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**Autor:** Joseph, John E.  
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# The Cerebral Closet: Language as *valeur* and *trésor* in Saussure

John E. Joseph

The economic metaphor of *valeur* plays a central role in the *Cours de linguistique générale* of Ferdinand de Saussure, which defines a language as a system of values. Much ink has been spilled in speculation over its possible sources, while relatively little attention has been given to another economic metaphor used by Saussure: that of language as a *trésor*, an ambiguous word which can refer either to valuables (in which *valeur* is stored) or to a container for valuables. Both meanings are apposite, since the metaphor arises in the context of discussing both what a language is and where it is located in the people who know it. In this study I examine work in political economics and psychology that Saussure had encountered, and show how the metaphors become more meaningful in the light of what his predecessors maintained about the nature of economic value, and about how knowledge of language is stored – within the nervous-muscular system involved in language production, or in what Alexander Bain scorned as a “cerebral closet.” Also considered is Saussure’s position on the negotiation of value in *parole* and in diachrony, and how his views on the *trésor* in multiple brains compares and contrasts with present-day views of extended cognition and distributed language.

## 1. The background to value in the *Cours de linguistique générale*

Two economic metaphors are especially striking in the *Cours de linguistique générale* (henceforth *CLG*), compiled posthumously from notes taken by students of Ferdinand de Saussure (1857-1913) in lectures he gave between 1907 and 1911. For Saussure, a language is a system of *va-*

*leurs*, values, in a sense that will be explored below; this word occurs many times in the book. In addition, in some passages it refers to a language as a *trésor*, an accumulation of valuables or the container for one.

Neither *valeur* nor *trésor* has an exclusively economic meaning: values can be moral, and a *trésor* can be a box or pouch which has never actually had money or valuables in it. Both meanings of *trésor* – as stored value (the contents meaning), and the location where values are stored (the container meaning) – are apposite in the context, since the *CLG* is discussing both what a language is and where it is located in the people who know it.<sup>1</sup>

Saussure's contribution to the understanding of language from the early 20th century onwards lay in no small part with his conceptual deployment of *valeur*. He envisaged a language as a collection of signs, each the conjunction of a signified, or mental concept, with a signifier, a mental sound pattern or sound-image. The term sound-image is deceptive, though, because a signifier is neither a sound nor an image, but a value. Nor is a signified a concept, exactly. The values that signifiers and signifieds consist of are nothing other than their difference from all the other signifiers and signifieds in the language system.

This modernist way of conceiving of a language was strikingly original to those who heard Saussure's lectures on general linguistics in Geneva from 1907 to 1911, and to the hundreds, and eventually millions, who read the *CLG*, the centenary of which we celebrate in 2016. It set linguistics on a new path, to be followed in time by ethnography, psychoanalysis, phenomenology, literary and cultural studies, sociology and other disciplines in which structuralism had an impact. Yet these concepts of sign and value were far from new. They had figured in Saussure's own education, before being abandoned as *passé*, and then forgotten until he unwittingly resurrected them.

As detailed in Joseph (*Saussure*), between his secondary education at the Collège de Genève and his university studies Saussure attended the Gymnase de Genève, which was located in the buildings of the Université de Genève, and where the teachers were men who also taught at the Collège or Université or both. The course given by the director of the Gymnase, Isaac-Antoine Verchère (1827-1916), may have had the most enduring impact on Saussure. One of his classmates wrote in his memoirs that Verchère "gave us an enjoyable logic course of extreme sim-

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<sup>1</sup> Also meriting consideration are *dépôt*, which occurs at *CLG* 232 and can have the meaning of a financial deposit, and *somme*, which appears frequently in the book; but space limitations require me to set them aside, as it does the instances of all these words in the source materials that are not reflected in the published *Cours*.

plicity” (Lemaître 36);<sup>2</sup> another recalled that “I did not understand very much of it; the subject of his course was, I think, psychology” (David 110).<sup>3</sup> In fact the course was a comprehensive survey of philosophy from ancient to modern times, and it did cover psychology as well. It is interesting that Lemaître remembered it as a course in Logic, which was one of the main subdivisions and which included the section on language. The course notes taken by one student open:

One of the great apanages of the human species is the ability to communicate intellectually. These communications are carried out by different means which generally take the name of *language* [langage]. The material processes are called *signs*. But if one gives a sign to an absent person it no longer has any value. Every time a collection of conventional or natural signs is made, this is called a language [langage]. There are several systems of signs: thus the sounds of the voice or *speech* [parole], which is language *par excellence* (*la langue*) (παράβολα [parabola], comparison, then language [langage]). (Claparède f. 426)<sup>4</sup>

Notes from a similar course that Saussure took as a university student, given by Henri-Frédéric Amiel (1821-1881), now remembered for his *Journal intime* (originally published in two volumes in 1882-4), likewise contain material on sign theory that links back to Amiel’s and Verchère’s own education of half a century earlier. Then the 17th-18th century *grammaire générale* tradition was still the core of Genevese education, unlike in France, where it had not survived Napoleonic reforms.<sup>5</sup> It is striking how many of the terms we associate with Saussure are present in this paragraph from Verchère: *langage*, *signe*, *langue*, *parole* and, of course, *valeur*. These terms were part of the academic air that Saussure grew up breathing; and when he began to lecture on general linguistics

<sup>2</sup> “Notre professeur de philosophie, M. Verchère, nous donnait un agréable cours de logique d’une extrême simplicité.” This and all other translations are my own unless otherwise indicated.

<sup>3</sup> “Verchère enseignait la philosophie, à laquelle je ne comprenais pas grand-chose; la matière de son cours était, je crois, la psychologie.”

<sup>4</sup> “Un des grands appanages de l’espèce humaine c’est de pouvoir communiquer intellectuellement. Ces communications se font par différents moyens qui portent généralement le nom de langage. Les procédés matériels s’appellent signes. Mais si on fait un signe à une personne absente il n’a plus de valeur. Toutes les fois qu’on fait une collection de signes conventionnels ou naturels, cela s’appelle un langage. Il y a plusieurs systèmes de signes: ainsi les sons de la voix ou parole, c’est le langage par excellence (*la langue*) (παράβολα, comparaison, puis langage).”

<sup>5</sup> For more on Genevese education in the first half of the 19th century see Joseph, “Language Pedagogy.”



in 1907 he may have been unaware that his students had grown up in a changed atmosphere. Saussure was in the one of the very last cohorts to be taught by these men of his grandparents' generation.

