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**"The Role of the Senses and Signs in the Economy:**

**More on the Centrality of Materiality"**

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The Role of the Senses and Signs in the Economy:  
More on the Centrality of Materiality

by

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### Abstract

This paper suggests that the sociological analysis of economic life may be improved by drawing on the theory of signs as developed by philosopher Charles Peirce. I take my point of departure from Georg Simmel's essay "Sociology of the Senses" (1907) and raise the question if an economic sociology of the senses is possible and, if so, what it would look like. The different ways in which the senses are used in consumption and production are discussed. It is also argued that one can improve on Simmel's notion of the way that social structure and the senses interact by drawing on the theory of signs in the work of Peirce. Especially three qualities of his semiotic are singled out as being particularly helpful: that the signs constitute an autonomous level, besides those of object and subject; that the actor simultaneously perceives the object and its sign; and that the object determines the sign (not the other way around, as is common in sociology).

Since some years back a number of scholars have argued that the analysis in social science, including the analysis of economic life, needs to take materiality into account (e.g. Latour 1999, 2005; Miller 2005).<sup>1</sup> The vision of social science as being exclusively focused on culture, in the form of symbols and meanings, or on social structure, in the form of social relations and social networks, has been judged too narrow by a number of analysts. The social science analysis of the economy should be extra sensitive to this type of argument, since it is centered on something very material: the production, distribution and consumption of goods.

In an article from 2009 entitled “The Centrality of Materiality: Economic Theorizing from Xenophon to Home Economics and Beyond”, I argued that economic theory had become increasingly abstract and uninterested in materiality during the course of its development. What had started out as a solid and material type of analysis had by the 20<sup>th</sup> century become a de-materialized and pure type of theory. This development I argued has impoverished economic analysis and made it ignore a number of important issues.

In my article I began by looking at the type of economic analysis that emerged in ancient Greece and which is typically seen as the first form of economic thought in the West. This type of analysis was very concrete and closely integrated objects with social relations. Its focus was on the household, in the form of the big slave-owning estate and known as *oikos*, the word from which the term “economics” comes.

During the period of political economy (roughly the 1700s to the mid-1800s), the market replaced *the household* as the focus of economic analysis, reflecting the economic development especially in England. In the works of the two foremost representatives of this tradition – Adam Smith and Karl Marx – one can find practically no analysis of the household. While Adam Smith as well as Marx were both interested in the physical

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aspects of economic life, the market with its focus on exchange pushed their analyses in an abstract direction. Exchange value, which is abstract, trumped use value, which is concrete, in the new economy of markets and goods.

As “political economy” was replaced by “economics” from the end of the 1900s and onwards, this trend toward an exclusive concern with the market at the expense of the household continued. It was accompanied by an increasing attention to the abstract dimension of economic life. From having been a type of analysis that looked at the production of wealth and material objects, economics had by the mid and late 1900s started to define itself as a perspective - an abstract perspective focused on the mental attitude of fictitious economic actors. In Gary Becker’s well-known formulation, “The combined assumptions of maximizing behavior, market equilibrium, and stable preferences, used relentlessly and unflinchingly, form the heart of the economic approach as I see it” (Becker 1976:5).

I also argued that there did exist one branch of economic theory that went directly counter to this whole development. This was *home economics*, a type of economic analysis that has been universally ignored in histories of economic thought but which deserves a better fate. This type of analysis made its appearance in the late 1800s and lasted for something like half a century (e.g. Stage and Vincenti 1997). It was invented by women, centered on the household, and thoroughly materialistic in nature. The key idea was to better understand how to run a household – how to cook, clean, budget and in general manage an efficient and productive household. By household was primarily meant the modern family, but also larger units such as the community, the nation and humanity were discussed.

Since the article on the centrality of materiality was published in 2009, I have come across a few items that I would want to include in a revised version. One has to do with the first form of economic analysis that was institutionalized in the form of professorships, namely *Kameralwissenschaft* (e.g. Tribe 1988, 1993). Another item has to do with home economics, especially how this type of approach resulted in some major and important advances to modern mainstream economics. Finally, there is also more that can be said about the medieval household, especially its complex relation to property (see especially Ford 2010).

The first professorships were instituted in Germany and Sweden in the first half of the 1700s and were devoted to the presentation of a very different type of knowledge than what we today know as economics. It was a type of knowledge that essentially grew out of the administration of the resources of the feudal lord. “*Kameral*” in *Kameralwissenschaft* comes from the Greek and Latin term *camera*, which originally referred to the palace or apartment of the prince, and more generally to his resources.<sup>2</sup> The cameralists conceptualized the realm of the prince as a giant self-sufficient household and saw as their task to help him practically with the task of ruling his empire. Agriculture and the crafts, not industry, were seen as the main sources of wealth.

One detail may give a quick sense for the difference in approach between these early professors of economics and modern academic economists. The very first professor of economics in Sweden was called Anders Berch; and he was appointed to his chair in Uppsala in 1741. He had been chosen by the Estates in Stockholm primarily to learn more about the wealth that existed in Sweden so there would be less need for imports. The purpose of economics was in other words practical. As part of his teachings Berch created a so-called *theatrum oeconomico-mechanicum*, which can be described as a kind of economic museum. It housed Berch’s huge collection of models of agricultural tools, samples of commodities and other things that he wanted his students to become familiar with.

A mention should also be made of the so-called economic societies that appeared around 1750 and lasted for about half a century (e.g. Popplow 2010). These operated very much in the spirit of the cameralists and used a similar vocabulary. Their main task, as they understood it, was to develop practical knowledge about ways in which it was possible to improve agriculture, forestry and animal breeding.

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<sup>2</sup> According to Keith Tribe, cameralism may be defined as “a set of discourses related to the maintenance of land and people [of the prince]” or, more briefly, as “primarily concerned with the administration of a state” (Tribe 1993:19, 1984:266; cf. Tribe 1988). The first three chairs in economics were instituted in Halle (1727), Frankfurt-am-Oder (1729) and Rinteln in Hessen (1730). While related to mercantilism, cameralism advocates direct ownership of various resources by the state and had a different attitude to e.g. trade. See in this context also Swedberg forthcoming a.

While home economics from early on was a practical science, with teaching and practical instruction as its main forms of activity, it also developed an academic and more scientific side. Such sciences as nutrition and public health owe much to home economics. Less known is that two of its advocates also made substantial contribution to mainstream economic theory (Swedberg forthcoming b). Their names are Hazel Kyrk and Margaret Reid, and both were active at one of the major centers of 20<sup>th</sup> century economics, the Department of Economics at the University of Chicago. Hazel Kyrk (1886-1957) contributed to the theory of consumption at a time when all (male) economists were only interested in production (Kyrk 1923). Margaret Reid (1896-1991) pioneered a way of setting a price on work that took place outside the market, in the household (Reid 1934).

In my earlier discussion of home economics, I was also unaware of how babies from orphanages were used for practice in classes to teach the students “mothercraft” or the scientific art of childrearing. These programs were initiated in 1919, spread to some twenty universities and lasted till the 1950s. The children from the orphanages were used for one year in programs of home economics, during which time they had several young girls looking after them. After this year the babies were put up for adoption. The first practice baby that arrived to Cornell in 1919 was named Dicky Domecon – “for domestic economy”, according to Cornell’s online archives of home economics.<sup>1</sup>

### Looking at Materiality from a Different Perspective

In this article I will try to address some other issues that arise from the attempt to introduce materiality into economic analysis. Being a sociologist, my main concern will be economic sociology, but I will try to keep the argument general enough so that it can have a wider application.

What I propose to analyze is how to overcome the disjunction between material objects and mental life or between objects and subjects. While both of these clearly merit a place in the analysis, they also seem hard to unite in one and the same analysis, without doing so at the expense of the other. We do not want a purely materialistic analysis of the economy, nor one in which the mental perspective totally dominates. Is it possible, for

example, to establish some kind of bridge between the two that would allow a two-way traffic to flow between the material and the mental?

One such possible bridge, I suggest, is the notion of *the senses* – the five senses of human beings: touch, taste, sight, smell and hearing.<sup>2</sup> The basic idea would be that the senses mediate between the outer material world and the inner mental world (e.g. Hsu 2008). The senses are also interesting in this context in that they allow us to get away from an overly cognitive type of analysis, centered around the mental construction of reality. While the senses are linked to the mind or the brain, they are also (and first) linked to other organs of the human body.

