

“Visual Presentations of Social Matters” and Later Changes in Polanyi’s Social Theory

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Keywords: Polanyi, Keynes, Hayek, Diagrams, Economics, Sociology, Animated Film, Supply, Demand, Model, Fluid Dynamics

ABSTRACT

In a 1936 lecture, Polanyi claimed too much for the efficacy of visual presentations of relations among economic things. His 1945 book, Full Employment and Free Trade was the last of his major publications in which he used many diagrams to illustrate his points. In that book, he stated his objective of trying to popularize the economic theory of John Maynard Keynes. But after 1945, he seems to have stopped trying to help people understand Keynesian theory, and in Personal Knowledge, his only references to Keynes are criticisms of some of his ideas about probability and statistics. He later moved away from writing about the economy as an isolated system, towards treating it as just one of the four major aspects of society.

Michael Polanyi delivered his lecture, “Visual Presentation of Social Matters,” in June of 1936, three years before the beginning of World War Two, when the world was still in the midst of the Great Depression. He had always been interested in social matters, but this lecture took place early in the stage of his career when he was beginning to devote progressively more of his time and energy to social matters. It was still twelve years before the University of Manchester would change his title from Professor of Chemistry to Professor of Social Studies (Scott and Moleski, 2005, 204; hereafter *MPSP*) and twenty-two years before the publication of *Personal Knowledge*. Between 1936 and 1958, Polanyi’s faith in the redemptive power of the discovery and widespread dissemination of the truth about social matters continued to be a stable foundation for his thinking about social matters. In this essay, however, I focus on several changes in what he said about social things, especially after 1945, the year of publication of *Full Employment and Free Trade* (hereafter, *FEFT*). First, he stopped trying to present social matters visually, and stopped advocating such visual presentations. Second, he stopped emphasizing a “fluid dynamics” model of the economic system. Third, he stopped trying to popularize Keynesian economic theory.

Visual Presentations

In his lecture of 1936, he claimed a great deal for the visual presentation of economic matters:

It seems certain that when verbal accounts of economic matters are substituted by a visual presentation based on moving diagrams the economic fallacies now ruling the popular mind will be eliminated To sum up: the discovery of a symbolism which I believe will consist in moving picture writing, capable of representing economic life will release us from fallacies and exasperation, and will create economic consciousness (“Visual Presentations,” p. 21 in this issue of *TAD*).

In his later writings, he did not make these kinds of claims, and after *FEFT*, he stopped creating visual presentations of social matters. There are no diagrams in *Science, Faith and Society* (1946), *Personal Knowledge* (1958), *The Tacit Dimension* (1966), or *Knowing and Being* (1969). There are several diagrams in *Meaning* (1975, 70-88), but these focus on the relations between subsidiary and focal awareness in the creating various types of meaning..

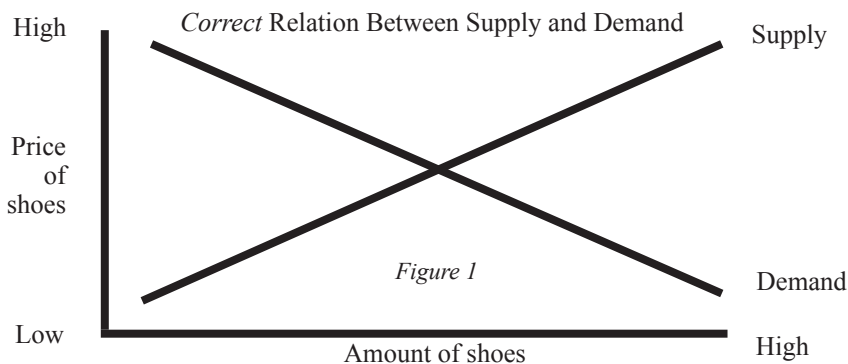
Why did Polanyi stop creating visual presentations of social matters? One reason was probably that his film project did not eliminate economic fallacies from “the popular mind.” Scott and Moleski (*MPSP* 179) say, “The film project may have failed, in part, because it told a peacetime story to countries at war.” Another reason might have been his realization that his film was not effective without a verbal commentary. In 1943, he wrote to his sister Mausi, “Don’t worry too much about the film. It is getting clear that only an expert and enthusiastic teacher can make proper use of it” (*MPSP* 179). In 1936, he had hoped for much more.

