

ON THE TRAIL OF MIND: NATHAN HOUSER DISCUSSES PEIRCE, PRAGMATISM AND COGNITION

Na trilha da mente: Nathan Houser discute Peirce, pragmatismo e cognição

Tras la pista de la mente: Nathan Houser habla de Peirce, el pragmatismo y la cognición

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Abstract: Interview with Professor Emeritus Nathan Houser, philosopher, editor, and director of the Peirce Edition Project for 15 years. In this conversation, Houser provides a living history of the institutional, editorial, and conceptual conditions that enabled the dissemination and development of Peirce's ideas in the late 20th and early 21st centuries. Houser's voice—lucid, historically informed, and methodologically pluralistic—resonates as both a witness to the maturation of Peircean scholarship and as an advocate for its future development across disciplinary boundaries.

Keywords: C. S. Peirce, philosophy, cognitive science, mind, meaning.

Resumo: Entrevista com o professor emérito Nathan Houser, filósofo, editor e diretor do Peirce Edition Project por 15 anos. Nesta conversa, Houser fornece uma história viva das condições institucionais, editoriais e conceituais que permitiram a disseminação e o desenvolvimento das ideias de Peirce no final do século XX e início do século XXI. A voz de Houser - lúcida, historicamente informada e metodologicamente pluralista - ressoa tanto como testemunha do amadurecimento dos estudos peirceanos quanto como defensora de seu desenvolvimento futuro além das fronteiras disciplinares.

Palavras-chave: C. S. Peirce, filosofia, ciência cognitiva, mente, significado.

Resumen: Entrevista con el profesor emérito Nathan Houser, filósofo, editor y director del Peirce Edition Project durante 15 años. En esta conversación, Houser ofrece una vívida historia de las condiciones institucionales, editoriales y conceptuales que permitieron la difusión y el desarrollo de las ideas de Peirce a finales del siglo XX y principios del XXI. La voz de Houser -lúcida, históricamente informada y metodológicamente pluralista- resuena a la vez como testigo de la maduración de los estudios peirceanos y como defensor de su futuro desarrollo más allá de las fronteras disciplinarias.

Palabras clave: C. S. Peirce, filosofía, ciencia cognitiva, mente, significado.

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Presentation

This interview with Professor Nathan Houser offers a unique and historical exploration of one of the leading figures in the critical study of Charles S. Peirce's semiotic pragmatism. A philosopher, professor emeritus at Indiana University – Purdue University Indianapolis, editor, and director of the Peirce Edition Project for 15 years, Houser has played a central role in shaping the Peircean scholarship over the past few decades. His contributions extend from painstaking editorial work on Peirce's unpublished manuscripts to influential interpretations of Peirce's semiotic pragmatism in dialogue with contemporary debates in pragmatism, semiotics, logic, cognitive science, and the philosophy of mind.

In this conversation, Houser reflects on the philosophical and biographical trajectory that led him to Peirce, revealing how personal, political, and intellectual experiences coalesced into a lifelong commitment to a thinker once marginalized in mainstream philosophy. The interview moves fluidly between biography and theory, providing a living history of the institutional, editorial, and conceptual conditions that enabled the dissemination and development of Peirce's ideas in the late 20th and early 21st centuries.

Readers will find in Houser's remarks a compelling articulation of Peirce's relevance for our time. He defends Peirce's realist semiotic framework as a powerful alternative to the dominant currents of analytic nominalism and reductive naturalism. He situates Peirce's logic of abduction, theory of signs, and existential graphs within a broader vision of a general theory of intelligence—one that bears directly on pressing questions in cognitive science, AI, and the philosophy of mind. His reflections on the

affinities and tensions between Peirce and figures such as Daniel Dennett further illuminate the stakes of integrating pragmatist and functionalist perspectives on intentionality, consciousness, and meaning.

This interview is not only a personal testament to an intellectual life shaped by Peirce but also an invitation to reconsider Peirce's legacy as a living and evolving contribution to contemporary Philosophy. Houser's voice—lucid, historically informed, and methodologically pluralistic—resonates as both a witness to the maturation of Peircean scholarship and as an advocate for its future development across disciplinary boundaries.