For a sociologist it is natural to approach this topic of the senses by taking a close look at Georg Simmel's essay "Sociology of the Senses" (1907). This is a short and fragmentary text, but it is very suggestive and it directly addresses the issue of the role of the senses in sociological analysis.<sup>3</sup> While famous and often praised, "The Sociology of the Senses" has inspired little interesting commentary and follow-ups (e.g. Synnott 1993:128).

Simmel starts out by noting that in a science like biology, scientists began by analyzing individual organs such as the stomach, the lungs and so on. Once this had been done, the focus shifted to the micro-level and the cell, which could be researched with the help of the microscope. This is where the real progress was made and the secrets of life unlocked. Similarly in sociology, Simmel goes on, it is time to shift away from just analyzing large social structures, such as the state, the church and the family, and to focus on the micro-level, where the real secrets of social life are to be found.

It is at this level that the senses operate; and they influence the way that social interaction takes place. Simmel refers at this point to what he calls "mutual sensory perception and influence" (Simmel 1997:110). He also introduces the metaphor of the bridge; and he suggests that the senses allow us not only to experience something subjectively but also to get to know something objectively (Simmel 1997:110, 119).

While it is typically assumed in sociology that people make use of their senses, Simmel says, their impact is given little thought and typically seen as uniform. This, however, is wrong since each sense has its very own way of influencing social interaction. The eye allows us to connect with somebody else in many different ways;

and a quick, direct link is, for example, created between two people when they look at each other. Sound, in contrast, is not reciprocated; and the ear, as opposed to the eye, cannot open and close. Neither can it be directed as one wants.

Simmel refers to smell as one of the lower senses and notes that its impact is often unconscious. But one can also draw attention to smell, in an attempt to set oneself at the center of attention. “Perfume”, Simmel writes, “does exactly for the nose what jewelry does for the eye....it enlarges the sphere of the individual just as the glitter of gold and jewels” (Simmel 1992:736).

When we smell something, we draw air into our bodies; and this accounts for the very special type of intimacy that we associate with this sense. Smell can repel as well as attract. It blocks interaction so often that Simmel labels its effect “disassociating” (Simmel 1997:119). He does not comment on the remaining two senses, taste and touch.

Simmel ends his article on the sociology of the senses by noting that that the senses have changed over the course of history. People used to have sharper senses and were especially able to experience more at a distance. Today this capacity is lost. On the other hand, the sensitivity of the senses of modern people have increased at a short distance; and Simmel illustrates this statement by referring to the concern in his days with hygiene and cleanliness. Modern people are becoming “not only short-sighted but also short-sensed” (Simmel 1997:119).

Throughout his essay, Simmel uses examples from economic life; and since the economy is also the focus of this paper, what he has to say on this topic is of special interest. The argument that sociology is now ready to move from looking at large social structures to small ones, is for example illustrated with examples from the economy. By moving to the micro-level, we conclude, one may be able to find out what really animates economic life.

One way to go about this, to repeat, is by introducing the senses into the analysis. The understanding of economic life will this way become much more subtle and complex. One can, for example, also go beyond an interest oriented type of analysis. In economic life, as elsewhere in society, people do certain things simply because their social interaction is structured in a certain way by their senses.

Simmel writes, for example, very elegantly about the impact that the sense of sight has on the masses of workers. By being in a factory, and seeing other workers without necessarily being able to talk to them, individual workers come to feel that they are part of the general and abstract category “workers”. In Simmel’s formulation:

The workers in a factory workshop...somehow feel themselves to be a unity. And even if their unity springs from supernatural factors, its character is still partially determined by the fact its essential sense is the eye, that the individuals see each other during the communalizing processes but cannot speak. In this case, the consciousness of unity will have a much more abstract character than if the association also includes spoken communication. (Simmel 1997:117)

In discussing the sense of smell, Simmel emphasizes its asocial character or rather, how it succeeds in establishing boundaries between people. Workers and middleclass people often do not get along; and one reason for this is the unconscious impact that the smell of manual workers has on the sensitive noses of the middle class. The so-called social question, Simmel jokes, is also a nasal question (*eine Nasenfrage*; Simmel 1997:117).

### The Economic Sociology of the Senses

Simmel’s discussion of economic topics in “Sociology of the Senses” is inspiring, especially his argument that the analysis of economic life would come alive if proper attention was paid to the senses. One can read his argument on this point as an important suggestion for how economic sociology (or economic analysis more generally) may want to proceed. Exactly where we would end up if we tried to develop an economic sociology of the senses, is not obvious. And it is precisely this quality, of course, that makes it interesting to pursue Simmel’s ideas.

Once we have reformulated what Simmel says in terms of a distinct project to be explored, we notice that it has some resemblance to ideas that we can find in existing approaches to economic sociology. While the embeddedness approach of Granovetter, for example, would seem to have few points in common with an economic sociology of the senses, a moment’s reflection will show that Granovetter’s approach and Simmel’s

project with the senses are not so different (Granovetter 1985). Both focus squarely on social interaction; and there is no reason to believe that the networks approach of Granovetter cannot be improved if attention is paid to the senses. What impact, for example, do the senses have on strong/weak ties, say in the work place? And what about their impact on ties in the labor market?

There is also the Marxian approach in economic sociology. It is not uncommon that modern sociologists ignore the fact that Marx was a materialist through and through. Marx may have said that capital expresses a social relation, but his approach to capitalism was materialistic. And in his early work, such as *The German Ideology*, Marx presents the material point of departure for his theory in a very clear way:

[We] must begin by stating that the first proposition of all human existence and therefore of all history, namely that men must be in a position to live in order to be able to ‘make history’. But life involves before everything else eating and drinking, a habitation, clothing and many other things. The first historical act is, therefore, the production of material life itself. This is indeed a historical act, a fundamental condition of all history, which today, as thousands of years ago, must be accompanied every day and every hour merely in order to sustain human life. (Marx 1947:48).

Does Marx also address the issue of the senses? Yes, and in doing so he adds an important dimension to an economic sociology of the senses. Again, it is especially in his early work that Marx mentions the senses. In *The Economic and Philosophical Manuscripts of 1844*, he says that “man is affirmed in the objective world not only in the act of thinking but with *all* his senses” (Marx 1964: 140; cf. Synnott 1991). Marx also notes that “the *forming* of the five senses is a labor of the entire history of the world down to the present” (Marx 1964:141).

Marx’s main contribution in our context may well be the way that he emphasizes the historical dimension of the senses. We know, for example, through his critique of Feuerbach, that Marx was critical of the naturalistic or unhistorical approach to materialism. We also know – and this represents another valuable insight – that for Marx history was very much centered around work and the ensuing class struggle. In *Capital*

he says that human beings always have to work, regardless of what kind of society they live in (Marx 1990:133). Translated into the project of an economic sociology of the senses, we can say that Marx directs us to explore the way in which the senses have developed and changed over the centuries, as a result of the work that people do. Different jobs make different demands on the senses.

Max Weber was interested in the way that the human body fared in the factories and in the field, as evidenced by his early studies of agricultural workers East of Elbe and his study of “the psychophysics of labor” (Weber 1980, 1988). He also touches on the sense of hearing in his sociology of music (Weber 1958a). But apart from this, Weber has very little to say about the individual senses including their role in economic life. It is nonetheless true that the senses play a role in the way that people orient themselves to one another; and it is precisely “the orientation to someone else’s behavior” that famously turns “action” into “social action” in Weber’s definition of sociology. The same obviously goes for “social economic action”; and attention to the senses should in other words be able to improve also the Weberian economic sociology.

Is this the case as well for the type of economic sociology that we can find in the work of Karl Polanyi? I would say yes. It is true that Polanyi does not pay any attention to the role of the senses in economic life. But even if this constitute a weakness in his work, it should be added that Polanyi’s general approach to economic analysis – his so-called substantivist approach – is very materialistic in nature and can easily be improved by taking the senses into account (Polanyi 1957:243-50, 1977:19-34).

There is also the fact that the substantivist approach of Polanyi can add to the general project of an economic sociology of the senses through its key argument that economic thought should be focused on the need of human beings to survive. This is at the very heart of the substantivist approach; and it reminds us that the senses are not all there is to materiality and the body. The senses are intimately linked to the various organs of the body and their functions; and also these latter must to some extent be analyzed and incorporated into the analysis.