In his 1936 lecture, he said that the *substitution* of a visual presentation for a verbal presentation would *by itself* rid the popular mind of economic fallacies. By 1943 he was admitting, even if only privately, that the visual presentation he had created needed a very good accompanying verbal presentation for it to be effective. In 1936, he was thinking about the Disney animated cartoons. No “expert and enthusiastic teacher” had to explain Mickey Mouse films to their audiences. He had hoped to be able to create an animated film of economic matters that, like the Disney cartoons, would not have to be explained verbally. In his letter to Mausi, he, in effect, said that he had been mistaken.

A visual presentation can show incorrect, as well as correct, relations among economic things. I use the graphic representation of relations between price, supply, and demand, a diagram found in almost all textbooks in elementary economics, to illustrate this. The correct diagram (see figure 1 below) is based upon the following propositions about any commodity:

- As the price of a commodity increases, supply tends to increase, but demand tends to decrease.
- As the price of a commodity decreases, supply tends to decrease, but demand tends to increase.

Laypersons as well as economists regard these propositions as true. A higher price for shoes, for example, motivates shoemakers to make more shoes (thereby increasing the supply), but discourages buyers (thereby decreasing demand). A lower price for shoes encourages consumers to buy (increasing demand), but discourages shoemakers from making shoes (decreasing supply).

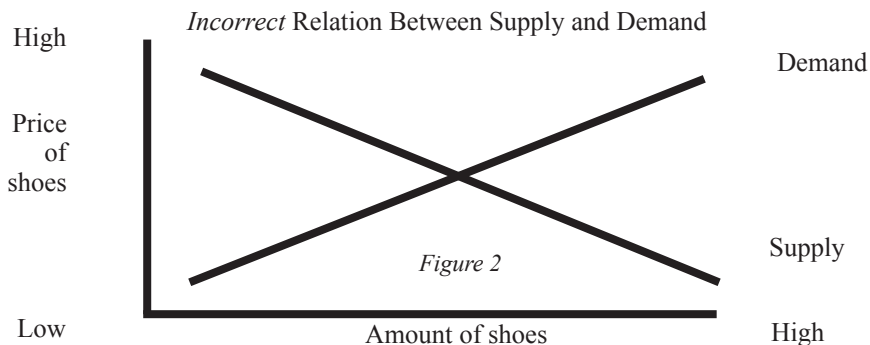


The price for shoes is indicated on the vertical Y axis on the left, and volume of shoes (either volume of demand or volume of supply) is indicated on the horizontal X axis on the bottom. The zero point for both is the intersection of the X and Y axes in the lower left-hand corner. The “demand curve” is said to “fall” from left to right because the highest price and the lowest volume of demand is a point at the upper left and the lowest price and highest demand is a point at the lower right. The line connecting these two points represents a negative association between price and demand. The “supply curve” is said to “rise” because the lowest price and lowest volume of supply is a point at the lower left, and the highest price and highest supply is a point at the upper right. The line connecting these two points represents a positive association between price and supply. The intersection of the two lines is called the “market clearing price,” the price at which the volume of demand equals the volume of supply.

A very similar diagram, however, can show incorrect relations between price, supply, and demand (see Figure 2, below). The following false propositions are just as easy to illustrate visually as are the true propositions:

- As the price of a commodity increases, supply tends to decrease, but demand tends to increase.
- As the price of a commodity decreases, supply tends to increase, but demand tends to decrease.

The “X” diagram for these propositions would show a “falling” supply curve and a “rising” demand curve. But it is not true that shoemakers would be encouraged to make more shoes if the price of shoes were low (increasing supply), but that these same low prices would discourage consumers from buying shoes (decreasing demand).



Even in 1936, Polanyi seemed to recognize that a visual presentation could present fallacies when he drew an analogy to a map:

If you trace an itinerary on a map you might make mistakes and if the map is crude and faulty the result might be useless, but no one would trace itineraries on a map which lead around in circles, while a man lost in a fog will walk round and round till he drops down from exhaustion. (“Visual Presentations,” p. 21 in this issue of *TAD*).