But the terms do not have the same *value* in Verchère's use of them as they will in Saussure's. He redefined all of them, making them into a system, where the value of each depends on its relation to the others. How did he come to conceive of them in this new way? Saussure mentions *économie politique* in his lectures on general linguistics, and many have speculated about economic theorists who may have influenced him. He never cites any. But the journal kept by one of his friends during their time as a student in the Université de Genève records that "De Saussure is taking an impossible load of courses, a bit of everything, theology, law, sciences; he's taking second-year courses where he understands nothing, since he didn't take the first year. In short, he's doing it as only he can" (Pictet).<sup>6</sup>

The Law Faculty had a course on political economy, taught by Henri Dameth (1812-1884), formerly a teacher in the prestigious Lycée Louis-le-Grand in Paris, until his Fourierist affiliations got him into trouble with the administration of Napoleon III (Busino and Stelling-Michaud 16). Dameth's *Introduction à l'étude de l'économie politique* was published in 1865, with a second edition in 1878, just three years after Saussure was attending lectures in his Faculty. It consists of a set of lectures, bound to be close, if not identical, to his university lectures. This is the nearest we have to a documented source for Saussure's comments on economics, and such is the oblivion into which Dameth has fallen that it was never explored prior to Joseph, "Saussure's Value(s)." In his second lecture Dameth asks:

So, has political economics discovered the great generating fact that plays such a decisive role in constituting a science? – Yes, it is the notion of *value*. To such a degree that a good many economists today propose defining political economics as *the science of value*. (Dameth 24, 230)<sup>7</sup>

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<sup>6</sup> "De Saussure prend un tas de cours impossible, un peu de tout, il est autant en Théologie qu'en Droit, qu'en Sciences; il prend des cours de 2<sup>ème</sup> année où il ne comprend rien, vu que la 1<sup>ère</sup> lui manque. Bref, il fait cela à sa manière lui."

<sup>7</sup> "Enfin, l'économie politique a-t-elle découvert ce grand fait générateur qui joue un rôle si décisif dans la constitution d'une science? – Oui, c'est la notion de la *valeur*. A telles enseignes que bon nombre d'économistes proposent aujourd'hui de définir l'économie politique la *science de la valeur*."

Saussure too will confront the question of whether linguistics is a science, and will argue that it is a science of values. When Dameth comes to explain *prix*, he again does so in terms that will have echoes in Saussure's discussion in the *CLG*:

A rather intense degree of observation is needed to comprehend: (1) that price is only the monetary expression of the value of goods; (2) that, in the formation of price, money only plays the role of a term of comparison between goods; (3) that the value of the money itself depends on the ratio of the quantity of it available relative to the quantity of goods for which it serves as the means of exchange. (Dameth 41)<sup>8</sup>

Goods have a value, expressible in money, which is only a term of comparison – of difference – between goods. We have seen Verchère pointing out that the word *parole* derives from Greek *parabola*, comparison. At the same time, money itself has a value which depends on how much of it is available relative to the supply of goods. But what determines the value of particular goods?

Dameth says that economists recognize a “natural” or “real” value of goods, which represents their total cost of production, including raw materials, interest on capital, workers’ salaries, taxes, transportation and the like. This he says gives the “essence” of the price of the goods; but not their market price. That follows the law of supply and demand, which “oscillates incessantly around the *natural price* and sometimes even strays distantly from it” (Dameth 41, 252).<sup>9</sup> The *CLG* recalls this relationship: “through one of its sides a value is rooted in things and their natural relations (as is the case in economic science – for example the value of a plot of land is proportional to what it brings in” (*CLG* 2116).<sup>10</sup> But it then denies that this applies in the case of language, where there is no such natural basis, all being instead completely arbitrary. The system of a language is so complex that it is impossible to

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<sup>8</sup> “[I]l faut un degré d’observation déjà assez intense pour comprendre: 1° que le prix n’est que l’expression monétaire de la valeur des marchandises; 2° que la monnaie ne joue, dans la formation du prix, que le rôle d’un terme de comparaison des marchandises entre elles; 3° que la valeur de l’argent lui-même dépend de son rapport de quantité présente avec celle des marchandises auxquelles il sert de moyen d’échange.” Some changes were made to this passage in the 1878 edition.

<sup>9</sup> “oscille incessamment autour du prix *naturel* et s’en éloigne même parfois beaucoup.”

<sup>10</sup> “par un de ses côtés une valeur a sa racine dans les choses et leurs rapports naturels (comme c’est le cas dans la science économique – par exemple un fonds de terre vaut en proportion de ce qu’il rapporte).”

study simultaneously the two axes which the *CLG* at this point christens synchronic and diachronic. They must be analyzed in sequence.

Dameth gives a potted history of the idea of value. First there was the mistaken identification of value with price. This the economists replaced with another concept, equating value with utility. This was progress, as it made value “internal, inherent to the object bought and sold” (77, 295)<sup>11</sup> –but only by shifting the burden of definition from “What is value?” to “What is utility?” Nothing is more useful to man than air or light, yet because the supply of these is not limited, they have no ‘value’ in the economic sense. The utility-based concept of value fails to take supply and demand into account.

The next step was to place the origin of value in human work: this Dameth (80, 299) attributes to Adam Smith’s distinction between “*usage* value and *exchange* value,”<sup>12</sup> a necessary bridge out of pure utility. Ultimately though, the value of usage is individually based; it might apply to Robinson Crusoe on his island, but not to value in society. “The moment we leave this novelistic fiction, in order to reason about society, usage value too disappears, absorbed by exchange value” (81, 2100).<sup>13</sup>

Dameth reduces his principle to a formula: “Value is the power of exchange that services possess relative to one another” (85, 2105-6).<sup>14</sup> He adds that “the chief meaning of this notion is that to man alone belongs the creation of value; that in reality he neither sells nor buys nor exchanges anything other than this [. . .].”<sup>15</sup> In other words, what can be owned, bought, sold or exchanged is not goods or property but *value alone*, and that is a human creation. “So conceived, the economic world appears to us as a vast market in which services are exchanged for services.”<sup>16</sup> When the *CLG* revisits value at greater length, it takes this exchange-based approach, which helps us understand what Saussure meant in repeatedly calling a language a “social fact.”

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<sup>11</sup> “interne, inhérent à l’objet qui se vend et s’achète.”

<sup>12</sup> “la valeur d’*usage* et la valeur d’*échange*.”

<sup>13</sup> “Dès que nous sortons de cette fiction de roman, pour raisonner sur la société, la valeur d’usage disparaît à son tour, absorbée par la valeur d’échange.”

<sup>14</sup> “La valeur est la puissance relative d’échange que possèdent les services entre eux.”

<sup>15</sup> “le sens capital de cette notion, c’est qu’à l’homme seul appartient la création de la valeur; qu’il ne vend et n’achète ou n’échange en réalité que cela [...].”

<sup>16</sup> “Ainsi conçu, le monde économique nous apparaît comme un vaste marché où des services s’échangent contre des services.”

Even outside language, all values [ . . . ] are always constituted:

(1) by a *dissimilar* thing susceptible to being *exchanged* for something of which the value is to be determined;

(2) by *similar* things that can be *compared* with the one whose value is in question.