A mention should also be made of the recent efforts by Bruno Latour and others to shake up the social sciences by re-introducing the concept of materiality (e.g. Latour 1991, 1993, 2005, 2007). They have done so in many ways, even if neither Latour nor

Callon discuss the role of the senses. Objects are perceived and interacted with, even if it is somewhat unclear exactly how this is done.

Nonetheless, several of the contributions of Latour et al are relevant to an economic sociology of the senses (e.g. Latour and Lépinay 2009, Callon 1998, Çalışkan and Michel Callon. 2009). This is, for example, the case with the attempt to introduce objects into networks analysis, so-called Actor-Network Theory (ANT). The same goes for Latour's concept of *collective*, which refers to a collectivity that includes not only actors but also objects, and which he wants to replace *society* (e.g. Latour 2005:74-5). Another concept that belongs to the same family is Callon's *prosthesis*, which denotes a situation in which an actor and an object are closely fused together, like a handicapped person and his/her wheelchair (Callon 2008:42-5).

If we agree that it would may make sense from a theoretical perspective to include the senses in the analysis of the economy, what about their practical economic role? Do the senses play a central or a peripheral role in the modern profit-oriented economy? While it is hard to provide exact figures, it is clear that several of the major industries in today's economy produce merchandise that directly appeal to one or several of the senses. The television and the movie industries, for example, are oriented to the senses of sight and sound. The music industry is oriented exclusively to the ear, while the production of eyeglasses and the optics industry focus on the eye. The food, beverage and restaurant industries all involve smell, taste and sight. Perfumes and products such as deodorants and air fresheners are mainly oriented to the nose. Touch is a complex sense, involving the skin and the hand, and plays an important role in the furniture industry and the clothing industry. Many other industries are also directly oriented to the senses of the consumers.

The idea that one can increase sales by consciously targeting the senses seems to have emerged in the United States in the 1930s (e.g. Smith 2007:127, Gilbert 2008:171). Around this time that it was, for example, realized that one could "sell by smell". According to a trade journal for supermarkets in 1938, "there are only five ways in which a consumer can possibly be responsive to any selling appeal, namely through the senses of seeing, hearing, touching, tasting and smelling" (Smith 2007:127). At around the same

time one could read in *The Management Review* that “the odor engineer is joining the color engineer as a consultant to the sales manager” (Gilbert 2007:171).

But even if ideas of this type were around well before World War II, it was after the war that the consumer revolution really took off in the United States and that the notion of selling by appealing to the senses was put into practise on a mass scale (e.g. Smith 2007:126-28). One area where this happened was in the supermarkets. The light in the stores was now changed to create the illusion of day light. White was used in order to create an atmosphere of cleanliness. But many other colors were also introduced, especially to offset the monotony associated with the Depression and the war years. Since middle-class people want silence, silent cash registers and sound-absorbing floors and ceilings were introduced. And while customers had earlier not been allowed to handle fruits and vegetables, they were now allowed to do so since it was hoped that smelling, touching and squeezing the produce would increase sales.

Since a few years back some marketing experts have also been suggesting that an effective way to counter the inefficiency of ordinary advertisements, would be to appeal to all of the senses of the buyers. One advocate of this approach, marketing star Martin Lindstrom, has taken the idea of what is called sensory branding to new heights through several international bestsellers (e.g. Lindstrom 2005, 2008). As part of the new science of *buy-ology*, Lindstrom has also helped to pioneer the use of neuroscience in marketing. If you want to find out what people “really” feel about some merchandise, he argues, you cannot rely on the old-fashioned methods of focus groups and questionnaires. Instead you need to directly measure the activity of the brain through neuroimaging. People may think that they like/dislike something, but the activity in their brains will tell the real truth.

#### The Individual Senses and the Economy: *Sight - Sound - Smell - Taste - Touch*

The focus on the senses in the analysis of economic life raises a series of interesting theoretical questions, but before addressing these, I want to show that by talking about the senses one is able to draw attention to novel and interesting topics in economic sociology. A quick review of some examples, each involving one of the five senses, will hopefully show this.

Let us begin with *the sense of sight* and use light as the main example. The readers of *Capital* were told more than a century ago how crucial it is for the health of children to be exposed to sunshine (Marx 1990:368). In the famous chapter called “The Working Day”, which is where Marx addresses issues involving the body of the workers, he also notes how unhealthy it is for children to be inside a factories the whole day. “[Capital] steals the time required for the consumption of fresh air and sunshine” (Marx 1990:375-76).

A very important way in which sight affects the economy comes from the simple fact that you need light to work. The whole universe is dark and the sun is the source of light. Since the 16<sup>th</sup> century a few hours could be added to the working day of artisans during the dark season, through candles and oil lamps.<sup>4</sup> There is also the role that fire plays and which has been analyzed by Gaston Bachelard (1964; cf. Bachelard 1962). The family gathered around the fireplace; and it was the task of the father to be in charge of the fire.

Gas light started to be used around 1800 in factories in the industrial districts of England. It was introduced at about the same time as the railroad and it had an equally important impact on the economy. Some time after it had become an integral part of the factories, gas light also began to be used in the cities and in individual homes.

To light up a royal feast in the park of Versailles took some 24,000 candles in the 1700s. This type of royal extravaganza could now be produced at a much cheaper rate inside factories and other work places, thanks to gas. The light of gas was also much more steady than candles; and it could light up huge areas in a much more even way. Most importantly of all, it allowed work to go on during all hours of the day.

But there were also some important drawbacks to gas light. It was very dirty; it sucked oxygen out of the room; and it had such an unpleasant and harsh brightness to it that it was never used in the living rooms of the bourgeoisie. The burning of gas also affected the temperature in the room and made it very uncomfortable. Visitors to the theatre complained of headaches and other discomforts that came with being a few hours in a room where the temperature could oscillate between 60 and 100 degrees Fahrenheit. How the workers, who had to work the whole day in the factories, reacted to these discomforts is not known.

All these negative aspects of gas light made electrical light a welcome replacement in the late 1800s. As opposed to gas, electricity could not explode; and it was initially also seen as having a number of positive medical qualities. Electrical light lit up factories and offices, it also made shop windows and department stores more inviting and exciting.

But electrical light also has some negative sides. While gas light was difficult to put up with because it was “dazzlingly white”, electrical light has “a hard, disembodied, abstract quality” (Schivelbusch 1995:40, 178). As the kind of physical tiredness, which comes with manual labor, started to be replaced by the mental tiredness, which comes with non-manual labor, complaints about the tiring effects of electricity began to be heard (cf. Lilleaas and Widerberg 2001).

Next to sight, *the sense of sound* is historically the most privileged.<sup>5</sup> There exists much knowledge and research about what appeals to the human ear; and this also goes for the economic dimension of sound. Psychologists, for example, have looked at the subliminal impact that music has on people choosing what wine to buy. Over a two-week period, French and German music was played alternatively in the liquor section in a supermarket in England (North, Hargreaves and McKendrick 1999). The result was that French wines was outselling German wine on days when French music was played and *vice versa*. Questionnaires showed that the customers were unaware of what type of music was being played.

The examples can easily be multiplied. Buyers of cars want their automobiles to sound good; and that does not only mean the motor but also the way that a car door sounds when it is closed. The sound should be vaultlike and not tinny (e.g. Lindstrom 2008:56-59). Attempts to make people associate a special sound with a special brand are also common (“sensory branding”). Kellogg’s, for example, has invested much money into creating its very own crunch-sound. Similarly, the opening of Pringles is accompanied by a sound that people associate with freshness. Jingles are also a kind of branding. Most Americans can identify the jingle of Alka-Selzer: “*plop, plop, fizz, fizz – oh, what a relief it is*”.

The history of commercial music of the type that one can hear in elevators, department stores, air ports and so on, is closely related to the history of Muzak LLC.<sup>6</sup>

This firm was created by Army Officer George Owen Squier, the brilliant inventor of an early form of transmitting music directly into people's homes. The commercial exploitation of this idea took place in the 1930s; and inspired by the popular name of Kodak, Squier decided to call his radio box Muzak.

The main type of music produced by Squier's company was very bland and without lyrics. It was thought that if this type of music was played in cycles of fifteen minutes, it would have a subliminal impact on people and increase their productivity. While no scientific support has ever been found for this idea (known as "Status Progression"), it seemed intuitively right to many people; and this type of music was as a result popular for decades.

