once existed a unified *pure language*, drowned out in the cacophony and disharmony of city streets. In *The Task of the Translator* (composed in 1923), Walter Benjamin (1968) relates the act of translating to the pre-existence of such a pure language in an allusion to his future *Arcades Project*. Translating, for Benjamin, occupies an interlingual space, the intersection of languages, akin to the anonymous and transparent space of arcade architecture in the city: "A real translation is transparent; it does not cover the original, does not block its light, but allows the pure language, as though reinforced by its own medium, to shine upon the original all the more fully. This may be achieved, above all, by a literal rendering of the syntax which proves words rather than sentences to be the primary element of the translator. For if the sentence is the wall before the language of the original, *literalness is the arcade*." (Benjamin 1968: 79; my emphasis)

The arcade is a medium of intersecting paths, acts, objects and meanings, a city space neither interior nor exterior. Thus, a reader who is positioned between a translation and its original is comparable to the *flâneur* in the arcade: each collects and distributes meanings while passing through ambiguous, intermediary fields. Translations are remediators, the "afterlives" of works of art (Benjamin 1968: 71). The *Passagenarbeit* embodied this belief as a collection of multilingual citations that gradually outline the history and nature of city arcades. Benjamin's comparison of translation to arcaded structures instantiates the relationship of speaking and moving about the city: meandering through linguistic forms is comparable to strolling about city structures.

Ludwig Wittgenstein (1953) proposed the metaphor that new ways of speaking are "suburbs" of language. Whereas Benjamin discovers the shifting nature of meanings in the material traces of languages and translations, Wittgenstein's philosophy is built upon the diversity and ordinariness of everyday languages. In his *Philosophical Investigations*, he relates the form of "incomplete languages" to the form of an ancient city: "Do not be troubled by the fact that [some] languages […] consist only of orders. If you want to say that this shows them to be incomplete, ask yourself whether our language is complete; - whether it was so before the symbolism of chemistry and the notation of the infinitesimal calculus were incorporated in it; for these are, so to

speak, *suburbs of our language*. (And how many houses or streets does it take before a town begins to be a town?) Our language can be seen as an ancient city: a maze of little streets and squares, of old and new houses, and of houses with additions from various periods; and this surrounded by a multitude of new boroughs with straight regular streets and uniform houses." (Wittgenstein 1953: 8, §18; my emphasis)

Knowledge extends itself through language like new structures in the built urban environment. Emerging descriptions of new forms of knowledge are like suburbs to a city. In another aphorism, Wittgenstein further suggests that navigating a language is similar to learning one's way about the city, to orienting oneself from diverse perspectives in city streets: "Language is a labyrinth of paths. You approach from *one* side and know your way about; you approach the same place from another side and no longer know your way about" (Wittgenstein 1953: 82ᵉ, §203).[1]

For both Benjamin and Wittgenstein, language is not only a mediating element of urban life, but is also part of the formation – in Flusser's terms, the *in-formation* – of the city ever in flux. Linguists and semioticians have followed similar lines of enquiry. Urban sociolinguistics situates the city as a site of unification or conflict, the locus of linguistic coexistence and *métissage*, integrating or excluding new citizens through means of speech. Semiotic theory has sought to see the city as readable through its signifying forms: the grammar of space versus the actualising expression of place, city dwellers compelled to 'read' the city through their movements and to 'speak' the city through their actions. The perception that the city itself is discourse – written, translated, and deciphered by its inhabitants – is put forward by Barthes (1986) in his early outline of a 'semiology of the urban', cited at the outset. In each of these perspectives, language is viewed as more than a constituent element of the city: the city itself is a language spoken by its users in everyday practices.