This fails to persuade me that a visual presentation of economic matters will, by itself, release viewers from economic fallacies. Just as a map can misrepresent the territory, so also can a visual presentation misrepresent the workings of an economy. Moreover, Polanyi is mistaken when he says that “no one

would trace itineraries on a map which lead around in circles.” If I want to take a sight-seeing trip, I might very well trace a circular itinerary that will take me to different sights on each step of the journey, and eventually bring me back home. I would not become lost by tracing and following a circular itinerary on a good map. Of course, by tracing and following a circular itinerary on a faulty map, I might become lost and end up far from home.

In the appendix to *Science, Faith and Society* (1946), Polanyi wrote something about science in general that might point to a change in his thinking about visual representations of social matters:

Parallel to the positivist movement there has occurred in our time yet another transformation of the premises of science. Earlier conceptions of reality, capable of visual presentation in space, were replaced by purely mathematical concepts (like multi-dimensional wave functions) signifying certain probabilities and determining certain energies, but having no conceivable pictorial meaning attached to them (*SFS*, 88).

I think that it is quite possible that Polanyi saw a connection between this position on the premises of science and his former enthusiasm for the visual presentation of social matters.

Models of the Economy

In his 1936 lecture, in his films of 1938 and 1940, and in *FEFT*, Polanyi was using a system of fluid dynamics as a model for an economy. Both his static and animated diagrams were based upon the physical model of the economy he had created in his chemistry laboratory, using tubes, flasks, beakers, and flowing water (*MPSP*, 163-4). His diagrams were attempts to overcome the limitations of this physical model. He continued to use fluid as a metaphor for money and for commodities, and the volume of flows of the fluid as a metaphor for the combination of frequencies and monetary values of different kinds of economic exchanges. In the physical model, the flasks and beakers were metaphors for various kinds of economic actors, and the tubes represented the connections between actors, connections through which the different volumes of money and commodities can be imagined to flow.

The projected animated film would be a visual representation of this fluid dynamics model of the workings of an economy. It had at least two advantages over the physical model. One was that the different kinds of economic things could be represented by using pictures and verbal labels. There are pictures of little houses, little factories, a little working man, a little woman shopper, and verbal labels such as “RAW MATERIAL MARKET” and “WHOLESALE COMMODITY MARKET.”¹ A second advantage was that in the films the shafts of the arrows showing the directions of flows of money and commodities can be shown to grow wider or narrower, indicating increases or decreases in the volumes of the flows of money and commodities. The physical tubes in the laboratory could not expand or contract in diameter. This was a serious limitation, because the ways these flows increase and decrease was central to what Polanyi wanted to communicate by means of his model. Following Keynes, he believed that demand could be increased by “squirting” or “pumping” more “fluid” into the “money belt,” thereby expanding that portion of the circular belt through which he imagined the fluid to flow.

Figures 1 and 2 in *FEFT* (4 and 7 respectively) represent this fluid dynamics model, but it is possible that Polanyi was already having second thoughts about this model by 1945. In his 1941 essay, “The Growth of Thought in Society,” Polanyi developed the contrast between two ideal types of social order: corporate and dynamic or spontaneous order (Jacobs 2005; Mullins 2012). As far as I know, Polanyi never explicitly said that he was dropping the fluid dynamics model—he just stopped using it.

The two models can be connected, even though they employ very different imagery. The ideal type of a spontaneous order emphasizes the mutual adjustments of interacting persons. People modify their

actions and interactions, including economic transactions, in the light of their assessments of the situations in which they find themselves acting. These assessments result in widely distributed information about the way the order is working, resulting in very diverse kinds of transactions. The fluid dynamics model and the associated prescription of “squirting” or “pumping” more fluid (money) into the system to prevent malfunctioning of the system requires an outside authority with the intelligence to understand the overall state of the system, and the power to create new money to pump into the money belt, in such a way that consumers have more money. The connection between the two models is that individuals would be likely to define their situations differently if they had more money. They are likely to buy more, thus increasing both demand and levels of employment. Polanyi, however, did not seek to make this connection explicit after 1945.