By the 1980s the type of music that was associated with Muzak had begun to go counter to musical tastes, especially those of young people. This forced a change of strategy; and Muzak now switched from providing bland background music to music that was selected to fit the image of specific companies. The new approach of customizing music is referred to by people at Muzak as audio architecture; and it is described as follows:

Audio architecture involves looking at a client's brand, and then matching music to the attributes of that brand. In its simplest form, you use keywords to define a personality for the brand. You may say it's bright, or energetic, or fun, or classic or something like that. And then you find music with a subtext that reinforces that personality. (Owen 2006:5)

At Armani, for example, the music is chosen to make customers feel hip, chic and cool; while at Ann Taylor, customers want to feel uplifting and positive. Muzak has also recently started to cooperate with a company that specializes in smell, called Scent-Air Technologies. According to the CEO of Scent-Air, "We're Muzak for your nose" (Gilbert 2008:175-76).

Finally, as economic forms of life die away, so do the sounds that accompany them. With the help of modern technology these sounds can be recorded and rescued; and there exist today collections of sounds that have become or are about to become extinct. One such collection in Sweden contains more than 10,000 sounds, including the sounds that accompany old ways of doing the laundry, milking cows manually and sawing

blocks of ice (Bremertz 2008). Smithsonian in Washington D.C. has an enormous collection of sounds, some of which are available for sale on records. It is, for example, possible to buy a record called “Sounds of the Office”, which contains all the sounds that an office worker in 1964 would hear - such as an adding machine, an electric typewriter, the shuffling of papers and so on.

Because of the centrality of food in human life, *the sense of taste* has attracted much attention and also been much researched.<sup>7</sup> The food of our ancestors had a relatively small number of flavours. In ancient Greece and Rome people used only a few spices and were not familiar with such modern staples as coffee, tea, chocolate, tomatoes and lemons. These latter did not enter the West until there was trade with Asia and the Americas.

Pharmacists early began to add flavour to medicine; and chemists would some time later radically change the way that food was flavoured. During the 1800s chemists discovered the capacity to artificially develop a number of tastes, including vanilla (from vanillin) which today is the most popular flavour in the United States (cf. Rain 2004). Much of the food that is consumed today contains artificial flavour. “The consumption of food flavouring may stand out as one of the modern era’s most profound collective acts of submission to illusion” (Khatchadourian 2009:87).

The people who engineer the tastes in the flavouring industry are called flavorists and are often members of the Society of Flavor Chemists. According to flavorists, people tend to be very conservative in their tastes. They are familiar with certain tastes and besides vanilla, citrus flavours are particularly appreciated. There also exist what is known as white spaces in people’s tastes or flavours that people probably would like, if they only could be made to try a new flavour. The taste of Coca-Cola is a well-known example of this. Another is that of Red Bull, an energy drink with a sweetly, medicine-like taste. Its so-called unbalanced taste has become so popular that all energy drinks today must have a similar taste.

Taste can be located to the mouth, more precisely to a number of taste receptors on the tongue. While it is often said that there exist five basic tastes (sweetness, saltiness, sourness, bitterness and umami), the real situation is more complex; and the way that taste is produced is still being researched. It is, for example, still not known which taste receptors

are responsible for sourness and sweetness. There is also the case that the receptors only pick up some taste, say salt, under certain circumstances.<sup>8</sup>

Much research on taste emphasizes its physiological side and underplays the role of social and cultural factors. One interesting study that goes counter to this is a recent work by historian Mary Norton on chocolate and tobacco (Norton 2008). The title of her work is *Sacred Gifts, Profane Pleasures: A History of Tobacco and Chocolate in the Atlantic World*.

In Mesoamerica, before the arrival of the Spanish in the 16<sup>th</sup> century, the use of chocolate was very different from what it is today. It was, to use one of Polanyi's terms, deeply embedded in the religious, political and economic life of the native communities. The seed of cacao was, for example used as currency. Chocolate was consumed in the form of a liquid, which was colored red with the help of a spice. The redness made it look like blood; and liquid chocolate was seen as infused by the divine force of life that came from the gods and that also could be found in human blood. Drinking chocolate was integrated into the ceremonies of the ruling elite, while common people only consumed it under special circumstances.

In one of her chapters Norton describes how chocolate was used in the celebration of Aztec merchants in the early 1600s (Norton 2008:20-35). One occasion for this type of ceremony was when a merchant had become very prosperous, a fact that was given special social and religious recognition. During the first day and night of the ceremony chocolate was consumed in huge quantities together with hallucinogenic mushrooms. The participants soon began to experience a unity with the gods. As part of this unity, and very much the result of the huge quantities of chocolate that was consumed, they also got a taste of the divine and pleasurable life of the gods.

During the second day of the ceremony the women were in charge of the ceremony. Chocolate and dancing now disappeared since they were associated with the males. Chocolate however reappeared at the very end of the festivities, when whatever was left was distributed to whoever wanted it. According to the author, the giving away of chocolate should be interpreted as a form of potlatch, a destruction of wealth that expressed the power and status of the merchant.

*The sense of smell* often interacts closely with the other senses. This phenomenon is common for all of the senses. While people, for example, perceive taste to be located to the mouth, it is more complex than so. It has been shown through blind tests, that coffee without its aroma is experienced as a hot drink with a bitter aftertaste; and Coca Cola as a fizzy and sugary drink.

Another colorful example of sensory interaction involves Apple. In 1998 this company broke the convention that a computer should be beige and introduced a new type of PC, the iMac, that was candy-colored and egg-shaped. The form of the iMac was that of a gum drop, and its colors had according to the company been inspired by the color of candy. Steve Jobs said that he wanted people to “lick them” (Lindstrom 2008:155; cf. Dusselier 2001).

When smell is used for commercial purposes, the idea is often that its impact should be unconscious and make people consume more. It is common that fast food chains pump the smell of bacon and hamburgers into their restaurants; and this smell comes from a laboratory and not the kitchen. Some supermarkets make their sections with bread smell like a bakery. New cars are habitually sprayed so they will smell like “a new car”. Modern Bentleys, where the inside is made of synthetic materials, are for example made to smell like the old models, which used traditional leather and fine woods for decoration.

A good odor engineer can easily deceive the human nose. Add to this a marketing expert and you are in the modern world. Consumers expect, for example, freeze dried coffee to smell like coffee. Since it does not do this by itself, some assistance is needed. When you open a jar of Nescafé, a nice, chemically produced whiff of coffee is immediately released.

People in different countries have different smells that they respond favorably to. Indians, for example, like the smell of sandalwood. Also different generations have different smell preferences. People born before 1930 in the United States like the smell of freshly mown grass and that of horses, while people born after 1930 respond favorably to Play-Doh and Spicy Tarts (Lindstrom 2008:147).

Some modern marketers argue that the impact of smell is wrongly seen as being emotional. In reality smell operates together with cognitive judgments. This is sometimes

referred to as the congruence problem or that a certain smell only goes with a certain type of object. You cannot, for example, sell non-Christmas items with the smell of Christmas (the smell of pine trees). Or as Avery Gilbert, a smell scientist, puts it in *What the Nose Knows*, “the overall lesson is clear: for smell to be effective in marketing, context matters, because people try to intellectually reconcile what they see with what they smell” (Gilbert 2008:175).

The fifth and last sense – *the sense of touch* – is generally considered by scholars as having the lowest status; and it was regarded by Aristotle as being one of the two animal senses (the other is taste). Touch is the sense that we have the least historical information about; and while there exist museums for all the other senses, such as museums of sound and taste, there is (so far) no museum of touch.

The sense of touch is in some ways more complex than the other senses. While each of these are identified with a special organ – sound, with the ear; sight, with the eye; taste, with the mouth; and smell, with the nose – it is not so clear what organ answers to touch. Usually the hand is mentioned, but one could also mention the skin, which is wrapped around the whole body and able to register an amazing amount of phenomena, such as pain, heat, pressure, tingling, caresses and so on. The skin does not only hold nerve endings but also hair follicles, sweat glands, blood vessels and lymph vessels. And it ages, during the course of which it develops wrinkles – which has led to an industry of its own (e.g. Thurman 2010).