Marshall McLuhan (1964) was among the first to extend the metaphor of translation to media and technologies within a conception of the city. Like Flusser, McLuhan understood that new media would alter the ratios and arrangements of city life, as encapsulated in his notion of the global village and his emphasis on using city spaces as learning environments. In a well-known letter to town planner Jaqueline Tyrwhitt (23 December 1960), prior to the publication of *The Gutenberg Galaxy* and *Understanding Media*, McLuhan expounded on his understanding of the city as *sensus communis*, a cultural space that fosters the constant and simultaneous translation, or interplay, of our senses: "Now that by electricity we have externalized *all* of our senses, we are in the desperate position of not having any *sensus communis*. Prior to electricity, the city was the sensus communis for such specialized and externalized senses as technology had developed. From Aristotle onward, the traditional function of the sensus communis is to translate each sense into the

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[1] See also comments in Paetzold (1997).

other senses, so that a unified, integral image is offered at all times to the mind. The city performs that function for the scattered and distracted senses, and spaces and times, of agrarian cultures. Today with electronics we have discovered that we live in a global village, and the job is to create a global *city*, as center for the village margins. The parameters of this task are by no means positional. With electronics any marginal area can become center, and marginal experiences can be had at any center. Perhaps the city needed to coordinate and concert the distracted sense programs of our global village will have to be built by computers in the way in which a big airport has to coordinate multiple flights" (McLuhan 1987: 277-278).

From his first reflections on media as art forms in the 1950s, McLuhan viewed the city historically as a translation from one media culture to another, from orality to literacy, a translation of sound into particular spatial terms. This translation, he suggested, made possible the initial organisation of town spaces (Letter to Jaqueline Tyrwhitt, 8 December 1953; RIBA: TYJ/18/2). By the mid-1960s, McLuhan believed the digital computer held the promise of resolving the discrete differences between media. "With the new media," he wrote in *Understanding Media*, "it is also possible to store and to translate everything" (McLuhan 1964: 65): "Language as the technology of human extension, whose powers of separation we know so well, may have been the "Tower of Babel" by which men sought to scale the highest heavens. Today computers hold out the promise of a means of instant translation of any code or language into any other code or language. The computer promises by technology a Pentecostal condition of universal understanding and unity." (McLuhan 1964: 83-84)

For McLuhan, the possibility of universal understanding via technology could be seen as an extension of consciousness, since "'the common sense' was for many centuries held to be the peculiar human power of translating one kind of experience of one sense into all the senses, and presenting the result continuously as a unified image to the mind. In fact, this image of a unified ratio among the senses was long held to be the mark of our *ratio*nality, and may in the computer age easily become so again. […] Having extended or translated our central nervous system into the electromagnetic technology, it is but a further stage to transfer our consciousness to the computer world as well." (McLuhan 1964: 67; original emphasis)

In opposition to Flusser's *nomadic thinking*, technology (in McLuhan's Catholicism) holds a Pentecostal promise: that moment when the segregation of languages is overcome. For McLuhan, as David J. Gunkel has written, the digital computer promised "to become the technological equivalent of this miracle" by overcoming the "Babelian confusion through real-time, interlingual translations" and by re-establishing "universal understanding between human agents despite differences in their means of communication" (Gunkel 1999: 66-67).

However, McLuhan also contends that "all media are active metaphors in their power to translate experience into *new forms*" (McLuhan 1964: 64; my emphasis). McLuhan's thought vacillates between two understandings of translation: 1) as a levelling process (one of convergence leading to universality and unity) and 2) as a process of *transformation* (one of conversion through various medial conditions). In the latter regard, translation is not viewed as an inherent process of convergence or synthesis, but, rather, as a process of transformation and even renewal. For McLuhan, interaction among medial forms can lead to transformation as hybridisation: "What I am saying is that media as extensions of our senses institute new ratios, not only among our private senses, but among themselves, when they interact among themselves. Radio changed the form of the news story as much as it altered the film image in the talkies. TV caused drastic changes in radio programming, and in the form of the *thing* or documentary novel." (McLuhan 1964: 61)

Here, the concepts of transposition and hybridity point to translation as the process by which meanings (information) are propelled into circulation, skirting across older or emergent medial forms as their material carriers. Media are not abstract carriers of information. Knowledge is not independent of the media that transfer it, and during transference information can be altered, transformed, distorted. Translation, in this case, is seen not as a synthesising, unifying force, gesturing to the possibility of an ultimate convergence of all communication, but as a continual process of transposition that leads to new, hybrid, medial forms. All information is subjected to this transposition as it passes from one state to another.