[ . . . ] Hence for a five-franc piece, one needs to know: (1) that it can be exchanged for a determinate quantity of something different, for example bread; (2) that it can be compared with a similar value of the same system (a dollar, etc.). Likewise a word can be exchanged for something dissimilar: an idea; moreover, it can be compared with something of the same nature: another word. (CLG 2159-60)<sup>17</sup>

This is one of those instances where the *CLG*, for ease of exposition, keeps the vernacular terms word and idea, which it elsewhere replaces with signifier and signified.

## 2. From *parole* and diachrony to synchronic *langue*

For Saussure, *parole*, the production of utterances, is a free linguistic market. An individual brings his or her innovation to it, which may or may not “sell” to the broader speech community, in the sense that others hearing it may or may not start using it themselves. Most of the time they do not, but innovations are adopted often enough to ensure that no language stays unaltered over time. The market is free in the sense that changes from below, in social terms, are no less likely to occur than changes from above. If anything, the reverse is true (apart from cases where a strong-arm regime punishes disobedience of its linguistic dictates, and even that tends to spawn resistance).

What is it that determines whether a given innovation is adopted as a language-wide change? Saussure did not pretend to offer an answer; linguists can only give a *post hoc* rationale, based on the general assumption that an innovation that succeeds must offer something positive to the

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<sup>17</sup> “[M]ême en dehors de la langue, toutes les valeurs [ . . . ] sont toujours constituées: 1° par une chose *dissemblable* susceptible d’être *échangée* contre celle dont la valeur est à déterminer; 2° par les choses *similaires* qu’on peut *comparer* avec celle dont la valeur est en cause. [ . . . ] Ainsi pour déterminer ce que vaut une pièce de cinq francs, il faut savoir: 1° qu’on peut l’échanger contre une quantité déterminée d’une chose différente, par exemple du pain; 2° qu’on peut la comparer avec une valeur similaire du même système, par exemple une pièce d’un franc, ou avec une monnaie d’un autre système: (un dollar, etc.). De même un mot peut être échangé contre quelque chose de dissemblable: une idée; en outre, il peut être comparé avec quelque chose de même nature: un autre mot.”

linguaging experience. Greater ease, perhaps – but this is tricky, because ease is not objectively measurable, and in many areas of language, as Gabelentz recognized, greater ease of articulation means that more effort has to be put into comprehension. Greater nuance, greater expressivity – again, all ultimately subjective. Joseph (“Iconicity”) discusses cases in which Saussure applies what we might call iconicity or sound symbolism (he did not use either term) as an explanation for the development of certain seemingly exceptional forms in Latin and Greek. This is surprising, since Saussure is remembered for making the arbitrariness of linguistic signs the first principle of his synchronic linguistics. But how signs are *used* in *parole*, and how, consequently, they change in diachrony, is another matter: here the subjective reactions of *some* speakers might suffice to shift the balance in favour of a change, so that it becomes prevalent in *parole* and eventually in a new state of the language (*état de langue*).

Saussure (“Adjectifs”) proposes that a particular set of sounds had a meaning or quasi-meaning in Indo-European. The “type” in question is a group of adjectives linked phonetically by having a diphthong that starts with /a/, and semantically by referring to some infirmity or deviation from the “right” or “straight.” The diphthong could be /ai/ (as in Latin *caecus* “blind”) or /au/, but also /ar/, /al/, /an/ or /am/, all of which are analyzed by Saussure, starting in his early *Mémoire*, as /a/ + sonant, hence as diphthongs in the same way that /a/ + /i/, or /a/ + /u/, form diphthongs. There is iconicity in the correlation between how the “straight” vowel /a/ “deviates” off into the sonant, and the meaning of deviance from the straight, the normal. Saussure points out that words with /a/ diphthongs, such as Latin *blaesus* “stammering,” *claudus* “limping,” *calvus* “bald,” *mancus* “maimed,” are few in number and are isolated within the language, being attached neither to any strong verb nor to an etymological family. The *a* diphthongs would be marked (to use a later terminology) for rarity and isolation, and being so marked they would correlate with meanings that likewise involve marginality or abnormality. It is through the regularity of this correlation that these apparently marginal elements are incorporated into the system where everything connects. But how does this happen? Saussure’s explanation relies on another aspect of his general linguistic system, the relationship of synchrony to diachrony. He imagines

a time when there existed perhaps only four or five adjectives of “infirmity” with the diphthongs *ai*, *au*, *an*, etc. Around this nucleus furnished by chance, ever more numerous formations will have come to fix themselves, where a

certain community of ideas favoured diphthongs with *a*. It would thus involve a fact of lexical analogy [. . .]. (Saussure, “Adjectifs” 206)<sup>18</sup>

Note that he attributes the *origin* of this “nucleus” not to iconicity, but to chance. Once the cryptotype was established, however, diphthongs with /a/ were “favoured” for words sharing this general idea of infirmity. The favouring would presumably take place in the competition amongst innovative forms that occurs within *parole*. For Saussure, the key question in language change is not “Why are new forms introduced?” In *parole* speakers are constantly introducing new forms, only a tiny proportion of which will find the social sanction that will make them part of *langue* (in a new *état de langue*). Rather, the question is “Why are certain forms sanctioned and not others?” (see Saussure, *Deuxième cours* 47; Joseph, “La teinte”). This is where the sort of analogy-driven favouring he refers to could make a difference.

The associative relations that are central to Saussure’s conception of *langue* make it plausible that the analogy he proposes was synchronically real for speakers – again, for *some* speakers, enough of them for it to have left a recoverable diachronic trace, but perhaps not enough of them for the set of /a/ diphthongs to form a morpheme, a meaningful unit in the *langue* that all speakers share – the *trésor*, in the contents sense.

### 3. Language as *trésor*, value as difference, and the cerebral closet

On one occasion the *CLG* uses *trésor* to describe a language in a way that rather clearly means the contents:

It is a *trésor* deposited by the practice of *parole* in the subjects belonging to one same community, a grammatical system existing virtually in each brain, or more exactly in the brains of an ensemble of individuals; for the language is not complete in any one, it exists perfectly only in the mass. (*CLG* 230)<sup>19</sup>

<sup>18</sup> “le temps où il n’existait peut-être que quatre ou cinq adjectifs ‘d’infirmité’ avec le vocalisme *ai*, *au*, *an*, etc. Autour de ce noyau fourni par le hasard seront venues se fixer des formations toujours plus nombreuses, où une certaine communauté de l’idée mettrait en faveur les diphtongues par *a*. Il s’agirait donc d’un fait d’analogie lexicologique [. . .].”

<sup>19</sup> “C’est un trésor déposé par la pratique de la parole dans les sujets appartenant à une même communauté, un système grammatical existant virtuellement dans chaque cerveau, ou plus exactement dans les cerveaux d’un ensemble d’individus; car la langue n’est complète dans aucun, elle n’existe parfaitement que dans la masse.”