While touch has a biological dimension, it also has a social one as the term “untouchable” reminds us of. Some obvious and less obvious economic consequences of the Indian caste system are discussed in Max Weber’s *The Religion of India* (Weber 1958b). Touch plays a role when people shop for clothes as well as for a car. The Coca Cola bottle has a special tactile message for the hand; and so do many of the specially designed objects that we surround us with, from slippers to whatever it is that make our own bed so nice to creep down in after a trip abroad.

In *The Invention of Comfort: Sensibility & Design in Early Modern Britain & Early America*, John Crowley traces the emergence of a phenomenon that involves touch and its commercialization (Crowley 2001). During the 18<sup>th</sup> century the word *comfort* was becoming increasingly used in England and the United States, he also notes. It

complemented the two earlier categories of luxury and necessities; and just as the former was linked to the upper classes and the latter to the lower classes, comfort was linked to the middle classes.

Luxury typically involves high quality and highly prized items. In *The Religion of India* Weber tells us about a vase of jade that it took three generations of members from a family of royal artisans to complete (Weber 1958b:98). And in *The Philosophy of Money* Simmel tells the anecdote of how a prince during the *ancien régime* sent a potential conquest an expensive jewel. When it was returned to him, he had it crushed and poured the remains into the ink that he used to write her a letter (Simmel 1978:248-49).

If the elegant but uncomfortable chair can be seen as a symbol for luxury and the upper classes, the easy chair can be seen as a symbol for comfort and the middle classes. The easy chair, it turns out, had originally been constructed so people who were sick or pregnant could sit without discomfort. They could be found in private chambers and bedrooms, not in living rooms; and they often had place for a chamber pot.

One of the first works that attempts to theorize the love for comfort among the middle classes is *Democracy in America* by Tocqueville. He argues that comfort was part part of the general transition from an aristocratic and elite oriented kind of society to a new, democratic and mass-oriented one:

[In a democracy] it is not a question of building vast palaces, of vanquishing and outwitting nature, of depleting the universe in order better to satiate the passions of a man; it is about adding a few toises [feet] to one's field, planting an orchard, enlarging a residence, making life easier and more comfortable at each instant, preventing inconvenience, and satisfying the least needs without effort and almost without cost. (Tocqueville 2000:509)

But Tocqueville also felt that there was a dark side to the Americans' love for comfort and material objects in the early 1800s. It threatened to slowly undo their concern with the important things in life. "These objects are small, but the soul clings to them: it considers them every day and from very close; in the end they hide the rest of the world from it, and they sometimes come to place themselves between it and God" (Tocqueville 2000:509).

### Going One Step Further in the Analysis

It would be possible to stop at this point and argue that looking at the senses allows us to move ahead a few steps in reintroducing materiality into the analysis of the economy. The five senses, bring human beings into direct contact with the material reality, each in their own distinct manner. This makes it important for economic analysis to know more about the senses and how they operate. Industries that cater to the senses also bring in billions of dollars in revenue each year.

So far so good. But there is also the fact that the senses are not just some kind of mute biological openings to the outside world that channel impressions into our minds, changing these along predictable lines in the process. From the examples in the preceding section, it is clear that something non-biological and social is also involved. When the natives of Mesoamerica tasted chocolate, for example, it not only had a sugary but also a religious flavour, while for modern consumers its taste is simply sweet.<sup>9</sup> Wine used at the celebration of the Eucharist - sacramental or altar wine - tastes different from wine at dinner. When we open a package with Pringles potato chips and hear a sound of freshness, the ear has deliberately been deceived – by someone who wants to sell us something.

While the senses do put us into contact with material reality in a direct way, also society is involved. And it is precisely this that needs to be theorized; and why we cannot stop after having discussed the senses. We need to push on and try to account for the way that the social intervenes in the “biological” structure of the senses and form our experiences.

But exactly how is this to be done? The standard answer to this question in mainstream sociology can be summarized in one formula: the social construction of reality. From this perspective, there is not much of a problem. The actor interprets what his or her senses tell him; and the reason for this is that reality can only be perceived in a social manner. Human beings are social beings; they view the world in a social way – what else can they do?

From this perspective, all social construction comes from inside the actor’s mind. This means that the senses interpret something as social because we as actors assign a

meaning to what we experience through our senses. The whole thing is not so different from the way that we physically see things: we look out at the world, as it were, *through* our eyes. Meaning is assigned by the actor to the object; and the object is in this sense the creation of the actor.

This type of ideas go far back in sociology and were given an influential and popular expression in *The Social Construction of Reality* by Peter Berger and Thomas Luckmann (Berger and Luckman 1967). With a bit of exaggeration one can say that this work popularized the Kantian and Weberian model of sociology. The actors construct the world (Kant) and they do so collectively (Weber). The individual actor views the world through the categories that have been created collectively and is not able to see or reach “reality-in-itself”. Objects are part of this reality-in-itself and are interpreted according to the social categories that actors have been socialized into, and which they project onto the objects.

Given the many important works that have been produced from this perspective, from Weber and onwards, one can say that viewing things from this perspective has been very fruitful. But since the Kantian-Weberian model of sociology also has problems with material objects, which it essentially views as the passive products of social constructions and part of the unknowable reality-in-itself, it is not helpful when one is trying to introduce materiality into social thought.

One does better in this situation to use the ideas that have been developed by Bruno Latour and people working along similar lines. These scholars are well aware of the difficulties that come with approaching reality from a Kantian-Weberian perspective and how this makes it hard to deal with material objects since these are essentially understood as the products of the actor’s mind. According to Latour, “Kant...invented a form of constructivism in which the mind-in-the-vat built everything by itself” (Latour 1999:6). Sociologists, Latour continues, essentially took over the Kantian analysis, adding a new set of categories to the mind: those of the social (e.g. Latour 1999:7).

The response by Latour to the Kantian-Weberian perspective has been to develop an alternative theory, according to which objects and actors coexist with each other and influence as well as interact with each other. The key argument is that the social scientist

must extend the analysis to *both* actors *and* objects, and that these two mix with each other in various ways that need to be theorized in new ways.

What Latour et al have *not* been able to do, however, is to come up with an epistemology to replace that of Kant. This is a very difficult task; and Latour, Callon and others have made little progress with this problem. While they are aware of the problem, they have not been able to propose an alternative epistemology.

There does, however, exist a very interesting and original approach to precisely this type of problematic, which has not been part of the discussion of materiality but which deserves a hearing. This is the work by philosopher Charles Peirce (1839-1914). Peirce is generally seen as the foremost American philosopher, and especially his theory of signs is of interest in the context of this paper (e.g. Peirce 1991, 1992-98).

In the next few pages I will present Peirce's ideas and try to show how they can be used to advance the analysis of materiality beyond the point to which Latour et al have taken it. Peirce's theory of signs, I will argue, is helpful in making the analysis of the senses more sophisticated since it allows us to introduce one more element besides material reality and the subjectivity of the actor. This is: *an independent layer of signs*. This layer allows the social element to enter the analysis. It also operates as a mediator between material reality and the subjectivity of the actor.

Peirce essentially saw signs as the key to advancing a number of sciences, including sociology (see e.g. Swedberg forthcoming c). He described signs as existing independently of the individual and as being social in nature, a bit like Durkheim's collective representations. Signs (or collective representations) exist, in other words, somewhere in the space between, on the one hand, material reality and, on the other hand, the mind.<sup>10</sup>

But there exists a crucial difference between Durkheim, who was a Kantian in his epistemology, and Peirce, who developed his own epistemology; and it is precisely this difference that makes it preferable to follow Peirce rather than Durkheim in this discussion of the senses. This is that according to Peirce, it is objects that affect people (through signs), not the other way around. This point is crucial and therefore deserves to be repeated: Peirce argues that it is the objects that determine the signs, which in their turn determine the impression that the signs make on people. As I will try to show, this

perspective provides a more realistic view of the role of the senses than the Kantian-Weberian perspective.

Peirce is little known in modern sociology and I will quickly describe how he viewed signs. This is necessary in order to show how his ideas can be useful for the purposes of this paper, which is to explain how the senses both allow us to better take materiality into account and how we can do so theoretically.

Two important ideas that inform Peirce's semiotics are the following: a sign has a triadic structure; and there exist three types of signs. It is also important to stress that Peirce believed very strongly in the existence of both an objective reality and a subjective mind; and that he was deeply concerned with how to link the two. His semiotics was part of the attempt to bridge the objective reality and the subjective mind

Everything can be a sign, according to Peirce. That means single events, impressions, words, symbols, thinking and the human self are all signs. The world consists of signs; signs are everywhere and they come in the most various combinations. While someone like Saussure limited his theory of signs to words, this is not the case with Peirce.