McLuhan's thoughts on translation in his chapters "Media as Translators" and "Hybrid Energy" disclose a longstanding debate underscoring, on the one hand, the utopia that media forms will (re)converge into a universal form and, on the other hand, the brute fact that transfer always involves alteration. In today's media environment, this debate is linked to computer technologies and digitisation, hypermedia and interactivity in a variety of forms, and to a series of contingent discourses. Here, we are still faced with an ancient model of linguistic universals, the search for unity or perfect language (today, via computer technology). Conversely, we are aware of the recurrent failure of this search and the persistence of dialogism, an acceptance of the economy of shifting meanings, recognisable foremost in the circulation of linguistic exchanges – ultimately, the impossibility of total translation in both local and global contexts. Thus, if media streams are folded into one another in the increasing convergence of the digital age, a distinction is still being redrawn between the metaphors of translation as embodying the possibility of *universality* and as representing perpetual *transposition* and *circulation*.

The question of translation as a transfiguring medial process, and its broader implications for understanding city life, invites us to consider the theoretical writings of Jacques Derrida. For Der-

rida, translation is the ultimate metaphor for the constant play and deferral of signifiers and the impossibility of stable meanings. Any attempt to translate always opens up the continuum of this play, as translation always highlights the impossibility of equivalency and always points to the instability of a given formulation in language. Derrida's take on the story of the "Tower of Babel" most emphatically draws out his critique of logocentrism, calling into question the possibility of an original text or a common origin to all languages. In this sense, his reading of the Babel narrative stands diametrically opposed to McLuhan's suggestion that linguistic variability can be resolved in a "Pentecostal condition of universal understanding or unity" made possible by computing technologies, and opposed, too, for example, to Friedrich Kittler's similar claim that through digital code "any medium can be translated into any other" (Kittler 1999: 2). The incompletion of the Tower of Babel, for Derrida, does not relate the fragmentation of an original, essential totality, but is in and of itself the irreducible condition of a multiplicity of idioms, a fundamental condition of communication that resists any attempt at totality: "The 'tower of Babel' does not merely figure the irreducible multiplicity of tongues; it exhibits an incompletion, the impossibility of finishing, of totalizing, of saturating, of completing something on the order of edification, architectural construction, system and architectonics." (Derrida 1985: 165)

In this perspective, "linguistic variation is not a mere empirical problem to be overcome by some perfect translation or by returning to a universal idiom, but a fundamental heterological variation within languages that renders translation an interminable task that is both necessary and impossible" (Gunkel 1999: 74). Consequently, for Derrida, the impossibility of the search for universal truth in transcendental philosophy is most clearly discernible in the impossible attempt to translate, with fidelity, those very philosophical pursuits into other languages. As Gunkel notes, Derrida's essay *Les Tours de Babel* (1985) is "an essay about translation that was written for translation, but that nevertheless resists translation" (Gunkel 1999: 73). Translation celebrates *différance* in the very dichotomy between its impossibility and its necessity.

In his article on machine translation, Gunkel shows how computer technology has not only been viewed as a means of achieving a universal language, but has largely been predicated on the very notion that a universal language was achievable. "Universal language […] is not a project to which the computer has been applied; rather, it constitutes the very genetic structure and fundamental program of the technology itself" (Gunkel 1999: 64). The concept of a 'universal machine', reaching back to the 17th-century philosophy of Gottfried Wilhelm von Leibniz, was accompanied from day one with the hope of providing the means to universal communication because, as Gunkel notes, "not only does its fundamental power reside in its ability to manipulate linguistic tokens, but its very substance has been in-formed by the Babelian dream of linguistic universality" (64-65). In fact, the concept of developing a universal or general translation system