From some time before 1936 until 1945, Polanyi used the fluid dynamics model as an explicit tool for both thinking about economic matters and for communicating his thinking to others. It is impossible to know whether or not he continued to use it as a tool for his thinking, but he clearly stopped using it as a way to communicate his thinking. I believe that one of the reasons for this was his moving away from thinking of economies as being very similar to the kinds of physical systems studied by natural scientists. In 1930, while still in Germany, he organized “a study group to bring natural scientists and economists together to share their mutual expertise” (*MPSP*, 121). In his 1936 lecture, he still seems to have been using the analogy between an economy and physical systems. He wrote:

Primitive science persisting in the attempt to transform lead into gold and to construct routines of perpetual motion merely wasted its energies. Only when at last man recognized that the laws of nature preclude the attainment of those aims did he gain power to conquer nature by the use of these same laws. Similarly, the result of a general comprehension of economic life and of an acquiescence to its necessities will be to create real power of the community over its economic life (“Visual Presentation,” p. 22 in this issue of *TAD*).

This suggests to me that Polanyi believed that the laws of the market were “laws of nature” that could not be changed by human actions. Only if communities acquiesce to the necessities explained by the laws of the market will they have the kind of power over economic life that they now have over the physical world.

I do not want to overstate this point. Polanyi recognized that governmental laws and regulation affect the working of markets in ways that they could not affect the laws of nature. He was strongly critical of *laissez faire* economics.² My argument is simply that the development of his thinking about social matters had been going on for many years. Walter Gulick (2008, 18) points out that Polanyi had mentioned spontaneous social order as early as 1917, but it did not become systematically integrated into his social theories until later. Unlike the fluid dynamics model, he continued to use the ideal types of corporate and spontaneous order in his writings about social matters after 1945.

In 1946, just one year after the publication of *FEFT*, Polanyi’s *Science, Faith and Society* was published. He says nothing about economics or the economy until where he writes:

Society is of course also an economic organization. But the social achievements of ancient Athens compared with those of, say, Stockport—which is of about the same size as Athens was—cannot be measured by the differences in the standard of living in the two places. The advancement of well-being therefore seems not to be the real purpose of society but rather a secondary task given to it as an opportunity to fulfill its true aims in the spiritual field (*SFS*, 83).

Polanyi was no longer writing about the economic dimension of society as if it were an isolated system that could be explained by natural laws or represented by diagrams based upon a fluid dynamics model of an economic system. Moreover, he was arguing that the material standard of living that resulted from economic activity ought to be subordinated to the spiritual ideals of a society.

Attitudes Toward John Maynard Keynes

Even though in June of 1936 Polanyi had not yet read Keynes's *The General Theory of Employment, Interest and Money* (1936), he was already sympathetic to Keynes's contention that to get out of the Great Depression it would be necessary to increase demand by putting more money into the hands of consumers. He started to read Keynes in December of 1936, struggled with it for half a year, and claimed to have understood it by the summer of 1937 (*MPS*, 165). He was enthusiastic about Keynes's theory because it made some of his previously tacit beliefs explicit, and developed the implications of those beliefs beyond what he had done. In *FEFT*, Polanyi said that his purpose in writing the book was to convert Keynes's theory into "a matter of common sense" (*FEFT*, v). He also said that his animated film, *Unemployment and Money* (1940), was an earlier attempt to popularize Keynes's theory.

But in between 1945 and 1958, when *Personal Knowledge* was finally published, Polanyi seems to have lost his enthusiasm for *The General Theory of Employment, Interest and Money*. There are six references to Keynes in *Personal Knowledge* (*PK*, 24, 27, 29, 30n, 31, 161), but none of them are to Keynes's economic theory. They all refer to Keynes's theory of probability, a theory of which he was very critical. During the years in which he was struggling to work out the philosophy and social theory he presented in *Personal Knowledge*, Polanyi continued to hold fast to his foundational faith in the socially redemptive power of the discovery and widespread dissemination of the truth. But he did not continue to say that Keynes's economic theory was an important dimension of the truth that needed to be publicized.

Paul Roberts and Norman Van Cott (1998-99, 26) say of *FEFT*, "Polanyi synthesized Keynesian economics with the monetary school of economics later associated with Milton Friedman. In this synthesis, Polanyi was at least two decades, and perhaps three, ahead of the best minds in the economics profession." Roberts makes this same point in "Polanyi the Economist" (2005, 130). Roberts was a graduate student in economics when he first met Polanyi in the 1961-62 academic year. After that, he worked directly with Polanyi, both as a graduate student and as a postgraduate through 1968 (2005, 128). He probably would know, much better than I, why Polanyi did not refer to Keynes's economic theory in *Personal Knowledge*. But neither in his joint article with Van Cott nor in his later essay does Roberts comment on this.