Harris's translation (13) has "a fund accumulated" for *un trésor déposé*, while Baskin's (13) has "a storehouse filled." When ten years later Harris translated a student's notes from Saussure's third course in general linguistics (1910-11), in the passage corresponding to Saussure (CLG 230) he rendered *trésor* as "hoard" (Saussure, *Troisième cours* 7a). If Baskin's "filled" is a stretch for *déposé*, it lets him translate *trésor* consistently as "storehouse" on its other occurrences (Baskin 123, 165):

[T]hese coordinations [. . .] do not have an extension to support them; their seat is in the brain; they are part of this inner *trésor* that constitutes the language in each individual. We shall call them *associative relations*. (CLG 2171)<sup>20</sup>

Every analogical creation must be preceded by an unconscious comparison of the materials deposited in the *trésor* of the *langue* where the generating forms are arranged according to their syntagmatic and associative relations. (CLG 2227)<sup>21</sup>

In the first passage, Harris (122) has "that accumulated store" for *ce trésor intérieur*, and again "store" for *trésor* in the second (164). The first passage comes from Saussure's second course in general linguistics (1908-9), the second from the first course (1907). Harris's student Wolf translated a set of student notes from each of these courses, rendering its occurrences of *trésor* as "treasury" (Saussure, *Deuxième cours* 119, 123) or "fund" (Saussure, *Premier cours* 63, 65, 66, 67). Before looking more closely at the student notes, which bring in other metaphors alongside *trésor*, some of them clearly of the container rather than contents type, it is worth considering the background to how the retention of knowledge was conceived.

Joseph (*Language, Mind and Body*) recounts the long history – as old as history itself – of arguments over what knowledge is and what form it takes in whoever or whatever has it. Through the middle ages and well into the modern period, medical and philosophical writers generally located memory in the posterior ventricle (or cell) of the brain, while the anterior ventricle was where sensory input and motor output were regulated by the common sense, and the middle ventricle was responsible

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<sup>20</sup> "[C]es coordinations [. . .] n'ont pas pour support l'étendue; leur siège est dans le cerveau; elles font partie de ce trésor intérieur qui constitue la langue chez chaque individu. Nous les appellerons *rapports associatifs*."

<sup>21</sup> "Toute création doit être précédée d'une comparaison inconsciente des matériaux déposés dans le trésor de la langue où les formes génératrices sont rangées selon leurs rapports syntagmatiques et associatifs."

for reasoning. The rebirth of anatomical study in the early modern period brought improved understanding of the nervous system, and medical observation of reflexes showed that some nervous-muscular reactions involved only the spinal cord and not the brain. British philosophers starting with Thomas Hobbes (1588-1679) and John Locke (1632-1704) put forward a theory of "associations" as the source of knowledge, which David Hartley (1705-1757) would develop into an account of how knowledge is not only acquired but "stored" as vibrations in the nervous system. This associationism persisted in Britain, surviving periods in which rival theories were more to the fore.

In the second half of the 19th century, the work of Alexander Bain (1818-1903) put forward an up-to-date version of associationism that took account of contemporary medical science. It became the new modernism of the younger generation of French psychologists, thanks mainly to its being championed by Hippolyte Taine. Bain laid out a series of "general laws of alliance of body and mind," of which a central one was the Principle of Relativity, "the necessity of change in order to our being conscious," which he called "the groundwork of Thought, Intellect, or Knowledge, as well as of Feeling. We know heat only in the transition from cold, and *vice versa*; up and down, long and short, red and not red – all are so many transitions, or changes of impression; and without transition we have no knowledge" (Bain, *Mind and Body* 81). He makes the strong claim that knowledge, in effect, equates with difference:

Our knowledge begins, as it were, with difference; we do not know any one thing of itself, but only the difference between it and another thing; the present sensation of heat is, in fact, a difference from the preceding cold. (81)

The idea that "all consciousness is of difference" had been stated by Mill, crediting it to Hamilton. Spencer (324-7) contains a further elaboration of the steps leading from simple difference to "consciousness" in the full sense. Bain adds, as his predecessors did not do, that this principle applies to the sounds of language, and not just to concepts or ideas: "Our discrimination of *articulate* sounds is co-extensive with the combined alphabets of all the languages known to us" (Bain, *Mind and Body* 84).

Bain treats memory as a physical phenomenon, with a description that prefigures the "connectionism" of Rumelhart et al.: currents of force passing through nervous circuits create "specific growths in the cell junctions" (Bain, *Mind and Body* 91). The stronger the original force,



the more vivid the impression left on the circuit, quite like the “weights” of connectionist analysis.

As for the mental recollection of language, it “is a suppressed articulation, ready to burst into speech. When the thought of an action excites us very much, we can hardly avoid the actual repetition, so completely are all the nervous circuits repossessed with the original currents of force” (90). But most remembered states or ideas are not so vivid, but of a “comparative feebleness” that is “an exact counterpart of the diminished force of the revived currents of the brain” (91), so suppressing our articulation of them is not difficult:

[W]hen I see a written word and, as a result of my education, pronounce it orally, the power lies in a series of definite groupings or connexions of nerve-currents in the nerve and centres of the eye, with currents in motor nerves proceeding to the chest, larynx and mouth; and these groupings or connexions are effected by definite growths at certain proper or convenient cell crossings. (91)

Bain (*Senses and Intellect* 334) had already articulated this idea of a silent interior “nervous” speech. It challenges what he calls the “old notion” which “supposes that the brain is a sort of receptacle of the impressions of sense, where they lie stored up in a chamber quite apart from the recipient apparatus, to be manifested again to the mind when occasion calls.” He contrasts this with “the modern theory of the brain,” which “suggests a totally different view”:

We have seen that the brain is only one part of the course of nervous action; that the completed circles take in the nerves and the extremities of the body; that nervous action consists of a current passing through these complete circles, or to and fro between the ganglia and the organs of sense and motion; and that short of a completed course no nervous action exists. The idea of a cerebral closet is quite incompatible with the real manner of the working of nerve. Seeing then that a sensation in the first instance diffuses nerve currents through the interior of the brain outwards to the organs of expression and movement, the persistence of that sensation after the outward exciting cause is withdrawn, can only be a continuance of the same diffusive currents, perhaps less intense, but not otherwise different. (332)

The “cerebral closet” is the back ventricle of mediaeval cell theory, seat of the *virtus memorialis*. It is an uncharacteristically biting metaphor from Bain, whose alternative to it is essentially that offered by the connectionism that posed a powerful challenge to the Chomskyan mental closet in the 1980s.