precedes the advent of computer technology by some three hundred years. In 1679, Leibniz summarised the relationship of a "universal symbolism" to a "calculus of reasoning." This letter outlined Leibniz's invention of an artificial language based on philosophical reasoning: "For my invention uses reason in its entirety and is, in addition, a judge of controversies, an interpreter of notions, a balance of probabilities, a compass which will guide us over the ocean of experiences, an inventory of all things, a table of thoughts, a microscope for scrutinizing present things, a telescope for predicting distant things, a general calculus, an innocent magic, a non-chimerical Kabal, a script which all will read in their own language; and even a language which one will be able to learn in a few weeks, and which will soon be accepted amidst the world." (Cited in Eco 1995: xii)

The *characteristica universalis* that Leibniz details would overcome the arbitrariness of natural languages precisely because it was based on rational calculus; it would establish a mode of universal writing which could surmount the Babelian *confusio linguarum* (Gunkel 1999: 64). However, other 17th-century undertakings also recognised that some intervening factor would always be required to carry out the promise of universality. In 1663, Athanasius Kircher wrote his *Polygraphia nova et universalis ex combinatorial arte detecta*. In this polygraphy (a universally accessible code into which and from which any natural language could be translated), Kircher maintained that "anyone, even someone who knows nothing other than his own vernacular, will be able to correspond and exchange letters with anybody else, of whatever their nationality" (Eco 1995: 197). This translation protocol was not a universal language as such, but a procedure for universal communication, a medium of overcoming the gap between languages (Gunkel 1999: 68-69).

The contemporary field of *computer-operated* or *machine translation* (MT) protocols largely functions on the same principle of linguistic universals. In 1949, the same year of his publication of *The Mathematical Theory of Communication* with Claude Shannon, Warren Weaver outlined a utopia of linguistic universality in a memorandum that would become the "stimulus for MT research in the United States" (Hutchins 2001: 2). He did not expect to retrieve a mystical origin of languages per se, but rather to resolve their unending diversity by locating the substructure on which the multiplicity of human idioms is built. In Weaver's hands, comparing translation to the built urban environment is the appropriate metaphor to describe translation as the link between language and informatics: "Think, by analogy, of individuals living in a series of tall closed towers, all erected over a common foundation. When they try to communicate with one another, they shout back and forth, each from his own closed tower. It is difficult to make the sound penetrate even the nearest towers, and communication proceeds very poorly indeed. But, when an individual goes down his tower, he finds himself in a great open basement, common to all the towers. Here he establishes easy and useful communication with the persons who have also descended from their towers. Thus may it be true that the way to translate […] is not to attempt the direct route, shout-

ing from tower to tower. Perhaps the way is to descend, from each language, down to the common base of human communication – the real but as yet undiscovered universal language." (Weaver 1955: 23)

Weaver's 'common base of human communication' describes a universal grammar that would become, with Noam Chomsky, the leading paradigm for analytical and computational linguistics. Weaver's urban metaphor does not picture one Tower of Babel, an original or protolanguage that was disrupted and splintered, but a plethora of towers built upon an 'as yet undiscovered' set of common linguistic rules.

In reference to the future of computer technologies and machine translation, Gunkel draws out two essential complications. First, following a broadly Derridean perspective, the traditional view of the Babel narrative espoused by Western metaphysics – that linguistic diversity is derived from an original unity and is thus necessarily directed towards a final reintegration – is flawed from the outset. Confirmation for this flaw is provided by the endless attempts at machine translation that have constantly stumbled on a seemingly insurmountable degree of ambiguity between natural languages. Second, even if the model of a universal substrate to all languages is accepted, a fundamental paradox is revealed. On the one hand, general machine translation is achievable only if some kind of universal characteristic transcending all linguistic variation does exist. If this universal character were discovered, then translation would become a superfluous activity, as it would be far more efficient to use such a universal character directly. On the other hand, if general machine translation is impossible precisely because there is no universal characteristic, then translation is ultimately necessary as the only means to negotiate linguistic diversity. "Ironically, universal MT is possible only if it is ultimately superfluous, and necessary only if it is fundamentally impossible" (Gunkel 1999: 75). Once again, we are faced with Derrida's "necessary and impossible task of translation, its necessity *as* impossibility" (Derrida 1985: 171).