The following definition of a sign is provided by Peirce: *a sign is something that determines something else – its so-called interpretant – to refer to an object*. An interpretant is the receiving mind, so to speak; and the three parts of the sign are: (1) the sign itself, (2) its object, and (3) its interpretant. A figure may be helpful to illustrate Peirce's view (see Fig. 1).

/Fig. 1 about here/<sup>3</sup>

What the figure shows is how someone looking at, say, a flower, perceives it as a sign – the sign in this case being the concept of what we term “flower”. The key point here is that while the person thinks that he or she sees a flower, in reality he or she is seeing something else, and this something is interpreted as a “flower”. To the individual, the transition of some patterns of colour into an identifiable something called a “flower” is instantaneous and imperceptible; he or she just believes that it is a flower. In the mind of the actor, two elements have merged into one: the object and the sign.

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<sup>3</sup> For Fig. 1, see the end of the paper.

The mind literally jumps to the conclusion that it is a flower that it sees, in about the same way that the mind reaches all of its conclusions, according to Peirce. In this sense there is little difference between getting an idea and having a sense impression. Or to cite an important passage from one of Peirce's writings:

Looking out of my window this lovely spring morning I see an azalea in full bloom. No, no! I do not see that; though that is the only way I can describe what I see. That is a proposition, a sentence, a fact; but what I perceive is not proposition, sentence, fact, but only an image, which I make intelligible in part by means of a statement of fact. This statement is abstract; but what I see is concrete. I perform an abduction when I do so much as express in a sentence anything I see. The truth is that the whole fabric of our knowledge is one matted felt of pure hypothesis that is confirmed and refined by induction. Not the smallest advance in knowledge can be made beyond the stage of vacant staring, without making an abduction at every step. (Peirce 1901)

The idea that there is an instant fusion of impression and sign in the mind of the actor represents the first important insight of Peirce.<sup>11</sup> The idea that it is the object that determines that something happens in the mind of the actor is the second. Note that according to Kantian sociology it is the subject (roughly the interpretant, in Peirce's terminology) that assigns meaning to the object, while in Peirce's work it is exactly the other way around. Again, a figure may clarify Peirce's full argument about the way that the object determines the sign, which determines the interpretant (see Fig. 2).

/Fig. 2 about here/<sup>4</sup>

How can this argument be justified? Is it not the human actor who socially constructs what, say, an azalea is? The answer is yes – but only if you conduct the analysis from a certain perspective, viz. that of collective creation in some distant past. In the historical past it was at some point decided that this type of flower should be called “azalea”, and ever after this event, children have been taught that this is the case by their family; they have picked it up from other people and so on (see e.g. Elias 2006).

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<sup>4</sup> For Fig. 2, see the end of the paper.

But from the perspective of the actual existing event and the actual existing individual, it is when we suddenly see a certain flower that the concept of “azalea” is triggered or determined in our mind. We do not create this concept; it is already in our mind or accessible to us in some sign. When an azalea is brought into our field of vision, it triggers – it *determines* – the sign of “azalea” in our mind.<sup>12</sup>

Peirce’s idea of the triadic structure of the sign can also help us to better understand the role of the senses in relation to signs. According to Peirce, “a sign...is a vehicle conveying into the mind something from without” (Peirce 1960:171). Just like an object determines the sign, which in its turn determines an interpretant, we may argue that an object influences or “determines” one of the human senses, and that this sign then has an impact on the mind of the individual in question. Or to summarize our argument, inspired by Peirce, in one single sentence: *what we feel to be the impression of one of our senses (“I hear X”, “I taste Y”) is in reality the merger of the sense impression with the sign* (see Fig 3).

/Fig. 3 about here/<sup>5</sup>

Let us now turn to Peirce’s typology of signs to see how it can assist us in the analysis of the senses and their role in economic affairs. To repeat, everything is a sign according to Peirce: events, emotions, objects, thoughts and more. He nonetheless also states that there exist three basic types of signs. These are called index, icon and symbol. Peirce made this typology more elaborate as his life progressed; it nonetheless remains fundamental and is also useful in this context.

The index is defined by the fact that it is directly linked to reality. One example is the weather cock that shows the impact as well as the direction of the wind. An icon is a sign that is defined by being similar to reality. The picture in a photograph is similar to what the photograph portrays. A symbol expresses the way that people by habit view something. Examples include words and books.

According to Peirce, most of what happens is understood as complexes of signs; and individual events and objects consist, for example, of many signs at the same time. A photograph, for example, is an icon, in that it portrays and has a likeness to something.

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<sup>5</sup> For Fig. 3, see the end of the paper.

But it is also an index, in that a photograph is a film with a layer of chemicals that react to the way that it is exposed to light. If the photograph is of a flag, it is finally also a symbol. And as we look at the photograph, we may first see one thing, and gradually something else as we contemplate it. Again, a complex or new combinations of signs are involved (see Fig. 4).

/Fig. 4 about here/<sup>6</sup>

Peirce's theory of signs provides us with a vantage point from which to analyze the examples cited earlier in the discussion of the role of the senses in the economy. What has been called impressions of the senses, turns out to be something that is much more complex in reality and involve different types of signs.

Take the example of chocolate. The tongue simply tastes sweetness, and this impression goes very well with a naturalistic approach to the senses. But if we were tasting chocolate in early Mesoamerica, we would have felt more than sweetness; we would have felt something that was sweet *and* sacred. What takes place when the chocolate hits the tongue is an instantaneous process that involves several signs at the same time. The example with chocolate in Mesoamerica also shows that the same thing happens when we eat chocolate today – it just feels so natural that we are only able to think of it in terms of “chocolate”.

Peirce also allows us to better understand why marketing specialists these days are so interested in the senses. During the course of the 20<sup>th</sup> century people have become increasingly resistant to the influence of ads in the form of classical billboards and ads in the newspapers. This is why it has become extra important to try to target the less conscious senses, such as smell, touch and hearing.

Certain signs or complexes of signs exist in people's mind, reflecting the society they live in, but since these signs may not be so easy to consciously articulate, they are relatively easy to influence. Both French wine and French music come from France, even if we may not necessarily think about this fact. But at some level the mind has linked the two through the sign of “France”; and when French music is played in the supermarket, we apparently make the link – and buy French wine.

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<sup>6</sup> For Fig. 4, see the end of the paper.

Note that a marketing expert like Martin Lindstrom, who works with neuroimaging, has reintroduced a naturalistic perspective into the analyses of the senses. He focuses on objective images; and argues that, by doing so, he is able to decide objectively what works and what does not work in advertising. Reality, however, is more complex than so; and that the brains of people will produce different images depending on whatever experiences the same people have experienced, should not be difficult to show. More fundamentally, by proceeding in a naturalistic fashion, Lindstrom is using neuroimaging in a less sophisticated way than he needs to.

Also the constructivist sociologist can learn from Peirce's theory of signs. He or she has to look for the explanation far away from the individual actor, in order to get a handle on what is happening. The constructivist sociologist also has to present chains of explanations that are very long and do not meet the demands of Ockham's razor. When I taste something and think that it tastes like "X", the constructivist sociologist must in principle abstract from the concrete situation and go back to the way that the actor was socialized or encountered "X" for the first time. The Peircian sociologist, in contrast, can focus directly on the individual's experience at the moment, since signs carry the meaning in question and are immediately available.

In order to present Peirce's full argument, it should finally also be mentioned that he was aware of the fact that the actor has to somehow tap into the collective meaning of a sign before he or she can identify, say, a special flower as an "azalea". In his terminology, the interpretant must have what he called "collateral experience" to be able to do so. "By collateral observation", Peirce specified, "I mean previous acquaintance with what the Sign denotes" (Peirce 1998:494). Still, this insight was in Peirce's mind subordinate to the more important idea that it is the object that determines the sign and the interpretant in the actual unfolding of experience and life. Collateral or what we would call "social" experience enters the individual actor's mind through the sign – which determines the individual actor's mind (see Fig. 5). To some extent one can say that both perspectives are useful: that of Peirce and that of the social constructivists.

/Fig. 5 about here/<sup>7</sup>

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<sup>7</sup> For Fig. 5, see the end of the paper.