After completing his doctorate at Leipzig in 1881, Saussure went to Paris with the intention of doing a second one. Early in his time there, Victor Egger (1848-1909) published his own doctoral thesis as a book entitled *La parole intérieure: Essai de psychologie descriptive* (Inner Speech: Essay in Descriptive Psychology). Saussure's notes on his reading of this book allow us to trace his reaction to it and to infer its impact on his subsequent thinking (see Joseph, *Saussure* 288-91). Egger begins his book by asserting that

At every moment, the mind is speaking its thought internally. [. . .] The series of inner words forms an almost continual series, in parallel with other series of psychic facts; it thus constitutes a considerable part of our consciousness. (Egger 1)<sup>22</sup>

Egger looked back mostly to French sources from the start of the century, following the Vicomte de Bonald (1754-1840) particularly closely, while blaming Maine de Biran (1766-1824) for a mistake that Bain repeated, and then transmitted to the younger generation of French psychologists: "much too great importance is attributed to muscular movement, which is only a means, and which, as such, is neglected by the attention, whereas all the mental effort bears upon the sound, which is the goal of the movement and the essential element of speech" (Egger 41).<sup>23</sup> Egger downplays the role of inner speech in Bain:

in one of the rare passages he [Bain] devotes to it, inner speech becomes a muscular-tactile image. This latter idea, unfortunately, has caught on; for there is today, among psychologists, a *school of touch* or, more precisely, a *school of muscle*, which leads all the operations of the mind back willy-nilly to the active touch and the muscular sense. [. . .] Taine is among those who have accepted Bain's error without discussion, and he too accords only a brief mention to inner speech. (Egger 59)<sup>24</sup>

<sup>22</sup> "À tout instant, l'âme parle intérieurement sa pensée. [...] La série des mots intérieurs forme une succession presque continue, parallèle à la succession des autres faits psychiques; à elle seule, elle retient donc une partie considérable de la conscience de chacun de nous."

<sup>23</sup> "une importance beaucoup trop grande est attribuée au mouvement musculaire, qui n'est qu'un moyen, et qui, comme tel, est négligé par l'attention [...], tandis que tout l'effort mental se porte sur le son, qui est le but du mouvement et l'élément essentiel de la parole."

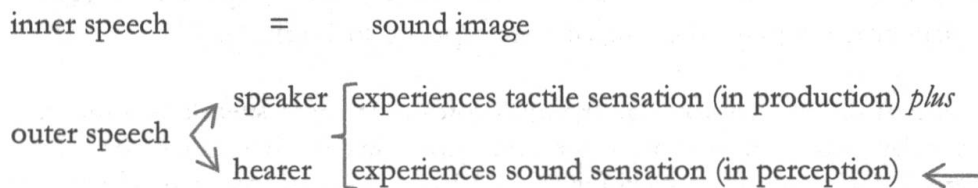
<sup>24</sup> "dans un des rares passages qu'il lui consacre, la parole intérieure devient une image musculaire-tactile. Cette dernière idée, malheureusement, a fait fortune: car il y a aujourd'hui, parmi les psychologues, une *école du toucher* ou, pour mieux dire, une *école du muscle*, qui ramène de gré ou de force toutes les opérations de l'âme au toucher actif et au

But Egger fails to consider the reasons behind Bain's nervous-muscular (not "tactile") location of inner speech: the fact that the alternative location is a "closet" in the brain in which is stored the "memory" of perceptions and productions, a memory that is a reflection transferred from the original mode of perception and production to something of an entirely different nature. Egger speaks of memory – particular *souvenirs* and the general capacity of *mémoire* – and above all of *images*, as in the preceding quote.

Further on, Egger makes it clearer that he does believe in an "image of buccal movement" that plays an essential role in producing outer speech, but none in inner speech, the essence of which is the sound image alone:

Inner speech is a simple image, a purely sonorous image; in the same way, the outer speech of another heard by us is a simple sensation, purely sonorous; but it is otherwise with our own speech, perceived by our ear at the same time as it is produced by our vocal organs; this time it is a double sensation, simultaneously sonorous and tactile, or, more precisely, a couple of sensations. (Egger 75-6)<sup>25</sup>

Egger's view can be schematized thus:



Presumably the speaker of outer speech is often experiencing inner speech at the same time, in which case another arrow should extend from *plus* upward to sound image. But Egger does not mention this; his aim at this point is to widen the gap between inner and outer speech, and to associate Bain's conception with the outer. As Egger goes on to specify where he differs from Bain, he acknowledges that an image of

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sens musculaire. [. . .] M. Taine est de ceux qui ont accepté sans discussion l'erreur de Bain, et lui aussi n'accorde à la parole intérieure qu'une courte mention."

<sup>25</sup> "La parole intérieure est une image simple, une image purement sonore; de même, la parole extérieure d'autrui entendue par nous est une sensation simple, purement sonore; mais il en est autrement de notre propre parole, perçue par notre oreille en même temps qu'elle est produite par nos organes vocaux; celle-ci est une sensation double, à la fois sonore et tactile, ou, pour mieux dire, un couple de sensations."

the movement of the vocal organs *may* be present during inner speech – in fact the organs may actually move in a silent “sketch” – but he insists that this does not have the importance Bain accords to it:

According to Bain and his school, on the contrary, the image of the buccal movement, or even an actual sketch of a laryngeal-buccal movement, always accompanies inner speech; moreover, if we take Bain literally, the phenomenon of inner speech would be essentially an interrupted movement or the simple image of this movement. [. . .] We know that, according to Bain, tactile-muscular sensation or its image is a necessary element of all intellectual facts; we fear that the systematic spirit has not led him, on the point we are dealing with, to any more rigorous observation. (Egger 76-7)<sup>26</sup>

The question remains of where inner speech takes place. Bain posited a stark choice between nervous-organic association and a mental “closet,” while skewing the pitch by implying that only the former accords with scientific findings. Egger’s response is one that he is not the first nor will be the last to give: that the “where” question does not apply to inner speech, because it assumes a spatiality and extension that belong only to what is external. “Exteriority is the reason for spatiality” (Egger 98).<sup>27</sup> When speech is exteriorized, it has an extension, hence a location, outside the speaker. Inner speech though is only “localized in a vague and indeterminate way in the head [. . .]. But this is not what were just calling *localization*, when we were speaking about outer speech; inner speech is not the object of a *special* localization in a *precise* place, that is to say a localization in the proper and ordinary sense of the word” (102).<sup>28</sup>

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<sup>26</sup> “D’après Bain et son école, au contraire, l’image du mouvement buccal, ou même une ébauche de mouvement laryngo-buccal réel, accompagnerait toujours la parole intérieure; bien plus, à prendre à la lettre les expressions de Bain, le phénomène de la parole intérieure serait essentiellement un mouvement interrompu ou la simple image de ce mouvement. [. . .] On sait que, suivant Bain, la sensation tactile-musculaire ou son image est un élément nécessaire de tous les faits intellectuels; nous craignons que l’esprit de système ne l’ait entraîné, sur le point qui nous occupe, à une observation peu rigoureuse.”