The paradox of machine translation – its drive to recreate linguistic universality, and the ultimate impossibility of this achievement – offers a point of connection to Vilém Flusser's writings on translation and on the implications of new technologies for the city. In Flusser's descriptions both of his native Prague and his adopted São Paulo, the city is a sphere rife with linguistic layerings, crossing both public and private life. The particular cultural and linguistic constellations of Prague that produced the Jewish intellectual class into which Flusser was born also afforded him keen insight into the influence of language on the intellectual sphere of São Paulo. These insights are embedded within his philosophy of visual, alphabetic and numerical codes in both occidental and non-occidental societies. Flusser's philosophy of media history, or rather posthistory, and its implications for the future of the city, bridges the shift from alphanumeric codification to the telematic society.

Like McLuhan and Derrida, Flusser's work consistently draws upon metaphors of translation. These clearly stem from his many experiences in multilingual spheres and his early attempts to develop a theory of translation (see Guldin 2004, 2005). In his writings on photography, film, and computer technologies, Flusser gradually expands the concept of translation to embrace notions of transference, dissemination, and mediation. As Guldin has noted, two of the most common metaphors Flusser uses for translation are those of 'bridges' and 'leaps' (*Brücken und Sprünge*) (Guldin 2005: 205). Bridges represent the possibility of connection between languages, phenomena, or medial states, yet bridges are constantly threatened by collapse. While bridges hold a promise of harmonisation, or even synthesis, ultimately only 'leaps' from one situation or condition to another can guarantee that some form of transference is achieved. These metaphors tie into Flusser's references to 'entropy' in his media philosophy. The production of information is connected to humankind's capacity to counter entropy, not only by constantly producing new information but also by storing it in memories and databanks. Where entropy is the predictable or 'probable' process towards disorder in a system, the production and build-up of information are its unpredictable or 'improbable' counterpart. But information is not produced randomly; it is produced through dialogic processes, which Flusser juxtaposes to discursive processes. Every social structure, including the city, can be seen as interplay between dialogic and discursive processes: dialogic processes produce information, while discursive processes serve to disseminate it. Thus 'improbable' or 'negative-entropic' dialogue is made increasingly 'probable' through its dissemination. Translation is inherently dialogic: it does not merely transfer information, but is rather productive of information through transference. Translations always strive to be 'loyal' – to create bridges – but ultimately must take a 'leap' of faith into a new language. In this sense, and in accordance with Shannon-Weaver's information theory, translation, as mediation, always creates some 'noise' which accumulates as new information. Translations and especially re-translations, we might say, are feedback loops that operate cybernetically.

Flusser's understanding of new media technologies builds upon these many themes. My interest here is not to elaborate further upon the ways in which Flusser's translation theory is also a media theory,[2] but to consider how his few writings on media and the city also reflect this theory of translation. In a text composed in French for a round table that took place in 1985, Flusser describes the implications of new technologies for city space and our notions of public and private. In previous ages, he suggests, information is exposed – made public or 'published' – in the space of the city, but is saved or stored in the private spaces of one's home. Flusser uses the term 'city space' liberally to refer to any public sphere (polis or republic). The dialectical movement

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[2] In this regard, see especially Rainer Guldin (2005): "Standpunkte: Übersetzung und Medienphilosophie" in *Philosophieren zwischen den Sprachen*, 223-246.

between private and public, between me and the world, will be toppled by the new telematic society: new technologies will close off the open space of the city, bringing about a shift in consciousness. Technologies, he claims, are always characterised by two opposing tendencies: greater dissemination (broadcasting) and more complex forms of exchange (network). The tendency towards broadcasting is one-directional, a sender-receiver model that ultimately may lead to fascism, a synchronised society characterised by centralised information. The tendency towards networking, on the other hand, is multi-directional, a model of "reversible channels" in a dialogic society that will produce a new consciousness and new forms of intersubjectivity. For Flusser, there is no return to a mythic universal language promised by a Tower of Babel, there is only the Babelian dissemination, the dialogue of increasing information exchange. "If we wish to preserve (and augment) consciousness, freedom, we must commit ourselves not to saving the city, the republic, but to establishing reversible channels in a dialogue that is universal and open" (Flusser 1985: 2; my translation).