In his essay "Polanyi and the 'Austrian School,'" Vinti also focuses on writings prior to *Personal Knowledge*. He contrasts Polanyi's economic theory with that of the Austrian school in a way that seems to get the temporal sequencing wrong. He says:

While the members of the Austrian school, and particularly Menger, Mises, and Hayek, start from an economic analysis, Polanyi, in this respect much closer to Popper, starts with an analysis, initially more sociological than epistemological, of the dynamics of scientific knowledge, the analysis of the 'Republic of Science', seen as a paradigm of all intellectual communities. He will then move on, almost immediately, to bring economics and political questions to the center of his attention (Vinti 2005, 137).

"The Republic of Science" (*KB* 49-72), however, was published in 1962, after *Personal Knowledge* and long after *FEFT*. Since *FEFT* was published at the end of the period when economic questions were at the center of Polanyi's attention, I disagree with the temporal sequence Vinti suggests. Although there

always had been a strong sociological dimension to Polanyi's thinking, I believe that his turn toward economics in the Great Depression was a temporary turn away from more sociological ways of thinking and writing. In the 1930s, like Menger, Mises, and Hayek, Polanyi started out with economic analysis. Unlike them, he later turned away from "pure economics," back toward what I characterize as a "sociology of economic life."

Polanyi's 1941 essay, "The Growth of Thought in Society," was an important step in his return to, and development of, a sociological perspective. That was not, however, a major factor in his efforts to complete *FEFT*, which does start with a Keynesian economic analysis.

In "Observations on Michael Polanyi's Keynesianism," Manucci (2005) also does not reflect on his treatment of Keynes in *Personal Knowledge*. She focuses entirely upon the similarities and differences between Keynes's *General Theory* and Polanyi's *FEFT*. She does point to a difference between Polanyi and Keynes that was clear in 1945. Polanyi asserts a "principle of neutrality," a "principle of separation between economics and politics." She contrasts Polanyi's "moderate liberalism" with Keynes's socialist tendencies:

In fact, Polanyi underlines the importance of a separation between the theory of full employment, which has merely economic features, from social problems, which have political features, whereas Keynes thinks that there is the possibility of a close connection between such problems.... From what we have just said it is clear that the concepts that contrast with Polanyi's thought are *liberal socialism*, to be substituted by 'moderate liberalism', and *social and economic justice*, which is typical of socialist choices (Manucci 2005, 157).

Nye (2010, 166) also comments on this difference between Polanyi and Keynes: "they fundamentally disagreed on the naturalness of the economic order." She quotes Polanyi: "I wholeheartedly accept the guidance of the 'invisible hand' for the mutual adjustments of productive units" (*FEFT*, 149). Keynes, in contrast, did not regard the working of the "invisible hand" as a law of nature. To use a term that has more recently become popular, Keynes regarded the invisible hand as "socially constructed." Both Manucci and Nye point out that in this respect, Polanyi's position was closer to that of Hayek than to that of Keynes.

Polanyi was dedicated to the discovery of truth and to publicizing the truth. He distinguished between truth and ideology, and between publicity (the spreading of truth) and propaganda (the spreading of ideology). As he became better acquainted with the relations between social science and politics in the U.S., he had to have learned that many economists, business persons, and politicians regarded Keynesian economics as dangerously ideological. In the U.S., supporters of Roosevelt's New Deal programs used Keynesian economics to support their positions, and those who opposed the New Deal regarded Keynesian economic theory as an ideological justification for political actions they hated. In *The Coming of Keynesianism to America*, Colander and Landreth (1996) describe the fierceness of the opposition to Keynes's theory. In his introduction to *General Theory of Employment, Interest and Money*, Krugman (2006) points out that a panel of "conservative" scholars and policy-makers included Keynes's book in tenth place on their list of the ten most dangerous books of the 19th and 20th centuries (*Human Events*, 2005). Their voting resulted in a "danger score" of 23 for Keynes' book, much smaller than the score of 74 they assigned to number one on the list, *The Communist Manifesto*. The other eight books, in order of descending danger, were: *Mein Kampf*, *Quotations from Chairman Mao*, *Sexual Behavior in the Human Male*, *Democracy and Education*, *Das Kapital*, *The Course in Positive Philosophy*, and *Beyond Good and Evil*. Polanyi, of course, died before the creation of this list, but he had to have known about the ideological storms over Keynesian theory.