<sup>27</sup> “c’est l’extériorité qui est la raison de la spatialité.”

<sup>28</sup> “est localisée d’une façon vague et indéterminée dans la tête [. . .]. Mais ce n’est pas là ce que nous appelions tout à l’heure *localisation*, quand nous parlions de la parole extérieure; la parole intérieure n’est pas l’objet d’une localisation *spéciale* dans un lieu *précis*, c’est-à-dire d’une localisation, au sens propre et ordinaire du mot.”

4. *Trésor, casier, magasin*

The three *trésors* of the *CLG* come from the third, second and first courses in general linguistics respectively. The last of them (*CLG* 233, 2227), from the first course, is a passing reference to how the process of linguistic analogy requires “an unconscious comparison of materials deposited in the *trésor* of the *langue*.”

The most complete set of notes from the third course, those by Émile Constantin, were not available to Bally and Sechehaye when they were compiling the *CLG*. Corresponding to the passage from *CLG* 230, Constantin wrote: “One can say that the object to be studied is the *trésor* deposited in each of our brains, this *trésor*, without doubt, if taken from each individual, will nowhere be perfectly complete” (Saussure and Constantin 88; Saussure, *Troisième cours* 7).<sup>29</sup> This is what Harris translates as “hoard,” which suggests a reading of *trésor* as contents rather than container.

The passage that appears at *CLG* 2171 is based mainly on the notes from the second course by Albert Riedlinger, the only one of the students whose collaboration is acknowledged on the title page of the *CLG*. Riedlinger recorded Saussure as referring to

the inner *trésor* that is equivalent to the closet [*casier*] of memory [. . .]; there we have what can be called the storehouse [*magasin*]. It is in this *trésor* that is arranged everything that can enter into activity in the second location. And the second location is discourse, the chain of *parole*. (*CLG/E* [= Critical ed. of *CLG* by Engler] 281, II R 89<sup>1998</sup>; Saussure, *Deuxième cours* 52).<sup>30</sup>

The *casier* metaphor also makes an appearance in the third course: “In effect, we cannot explore the closets [*casiers*] existing inside our brains [We are] obliged to use an external means, supplied by *parole*” (Saussure and Constantin 224-5; Saussure, *Troisième cours* 80).<sup>31</sup> The metaphor may

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<sup>29</sup> “On peut dire que l’objet à étudier, c’est le trésor déposé dans notre cerveau à chacun, ce trésor, sans doute, si on le prend dans chaque individu, ne sera nulle part parfaitement complet.” Komatsu (Saussure, *Troisième cours* 7) has *de* for the second *dans*. The other students’ notes for this passage are similar, but more fragmented.

<sup>30</sup> “le trésor intérieur qui équivaut aux casiers de la mémoire; c’est là ce qu’on peut appeler le magasin [. . .]. C’est dans ce trésor qu’est rangé tout ce qui peut entrer en activité dans le second lieu. Et le second lieu, c’est le discours, c’est la chaîne de la *parole*.”

<sup>31</sup> “En effet, les casiers existant à l’intérieur de notre cerveau, nous ne pouvons les explorer. [Nous sommes] obligés d’employer un moyen extérieur, donné dans la *parole*.” For an examination of the terms *trésor*, *casier* etc. in the context of the *langue/parole* distinction, see Béguelin.

have been chosen casually by Saussure, but it had a resonance with things he had read and that were in the *casiers* of his own memory. De Palo has noted Bréal's (555) comparison of intelligence to a *casier* in which ideas are arranged in order, and rightly points out that these metaphors were in regular use by psychologists of the late 19th century. Bourdieu (23) has also made a link between the use of *trésor* by Saussure and by Auguste Comte (1798-1857), who Bourdieu says "offers an exemplary expression of the illusion of linguistic communism that haunts the whole of linguistic theory."<sup>32</sup>

What has not been remarked upon previously is the central role this particular concept had in Egger, which predates Bréal's book and may have informed it, and which we know Saussure read carefully. It is also significant that Saussure uses the *casier* metaphor in conjunction with "associations," given that the immediate association that would call up for any French psychologist of the time would be the name of Bain. Following the preceding quote from Riedlinger's notes, he records Saussure as saying that

In this mass of elements which we have at our disposal virtually but effectively, in this *trésor*, we make associations: each element makes us think of the other: all that is similar and dissimilar in some way presents itself around each word, otherwise the mechanism of the *langue* would be impossible. (CLG/E 281, II R 90-1<sup>2038</sup>; Saussure, *Deuxième cours* 52).<sup>33</sup>

It is true that 26 years would pass between Saussure's reading of Egger and the start of his lectures on general linguistics. In the interim however there had appeared Victor Henry's (1850-1907) *Antinomies linguistiques* (Linguistic antinomies; see Joseph, "Undoubtedly a powerful influence"). Saussure had known Henry since the start of the 1880s, when they both regularly attended meetings of the Société de linguistique de Paris, and Henry sent him an inscribed copy of his 1896 book, in which Egger figures strongly. In 1905, Henri Odier (1873-1938) published his doctoral thesis, which included the first account of Saussure's theory of

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<sup>32</sup> "offre une expression exemplaire de l'illusion du communisme linguistique qui hante toute la théorie linguistique." Bourdieu bases this judgement on a citation from Comte (1929 [1852]: 254).

<sup>33</sup> "Dans cette masse d'éléments dont nous disposons virtuellement mais effectivement, dans ce trésor, nous faisons des associations: chaque élément nous fait penser à l'autre: tout ce qui est semblable et dissemblable en quelque sorte se présente autour de chaque mot, autrement le mécanisme de la langue serait impossible." Here again the other students' notes are similar in content.



the linguistic sign (see Joseph, "Centenary").<sup>34</sup> Odier's book too was in Saussure's library, and his copy of it contains underlining and notes showing that he read it carefully. The works specifically on language that Odier relies on most heavily are Egger and Henry. Yet Odier makes use of the concept of *valeur* in a way that surprisingly recalls Bain:

The word has a common monetary exchange value. The effigy on it does not vary, but its intrinsic quality, its precise weight, its alloy varies. The particular value of the word, beyond the influence of its meaning, its form and its sonority resides in the mechanism of elocution itself. The muscular movements which are produced involuntarily in the speech organs, when we hear a word, contribute to the timbre of the emotion which the word produces [. . .]. (Odier 34)<sup>35</sup>

Odier makes it evident that he discussed language in depth with Saussure, but his interests tended toward psychology rather than linguistics, and he clearly departs from Saussure's views at several points. So when he writes that a word has an emotional value that "resides in the [. . .] muscular movements which are produced involuntarily in the speech organs, when we hear a word," we cannot assume that Saussure agreed. Still, Charles Bally's (1865-1947) book on *la stylistique*, defined as the study, not of style (as in later stylistics), but of "affective" language along the lines of what Odier is discussing here, bears a dedication to Saussure, who maintained that this should be included within the concerns of linguistics (see Joseph, *Saussure* 612-13).