Flusser describes São Paulo as one such city sandwiched between old and new codes (Flusser 1992a). In São Paulo, the language that intellectuals (writers) 'process' is Portuguese, but the information that nourishes their writerly production largely stems from English and French sources, sometimes also from Italian and German. According to Flusser, translation is an essential tradition in the intellectual life of São Paulo: translations must take place if these sources are to penetrate the city's intellectual discourse. This necessary translation is augmented through the numerous writers who possess different linguistic backgrounds, giving São Paulan Portuguese a peculiar plasticity and making the city a centre of poetic innovation. As an extension of Portuguese colonial history, however, São Paulo remains largely trapped in this alphabetic-representational field, a city overflowing with texts and newspapers where the intelligentsia have thus far been the information-producing 'authors', but who are not yet prepared to embrace the new codes of new technologies. "Should São Paulan writers succeed in advancing from the alphabet into new codes (from paper in new mnemonic devices), then São Paulo can be revived as an innovation centre" (Flusser 1992a: 208; my translation). Flusser contends that the overarching phases of occidental media history (from two-dimensional visual thought to one-dimensional representational thought ushered in by print culture, which continue to play out in a dialectical process) have been largely lost on São Paulo.

Flusser's belief that the 'space of the city' will be transformed by telematics is best articulated in his article *Die Stadt als Wellental in der Bilderflut* (1990), first written in 1988. The city must be rethought topographically, rather than geographically. Subjects are *knots* of interrelations and information channels, out of which the *net* of a city is weaved. Again, this view holds to the dialogic nature of the city as a relational field. McLuhan suggested that a post-Gutenberg, postvisual soci-

ety would mean the obsolescence of the metropolis as we know it. Flusser similarly believed that media posthistory—the end of history as it has been written—also signifies an end, not of the city altogether, but of the city as a historically defined spatial field (see also Flusser 1991). In many ways, Flusser sets out to describe a new version of McLuhan's *global village*. He anticipates that new city communities will crystallise as a result of reversible technologies.

It is interesting to speculate about the ways in which Flusser would have treated the increasing computation of language itself. Today's possibilities of machine translation and speech recognition technologies would, I believe, have been of profound interest to him. In a certain sense, the *processing* of language, its continual translation and re-translation, is embedded in Flusser's theory of telematics. If we accept that machine translation, in Derridean terms, is both necessary and impossible, then the city itself appears always already to have been a *medium* in the sense that cities have always worked to *process* the gaps between languages. This point, which I believe is implicit in Flusser's lifework, might allow us to make a further point of connection between the media philosophies of Flusser and Friedrich Kittler. For Kittler, the 'city is a medium' because, first and foremost, it is like other media: it not only transports and stores information, but also – and primarily – processes information (Kittler 1996). What distinguishes their points of view is that, for Flusser, the *processing of information* is done by subjects who are knotted together at the intersection of media channels, whereas for Kittler *so-called human beings* are external to the very media processes that surround and define them. Flusser would have been fascinated by the increasing technologisation of language and the human voice and concurrent shifts in city life. His notion of reversibility anticipated mobile phones, the speech input-output technologies most prominently linked to movement across urban space. He would have had much to say about the proliferating use of automated voices and speech recognition platforms that accompany telephony, as well as net-based speech recognition applications such as VoiceXML that are expanding beyond the navigation of call centres to link urban transportation and communication networks through mobile GPS and internet search mechanisms. Flusser had begun to concentrate more and more on writing about the city just before his untimely death in late 1991. Had he lived longer, I believe it likely that he would have continued to write about the history of the city as a perpetually dialogic space and the rise of the telematic society.

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