### Concluding Remarks

By looking at the senses, this paper has argued, one can approach materiality in a way that allows the analysis of materiality to become more nuanced. Much of material reality is perceived through the senses; and these consequently affect what is meant by materiality. While the senses of sight, sound and taste have historically been favored, our knowledge of what happens when we smell and especially when we touch is much less advanced.

But the senses, I have also argued, do not just transport objective reality straight into the mind of the actor; and outside reality is not transformed in the process in some universal way, that is unique to each of the five senses. The social is somehow also present; and it is present in such an integral way that we cannot ourselves distinguish between what the senses are telling us and what is social. The two have melded into some definite signification or sign; and that is why Peirce's ideas are helpful. The mind, as Peirce's example of the azalea illustrates, does not see a mixture of yellow, blue and green that makes up this flower, but only the flower – the "azalea". The sign is what establishes the link to the social; and signs also mediate between the inside and the outside, since they exist inside as well as outside of ourselves.

The Kantian-Weberian sociologist explains the social dimension by saying that the individual actor constructs and assigns meaning to the object, and that this is part of the social construction of reality. The meaning enters the mind through socialization in some form, say through socialization, via one's peers, the educational system and so on; and it is then so-to-speak projected onto the object, a bit like a photograph can be projected onto the screen.

The Peircian sociologist disagrees and refers to the systems of signs that exist outside of the actor but which he or she can access. These signs carry the meaning that the individual actor at some point learned to understand. As the individual actor encounters some object, he or she is affected and impacted by these objects – and in the very moment of impact the object is perceived through a sign. The causality goes from the object to the sign to the interpretant, in Peirce's terminology. And this is a process that takes place so quickly that the person equates the object with the sign without being aware of it.

The core argument of this paper, to sum up, is that Peirce's way of looking at signs can be used to theorize the way that the senses operate when they mediate between the world and ourselves; and that one can, in this way, also advance the way that materiality can be incorporated into the analysis of the economy. We perceive the world through the senses – and through signs. And it is the task of the sociologist (a bit like the poet) to realize this and to break the two up.<sup>13</sup>

It is finally also my view that the applicability of Peirce's theory may extend beyond analyzing the role of the senses in the economy; and that it could very well be helpful to use some form of Peirce's semiotics to analyze economic life and economic phenomena in general. Technology can be understood as a set of signs and so can money; and cooperation in work can only take place through communication via signs. In economic life as well as in life in general, perhaps everything can be interpreted in terms of signs.

Note also that one of the oddities of modern economic theory is that it ignores the fact that human beings communicate with words and use signs. *Homo economicus* lacks not only vocal cords and ears but also the parts of the brain that make it possible to understand what other people say.<sup>14</sup> Peirce's theory of signs, with its very broad notion of what constitutes a sign, may in my view be well suited for advancing the analysis of economic life in general. It could do this through two of its fundamental theses. One of these I have already mentioned, viz. that signs have a triadic structure in which the sign determines the interpretant. The other is the idea that the individual is linked through the signs to the human community.

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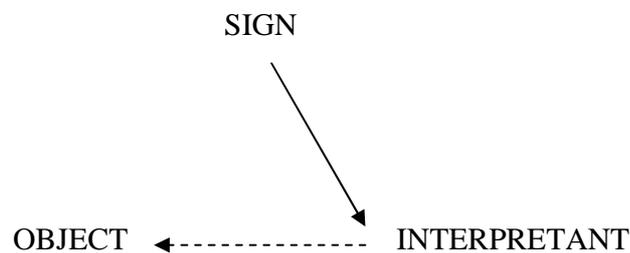
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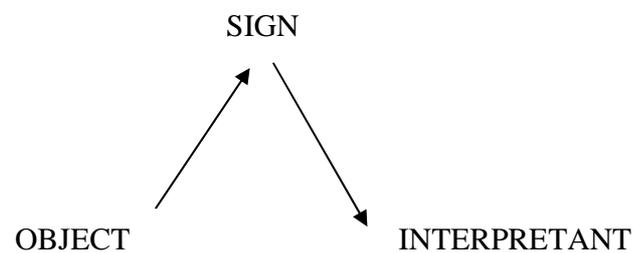
Fig. 1. Peirce's Definition of a Sign in The Baldwin *Dictionary of Philosophy and Psychology* (1902)



*Comment:* In 1902 Peirce famously defined a sign in James Baldwin's *Dictionary of Philosophy and Psychology* as follows: "[A sign is] anything which determines something else (its interpretant) to refer to an object" (Peirce 1991:239). The full line means "determines"; the broken line "refers to". The reader should be aware that Peirce himself did not construct any figures to illustrate his theory of signs; and that the figures in this paper should only to be seen as imperfect illustrations of Peirce's arguments.

*Source:* Peirce, "Sign", pp. 239-40 in *Peirce on Signs*.

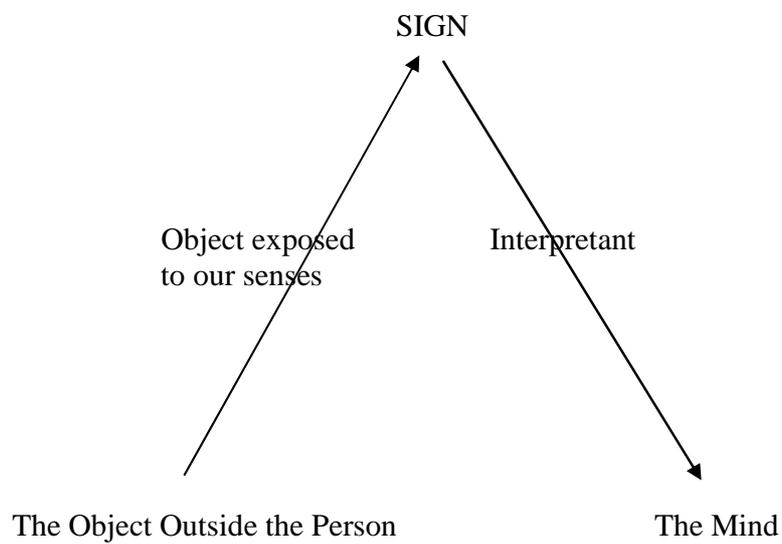
Fig. 2. Peirce's Full Definition of a Sign in a Letter to Lady Welby (1908)



*Comment:* In a well-known letter to Lady Welby from December 23, 1908, Peirce wrote, “I define a Sign as anything which is so determined by anything else, called its Object, and so determines an effect upon a person, which effect I call its Interpretant, that the latter is thereby mediately determined by the former”.

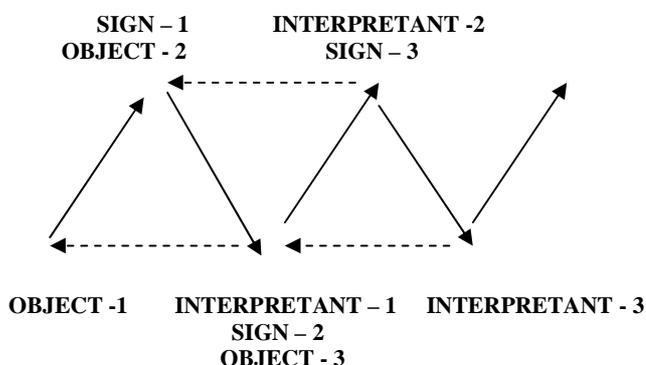
*Source:* Charles Peirce, *Letters to Lady Welby* (New Haven: Whitlock's, Inc., 1953), p. 29.

Fig. 3. The Role of the Senses from a Peircian Perspective



*Comment:* The figure attempts to illustrate Peirce's statement that the sign brings information from the objective world into the senses. It does so by arguing that this takes place through the senses; and that the sign that is involved contains some statement related to the sense. An actor will, say, bite into a strawberry (=object) and think "this tastes like strawberry" (=the object expressed to our senses, melded into a sign).