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<sup>34</sup> Odier was the youngest son of one of Geneva's top banking families, though he himself had no desire to go into the business, unlike his elder brothers, who had been friends of Saussure's since boyhood. Odier's grandson, the University of Toronto philosopher Ronald de Sousa, has told me that his grandfather was however the only one in the family to foresee the Crash of 1929, but was talked out of cashing in his stocks by his supposedly more economically astute brothers.

<sup>35</sup> "Le mot a une valeur monétaire d'échange commun. Son effigie ne varie pas, mais sa qualité intrinsèque, son millième, son alliage varie. La valeur particulière du mot, outre l'influence du sens, de la forme, de la sonorité réside dans le mécanisme même de l'élocution. Les mouvements musculaires qui se produisent involontairement dans les organes de la parole, lorsque nous entendons un mot, contribuent au timbre de l'émotion que produit le mot [. . .]."

5. Rereading *valeur* and *trésor*

Saussure's metaphors of *valeur* and *trésor* look less commonplace and off-hand when read in the light of Dameth's economic views, and Bain's version of associationism together with Egger's rejection of it. Saussure's later remarks about political economy resonate closely enough with Dameth that either Saussure learned it from him, or else – a possibility I would not rule out – Dameth was simply teaching the common economic view current in middle and upper class Geneva in the second half of the 19th century. Value in language is exchange value, which is to say that it is defined by what it is not; a value determinable only through comparison with elements surrounding it with which it might be substituted. This is perfectly in line with Bain, and with Hamilton and Mill before him. The sum of the values, the system, constitutes a *trésor* in the contents sense.

Where it is kept – the *trésor* in the container sense – is where Saussure departs from Bain, as Egger did, but not in the same direction. Saussure refers at various times to Paul Broca's (1824-1880) paper of 1861 reporting his autopsy of a patient who had suffered damage to a specific part of his brain (now known as Broca's area) resulting in a kind of aphasia in which speech production was impaired. Saussure was far from alone in taking this as proof that, *contra* Bain, there is indeed a "cerebral closet" in which knowledge of language is kept, despite the fact that subsequent research has suggested that such a view is a vast oversimplification – even though Broca's identification of one particular area for one type of aphasia has held up, along with another such identification made by Carl Wernicke (1848-1905) in 1874 (see Eling and Whitaker; Joseph, *Language, Mind and Body*).

Recent years have seen a move away from attempts at localizing language functions in the brain, and toward rethinking how what we call the mind is "extended" throughout the body and beyond, at least to the blind person's white cane, possibly even to your iPhone – and how my mind may be "distributed," not just to my body but to yours. This is related to what Dameth was saying about Robinson Crusoe and the social nature of value, and to Egger's point about inner speech not having a location because it lacks extension. Perhaps it is also what Saussure was groping toward in his repeated insistences that a language is a "social fact," and was struggling to get across by saying that a language is a *trésor* deposited in the brain of each individual that is however actually complete only across the brains of all the individuals in a community. His retreat to what Bain rejected as a "cerebral closet" is ironic, given



how closely Bain anticipated Saussure's contention that not only is the conceptual side of language a matter of pure difference, but the phonic side is as well.

To judge from Dameth's published lectures on political economy, if Saussure attended his course, as seems likely, he got a good education in the development of modern economics since the late 18th century. His reading of Egger at the start of the 1880s then gave him a solid grounding in the development of psychology over the same period. In both fields the key innovations had come from Britain – Adam Smith; the utilitarians Bentham, James Mill and John Stuart Mill; Ricardo; and for psychology, the tradition of Locke, which had its own branch in France, but where psychology was being re-Briticized under the influence of Bain. The modernity of economics was based on its becoming psychologized; the modernity of psychology was dependent in part on its becoming physicalized. They were, in this regard, moving in opposite directions: economics away from a theory of intrinsic value, to relocate the value of things in what people value, as realized through exchange; psychology away from a theory of intrinsic values, to relocate mind ultimately in mechanical operations in the body, whether in the brain alone or in the whole “sensorimotor apparatus.”

Linguistics, by contrast, was in a relatively stable state – to Saussure's great frustration, because he could see that it rested on illogical premises and unsustainable assumptions. By the time of his lectures on general linguistics, his impending tragedy was that he had given up trying to write a book that would show this in a way that satisfied his self-imposed perfectionist demands. But he had a course to give, and his perfectionism was matched by his devotion to duty. He never dreamed that his colleagues and students would deal him the ultimate posthumous homage and betrayal that is the *Cours de linguistique générale* – a betrayal not because of any minor aspects of his teaching they got wrong, but because they set it down in print at all.

## References

- Bain, Alexander. *The Senses and the Intellect*. London: John W. Parker and Son, 1855.
- . *Mind and Body: The Theories of Their Relation*. New York: D. C. Appleton and Co., 1875. (Originally published 1872.)
- Bally, Charles. *Traité de stylistique française*. 2 vols. Heidelberg: Carl Winter, 1909.
- Béguelin, Marie-José. “Linguistique de la langue et linguistique de la parole.” *Du système linguistique aux actions langagières: Mélanges en l’honneur d’Alain Berrendonner*. Ed. Gilles Corminboeuf and Marie-José Béguelin. Brussels: De Boeck-Duculot, 2011. 641-66.
- Bourdieu, Pierre. *Ce que parler veut dire*. Paris: Fayard, 1982.
- Bréal, Michel. “Comment les mots sont classés dans notre esprit.” *Revue politique et littéraire: Revue des cours littéraires*, 3a s., 8 (1884): 552-5.
- Broca, Paul. “Perte de la parole, ramollissement chronique de destruction partielle du lobe antérieur gauche du cerveau.” *Bulletin de la Société d’Anthropologie de Paris*, (1861): 235-8.
- Busino, Giovanni and Sven Stelling-Michaud. *Matériaux pour une histoire des sciences sociales à Genève: Lettres de Pareto, Pantaleoni, Einaudi, d’Adrien Naville et d’autres*. Cahiers Vilfredo Pareto: Revue Européenne d’Histoire des Sciences Sociales, 6. Geneva: Droz, 1965.
- Claparède, Alexandre. Course Notes, I: Cours de Gymnase, 2e année, V: Cours de Philosophie, Mr le prof. Verchère, 1876. Bibliothèque de Genève, Département de Manuscrits, Cours univ. 578.
- Comte, Auguste. *Système de politique positive, ou Traité de sociologie, instituant la religion de l’humanité*, t. II<sup>e</sup>, contenant la Statique sociale ou le Traité abstrait de l’ordre humain. Paris: chez l’auteur, 1852. (5<sup>e</sup> éd. Paris: Siège de la société positiviste, 1929.)
- Dameth, Henri. *Introduction à l’étude de l’économie politique. Cours public professé à Lyon pendant l’hiver 1864-1865 sous les auspices de la Chambre de Commerce*. Lyon: Méra; Paris: Guillaumin, 1865. (2nd ed. 1878.)
- David, Jean-Élie. *Notes au crayon: Souvenirs d’un arpenteur genevois, 1855-1898*. Ed. by Marianne and Pierre Enckell. Lausanne: Éditions d’Enbas, 2004.
- De Palo, Marina. “Memoria e significato: Linguistica e psicologia intorno a Saussure.” *Cahiers Ferdinand de Saussure* 54 (2001): 359-83.
- Egger, Victor. *La parole intérieure: Essai de psychologie descriptive*. Paris: Germer Baillière, 1881.