The battle continues. In 2010, a member of the Austrian School of economics released a lecture on YouTube entitled “Keynes and the ‘New Economics’ of Fascism” (Salerno, 2010). There have been just over 7,500 views of this hour and a half long lecture. There is, however, a much shorter, and much more popular, video that attacks Keynesian economics. By October of 2014, there have been over 4,800,000 viewings of the seven-minute YouTube video “‘Fear the Boom and Bust’ a Hayek vs. Keynes Rap Anthem” (Papola and Roberts 2010) and over 2.5 million viewings of the sequel “Fight of the Century: Keynes vs. Hayek Round Two” (Papola and Roberts 2011).

John Papola (2010) appeared at the Austrian Scholars Conference to explain the making of the first video. Towards the end of his presentation, in response to a question, he said: “I would like to destroy the circular flow, and banish it from thought. It’s an awful, awful place to start. I’m glad I didn’t learn it, because had I, it would have trapped my mind in a fallacy.” In one scene in the video, a circular arrow, similar to the one that appears in Polanyi’s visual presentation of the flow of fluids in the “money belt” appears as a representation of the Keynesian theory that the video presents as dangerous and irresponsible.

Conclusion: A Sociology of Economic Life

In spite of not promoting Keynesian economics in his later writings, Polanyi was ambivalent towards Keynes’s theory. I do not believe that he would have agreed with Salerno that Keynesian theory promotes “economic fascism,” which is a step in the direction of the kind of totalitarian dictatorships exemplified by Mussolini’s Italy and Hitler’s Germany. Nor do I believe that he would have agreed with Papola that the image of the circular flow traps a person’s mind in a fallacy. I do believe, however, that he softened the degree to which he believed that there could be a wall of separation between the economic and political domains.

What little Polanyi says about economics in *Personal Knowledge* is instructive. In his chapter on “Conviviality,” he describes the framework of society by using a mathematical metaphor, “coefficient.” The third of the following list of four “coefficients of societal organization” is associated with an economic system: “the first is the *sharing of convictions*, the second the *sharing of a fellowship*. The third coefficient is *co-operation*, the fourth the exercise of *authority or coercion*” (*PK*, 212; Polanyi’s italics). Then comes the sentence that suggests a weakening of the wall of separation between the political and economic domains: “These four titles refer to four aspects of society which must always be seen in conjunction with each other, for only together can they form stable features in the form of social institutions” (*PK*, 212).

In addition to saying that we must see the economic system in conjunction with the other three kinds of institutions, Polanyi seems to have banished the “invisible hand” in which he had placed so much faith in *Full Employment and Free Trade*. He lists examples of institutions in each category:

- (1) Universities, churches, theatres and picture galleries, serve the sharing of convictions, in the wide sense of the term which I am applying here. They are institutions of *culture*.
- (2) Social intercourse, group rituals, common defense, are predominantly convivial institutions. They foster and demand *group loyalty*.
- (3) Co-operation for a joint material advantage is the predominant feature of society as *an economic system*.
- (4) Authority and coercion supply the *public power* which shelters and controls the cultural, convivial and economic institutions of society (*PK*, 212-213; Polanyi’s italics).

It is public power, not the invisible hand, that “shelters and controls” the “economic institutions of society.” By making co-operation the coefficient of the economic system, Polanyi appears to be rejecting *competition* in favor of co-operation. But competition is one of the constituent elements of the laws of the market, for which the “invisible hand” is a metaphor.

My main point in this conclusion, however, is to affirm Vinti's point about Polanyi having taken a sociological perspective, rather than a purely economic perspective. My disagreement with Vinti is that there was a period in Polanyi's career in which he temporarily suspended his more sociological perspective in favor of one that was more purely economic.

ENDNOTES

¹Although contemporary readers might object to this gender stereotyping of workers and shoppers, it probably offended few of his audiences or readers in the 1930s and 1940s.

²I am grateful to Walter Gulick for this cautionary note.