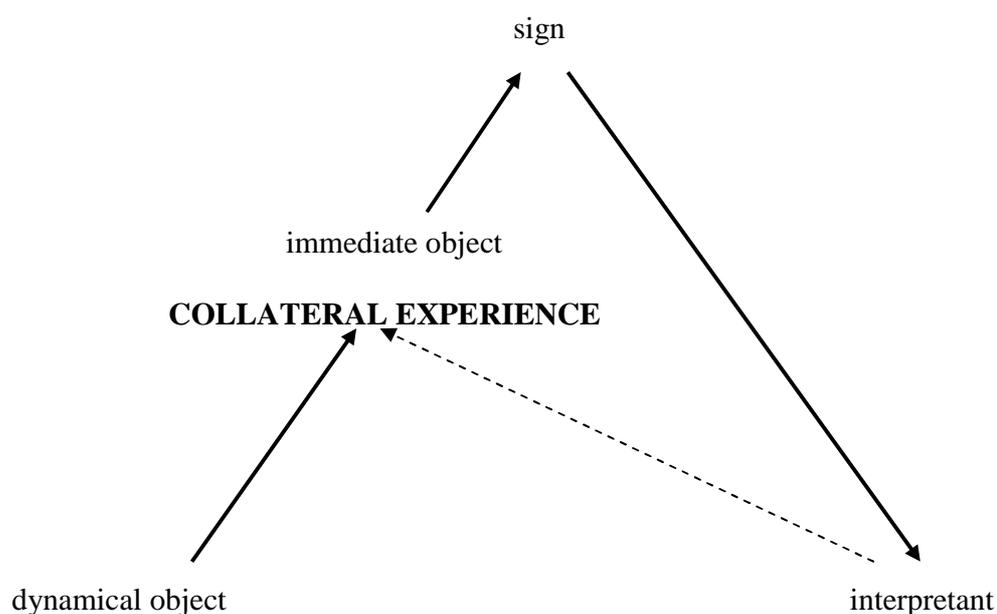
Fig. 4. Peirce on Successive Signs



*Comment:* The full line means “determines”; the broken line “refers to”. Peirce argues that signs continue to grow in the mind of a person till they are stopped by a habit or otherwise by some incapacity to proceed further in his or her thinking. We suddenly see, for example, an azalea; we stop to contemplate it; we admire its beauty; and we start to think about the beauty of nature. In Peircian language part of this process can be expressed as follows: an interpretant becomes in its turn a sign, that refers to an object (the former sign) and which has its own interpretant and so on. Or to cite Peirce himself: “[A] **Sign** [is] anything which determines something else (its *interpretant*) to refer to an object to which itself refers (its *object*) in the same way, the interpretant becoming in turn a sign and so on *ad infinitum*” (Peirce 1991:239).

*Source:* Peirce, “Sign”, pp. 239-40 in *Peirce on Signs* (Chapel Hill: University of North Carolina Press, 1991).

Fig. 5. The Role of Collateral Experience in Peirce's Theory of the Sign



*Comment:* The figure illustrates how Peirce later in life and especially in his letters from 1909 to William James, theorized the fact that the individual actor can only understand a sign if he or she also has somehow learned what the sign stands through what he called collateral experience. It is not exactly clear how Peirce wanted to introduce collateral experience into his triadic scheme of the sign. In this figure I have suggested one way of doing so, which I think might be close to what Peirce had in mind. One can also argue that at this point it is possible to join Peirce's theory of the sign with Durkheim's theory of collective representations. In presenting his argument, Peirce distinguishes between two types objects: dynamical objects and immediate objects. By the dynamical object he means what we might call the actual object in all its infinite variety; and by the immediate object "the Object as represented in the sign" (Peirce 1998:498). The full line means "determines"; the broken line "refers to".

Source: Peirce, *The Essential Peirce* (Bloomington: Indiana University Press 1998), Vol. 2, pp. 493-97.

<sup>1</sup> The use of practice babies has been tracked by transmedia producer Nonny de la Peña who since 2009 has an ongoing film project on this subject, “Truth and Consequence: The Practice Babies”. The practice came to more general knowledge in the spring of 2010 when one such baby was portrayed in a novel – *The Irresistible Henry House* by Lisa Grunwald (see also Grunwald 2010).

<sup>2</sup> The idea that human beings have five senses has its origin in Greek thought and can most importantly be found in Aristotle (2006). Some Greek thinkers, including Socrates and Aristotle, felt that there also exists an additional sense that is hard to pin down and name. They referred to this as *aesthēsis* or a sense that is common to the other senses or/and the sense of feeling alive. See on this point Daniel Heller-Roazen’s study *The Inner Touch: Archaeology of a Sensation* (2009). It is today often argued that the number as well as the definitions of the senses is arbitrary. People’s experience of pain and their capacity to navigate in space are among the candidates for additional senses. My own view is that one could perhaps talk of human beings being as endowed with a *social sense*. One early advance in this direction, from my perspective, would be the concept of “social skin” as developed in Noelle-Neumann’s *The Spiral of Silence* (Noelle-Neumann 1993). For the senses in general, see e.g. Ackerman 1990, Jütte 2005, Smith 2007.

<sup>3</sup> The section on the sociology of the senses in *Soziologie* (1908) is a few pages longer than the original 1907 version (Simmel 1992, 1997). Most of the new material, however, is devoted to a discussion of the relationship of sensuality to physical closeness.

<sup>4</sup> This section draws on *Disenchanted Night: The Industrialization of Light in the Nineteenth Century* by Wolfgang Schivelbusch (1995).

<sup>5</sup> Ian Hacking questions the idea that the hierarchy of the senses has not always been the same. “Empirically minded philosophers think of vision as the lord of the senses, a superiority which is part of the very nature of man. Lucien Febvre contends that, on the basis of what is left us of emerging thirteenth-century French, those who spoke the language speak as if they lived in an auditory, olfactory universe in which objects of sight have hardly come into consciousness” (Harding 1975:32).

<sup>6</sup> This section draws on “The Soundtrack of Your Life: Muzak in the Realm of Retail Theatre” by David Owen (2006). See also Lanza (2004). For an interesting analysis of an early use of music to sell government bonds, see *Mass Persuasion* by Robert K. Merton from 1946 (Merton 1973).

<sup>7</sup> This section draws on “The Taste Makers: The Secret World of the Flavor Factory” by Raffi Khatchadourian (2009).

<sup>8</sup> This can be illustrated with salt – which is part of whiskey, cheese and many other items we do not associate with salt. When used in processed food, salt also prevents the taste of being warmed over or tasting like cardboard (e.g. Moss 2010).

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<sup>9</sup> Or, to choose another comparison (if the reader objects that the “chocolate” in the two cases differ): Spanish soldiers in the 1500s who tasted chocolate in Mesoamerica found it thoroughly disgusting - “more a drink for pigs, than for humanity” (Rain 2004:41).

<sup>10</sup> Durkheim as well as Peirce emphasize that collective representations or signs involve memory. Peirce writes at one point, “of course with memory would have to go all opinions about everything not at this moment before our senses” (Peirce 1957:241; cf. Durkheim 2010). For the sake of simplicity, I will not develop this argument in this article.

<sup>11</sup> See similarly the following remark by Wittgenstein in *Philosophical Investigations*: “It would have made as little sense for me to say ‘Now I am seeing it as...’ as to say at the sight of a knife and fork ‘Now I am seeing this as a knife and fork’. This expression would not be understood. – Any more than: ‘Now it’s a fork’ or ‘It can be a fork too’” (Wittgenstein 1968:195e). In other words, even if the subject can train herself/himself to distinguish between the colors and the notion of the azaleah, the situation remains the same.

<sup>12</sup> There exists a debate in the secondary literature on Peirce on how to interpret what Peirce means by the term “determine” in his theory of signs (see e.g. Short 2007:164-68). While my own view sharply differs from that of the consensus, in that I believe Peirce meant that “determine” means “to cause”, his argument that *the object is the actor* (which is at issue here) is not challenged. Most discussions of Peirce’s doctrine of signs seem to be more interested in presenting Peirce’s ideas than to determine if these are useful for analytical purposes – and show why this is the case.

<sup>13</sup> Rimbaud viewed the derangement or disordering of the senses as crucial for the poet. In a letter from 1871 he writes: “The poet makes himself a *seer* by a long, prodigious and rational *disordering of all the senses (dérèglement de tous les sens)*... this way he reaches the unknown” (Kwasny 2004:147).

<sup>14</sup> There exists a so-called signaling theory in modern economics, which originates with the work of Michael Spence. The focus in this type of analysis is on intentional signaling and asymmetric information, not on the broad type of signs that exist independently of the individual as in Peirce’s work. For an overview of signaling theory, see Gambetta 2009.