- Eling, Paul and Harry Whitaker. "History of Aphasia: From Brain to Language." *Handbook of Clinical Neurology*, vol. 95: *History of Neurology*, Ed. S. Finger, F. Boller and K. L. Tyler. Amsterdam: Elsevier, 2010. 571-82.
- Gabelentz, Georg von der. *Die Sprachwissenschaft: Ihre Aufgaben, Methoden und bisherigen Ergebnisse*. Leipzig: Weigel, 1891.
- Hamilton, Sir William. *Lectures on Metaphysics and Logic*. Ed. Henry Longueville Mansel and John Veitch. 4 vols. Edinburgh and London: Blackwood, 1859-60.
- Henry, Victor. *Antinomies linguistiques*. Paris: F. Alcan, 1896.
- Joseph, John E. "Undoubtedly a powerful influence": Victor Henry's *Antinomies linguistiques* (1896), with an annotated translation of the first chapter." *Language and Communication* 16 (1996): 117-44.
- . "The Centenary of the First Publication of Saussure's Sign Theory – Odier (1905)." *Historiographia Linguistica* 32/2-3 (2005): 309-24.
- . "La teinte de tous les ciels': Divergence et nuance dans la conception saussurienne du changement linguistique." *Cahiers Ferdinand de Saussure* 64 (2010): 145-58.
- . *Saussure*. Oxford: Oxford University Press, 2012.
- . "Language Pedagogy and Political-Cognitive Autonomy in Mid-19th Century Geneva: The Latin Manuals of Louis Longchamp (1802-1874)." *Historiographia Linguistica* 39/2-3 (2012): 259-77.
- . "Iconicity in Saussure's Linguistic Work, and Why it Does Not Contradict the Arbitrariness of the Sign." *Historiographia Linguistica* 42/1 (2015): 85-105.
- . "Saussure's Value(s)." *Recherches sémiotiques/Canadian Journal of Semiotics*, in press for 2016.
- . *Language, Mind and Body: A Conceptual History*. Cambridge: Cambridge University Press, 2016.
- Lemaître, Auguste. *En glanant dans mes souvenirs (Croquis et anecdotes)*. Neuchâtel and Geneva: Éditions Forum, s. d. [1922].
- Mill, John Stuart. *An Examination of Sir William Hamilton's Philosophy, and of the Principal Philosophical Questions Discussed in his Writings*. 3rd ed. London: Longmans, Green, Reader and Dyer, 1867. (1st ed. 1865.)
- Odier, Henri. *Essai d'analyse psychologique du mécanisme du langage dans la compréhension*. Inaugural-Dissertation der philosophischen Fakultät der Universität Bern zur Erlangung der Doktorwürde. Berne: Imprimerie Sheitlin Spring et Cie., 1905.
- Pictet, Amé. Diary entry, 24 October 1875. Bibliothèque de Genève, Département des Manuscrits, Ms. fr. 1599, folder 25, Z. no. 9.

- Rumelhart, D. E., J. L. McClelland and the PDP Research Group. *Parallel Distributed Processing: Explorations in the Microstructure of Cognition. Vol. 1: Foundations; Vol. 2: Psychological and Biological Models.* Cambridge, Massachusetts: MIT Press, 1986.
- Saussure, Ferdinand de. *Mémoire sur le système primitif des voyelles dans les langues indo-européennes.* Leipzig: imprimé par B. G. Teubner, 1879.
- . “Adjectifs indo-européens du type *caecus* ‘aveugle’.” *Festschrift Wilhelm Thomsen zur Vollendung des siebzigsten Lebensjahres am 25. Januar 1912, dargebracht von Freunden und Schülern.* Leipzig: Otto Harrassowitz, 1912. 202-6. Repr. in *Recueil des publications scientifiques de Ferdinand de Saussure.* Geneva: Sonor; Lausanne: Payot; Heidelberg: C. Winter, 1922. 595-9.
- . *Cours de linguistique générale.* Ed. Charles Bally and Albert Sechehaye, with the collaboration of Albert Riedlinger. Lausanne and Paris: Payot, 1916. (2nd ed. 1922; further eds essentially unchanged. Critical ed. by Rudolf Engler, Wiesbaden: Otto Harrassowitz, 1968-74. English trans., *Course in General Linguistics*, by Wade Baskin, New York: Philosophical Library, 1959; another by Roy Harris, London: Duckworth; La Salle, Illinois: Open Court, 1983.)
- . *Troisième cours de linguistique générale (1910-1911), d’après les cahiers d’Émile Constantin / Saussure’s Third Course of Lectures on General Linguistics (1910-1911), from the notebooks of Émile Constantin.* Ed. Eisuke Komatsu, trans. Roy Harris. Oxford and New York: Pergamon, 1993.
- . *Premier cours de linguistique générale (1907), d’après les cahiers d’Albert Riedlinger / Saussure’s First Course of Lectures on General Linguistics (1907), from the notebooks of Albert Riedlinger.* Ed. Eisuke Komatsu, trans. George Wolf. Oxford and New York: Pergamon, 1996.
- . *Deuxième cours de linguistique générale (1908-1909), d’après les cahiers d’Albert Riedlinger et Charles Patois / Saussure’s Second Course of Lectures on General Linguistics (1908-1909), from the notebooks of Albert Riedlinger and Charles Patois.* Ed. Eisuke Komatsu, trans. George Wolf. Oxford and New York: Pergamon, 1997.
- and Émile Constantin. Saussure, “Notes préparatoires pour le cours de linguistique générale 1910-1911,” Constantin, “Linguistique générale, cours de M. le professeur de Saussure 1910-1911.” Ed. Daniele Gambarara and Claudia Mejía Quijano. *Cahiers Ferdinand de Saussure* 58 (2005): 71-290.
- Spencer, Herbert. *The Principles of Psychology.* London: Longman, Brown, Green, and Longmans, 1855.
- Taine, Hippolyte. *De l’intelligence.* 2 vols. Paris: Hachette, 1870.