REFERENCES

- Colander, David, and Harry Landreth, eds. 1996. *The Coming of Keynesianism to America: Conversations with the Founders of Keynesian Economics*. Brookfield: Edward Elgar.
- Gulick, Walter. 2008. "Michael and Karl Polanyi: Conflict and Convergence." *The Political Science Reviewer* 37: 12-43.
- Human Events. 2005. "Ten Most Harmful Books of the 19th and 20th Centuries." *Human Events*. <http://www.humanevents.com/2005/05/31/ten-most-harmful-books-of-the-19th-and-20th-centuries>. Accessed May 31, 2014.
- Jacobs, Struan. 2005. "Polanyi's Analysis of Social Orders." In *Emotion, Reason, and Tradition: Essays on the Social, Political, and Economic Thought of Michael Polanyi*, edited by Struan Jacobs and R.T. Allen, 99-114. Burlington: Ashgate.
- Keynes, John M. 2006 [1936]. *General Theory of Employment, Interest and Money*. Basingstroke, Hampshire, UK: Palgrave Macmillan.
- Krugman, Paul. 2007. "Introduction to the 2006 Edition." *General Theory of Employment, Interest and Money*. Basingstroke, Hampshire, UK: Palgrave Macmillan. <https://notendur.hi.is/~gylfason/KrugmanonKeynes.pdf>. Retrieved October 24, 2014.
- Manucci, Monia. 2005. "Observations on Michael Polanyi's Keynesianism." In *Emotion, Reason, and Tradition: Essays on the Social, Political, and Economic Thought of Michael Polanyi*, edited by Struan Jacobs and R.T. Allen, 149-164. Burlington: Ashgate.
- Mullins, Phil. 2012. "The Growth of Thought in Society as a Major Motif in Polanyi's Philosophy." Paper presented at the Polanyi Society Loyola Conference, June 8, 2012.
- Nye, Mary Jo. 2010. *Michael Polanyi and His Generation: Origins of the Social Construction of Science*. Chicago: University of Chicago Press.

- Papola, John. 2010. "The Making of the Keynes-Hayek Rap: Economic Theory Meets Popular Culture." Presentation at the 2010 meeting of the Austrian Scholars Conference. <https://www.youtube.com/watch?v=eBzXpH3Tjo0>. Retrieved October 24, 2014.
- Papola, John and Russ Roberts. 2010. "'Fear the Boom and Bust' a Hayek vs. Keynes Rap Anthem." <http://www.youtube.com/watch?v=d0nERTFo-Sk>. Retrieved October 24, 2014.
- _____. 2011. "Fight of the Century: Keynes vs. Hayek Round Two." <https://www.youtube.com/watch?v=GTQnarzmTOc>. Retrieved October 24, 2014.
- Polanyi, Michael. 1941. "The Growth of Thought in Society." *Economica* 8: 421-436.
- _____. 1945. *Full Employment and Free Trade*. London: Cambridge University Press.
- _____. 1964 [1946]. *Science, Faith and Society*. Chicago: University of Chicago Press.
- _____. 1964 [1958]. *Personal Knowledge: Towards A Post-Critical Philosophy*. New York: Harper & Row/Torchbook.
- _____. 1969. *Knowing and Being: Essays by Michael Polanyi*. Edited by Marjorie Grene. Chicago: University of Chicago Press.
- _____. 2009 [1966]. *The Tacit Dimension*. Chicago: University of Chicago Press.
- _____. 2014 [1936]. "Visual Presentation of Social Matters." *Tradition and Discovery* 41:2, 13-24.
- Polanyi, Michael and Harry Prosch. 1975. *Meaning*. Chicago: University of Chicago Press.
- Roberts, Paul. 2005. "Polanyi the Economist." In *Emotion, Reason, and Tradition: Essays on the Social, Political, and Economic Thought of Michael Polanyi*, edited by Struan Jacobs and R.T. Allen, 127-132. Burlington: Ashgate.
- Roberts, Paul and Norman Van Cott. 1998-99. "Polanyi's Economics." *Tradition and Discovery* 25:3, 26-30.
- Salerno, Joseph. 2010. "Keynes and the 'New Economics' of Fascism." <http://www.youtube.com/watch?v=fpv4W7I4cms>. (Retrieved October 24, 2014)
- Scott, William and Martin Moleski, S.J. 2005. *Michael Polanyi: Scientist and Philosopher*. New York: Oxford University Press.
- Vinti, Carlo. 2005. "Polanyi and the 'Austrian School.'" In *Emotion, Reason, and Tradition: Essays on the Social, Political, and Economic Thought of Michael Polanyi*, edited by Struan Jacobs and R.T. Allen, 133-148. Burlington: Ashgate.