Patrícia Fanaya and Priscila Borges, interviewers.

Introduction and Personal Context

INTERVIEWERS: Professor Houser, could you share a bit about your academic journey? How did philosophy, and especially Peirce's semiotic pragmatism, become part of your trajectory?

NATHAN HOUSER: It was a circuitous path that led me to a career in philosophy and to Peirce. Looking back after all these years at the various career aims that held sway at different times along the way, whether law, politics, economics, or mathematics, among others, I can see that philosophy was always patiently waiting to be favored. In middle school a personality test was administered, with early career guidance in mind, to disclose whether we students were primarily interested in people, things, or ideas. My interests were found to be decidedly in the arena of ideas. During my childhood years, I was earnestly interested in religion and read my King James Bible devotedly and with a determination to comprehend what I read. I recall that my Protestant mother early on explained that in my pursuit of truth

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I should not uncritically accept the word of reputed authorities but should use my own intelligence, based on diligent study and investigation, to guide my beliefs. She mainly had religious truths in mind, but I applied her counsel more generally in my quest for knowledge.

I began my college education in the fall of 1962, anticipating that my career trajectory would carry me to law school and a future in politics. But the United States was then entering a period of social and political unrest that soon diverted me from that path. I spent the summer of 1964 in Washington D.C. working as a political intern for U.S. Senator Vance Hartke. Senator Hartke was a staunch opponent of the planning then underway to expand military support for the South Vietnamese regime. His sober and convincing assessment that the war was both unjust and unwise bolstered my growing distrust of government policy making. During that summer, I saw first-hand how much time and effort successful politicians had to spend fundraising and campaigning, and indulging donors and powerful constituents, and how little time was left to devote to statesman-like matters of governance. When I returned to college in the fall, I no longer saw a clear career path before me.

I was soon caught up in the counter-culture movement energized by politicized folk and popular music and a growing subculture of feminism and anti-war and civil rights activism. Having grown up during a time when patriotism was measured by one's readiness to take up arms, it was a time of soul searching. I volunteered to join the Peace Corps, thinking that would be a way to serve my country without participating in a war I believed was unjust, but when I was informed by the US State Department that Peace Corps volunteers would no longer be permitted to discuss American foreign

policy while abroad, I felt completely thwarted. In early 1968, I moved to Toronto and joined the growing community of Vietnam War resisters.

I spent six years in the book business, first as the supervisor of a chain of Ontario-based bookstores and then as the co-owner with my wife of a bookstore in Kitchener, Ontario. By the fall of 1974, I knew that the life of a businessman was not the life for me; I was missing academic life. One of the clerks working in our bookstore was a philosophy graduate student at the University of Waterloo and my conversations with her persuaded me that it was time to resume academic studies, and that philosophy was the path I wanted to follow. Because of a credit transfer mix-up when I had changed universities in the US, I was three credit hours short of having completed a bachelor's degree in economics before moving to Canada, and the University of Waterloo would only transfer two years of credits from foreign universities, so I enrolled in the undergraduate philosophy program at Waterloo and studied philosophy for two years to finish a bachelor's degree before entering the graduate program in 1976.

Although it was an eclectic department with a wide range of course offerings, the tone tended toward analytic philosophy with an emphasis on formal logic, but at least three of the dozen or so philosophy professors at Waterloo had taken PhDs at the University of Illinois under the supervision of Max H. Fisch, the undisputed leading Peirce scholar of his time. I was introduced to Peirce in a course on modern philosophy taught by one of those Fisch protégés, Don D. Roberts. Roberts included a section on Thomas Reid's common-sense philosophy and briefly discussed Peirce's related critical common-sensism. I was fascinated by what Roberts said about Peirce's philosophy. We had been

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assigned a reading from Reid's *An Inquiry into the Human Mind* (1764: 218) in which Reid discussed the importance of signs for acquiring and advancing intelligence. I chose Reid's theory of signs as the subject for an assigned research paper for that course. I learned from Roberts that Peirce had produced perhaps the most penetrating theory of signs ever developed and that it was fundamental for his philosophy. That was my introduction to semiotics.

Roberts' remarks in that early course and his evident high regard for Peirce as a major philosopher, stoked my interest. I began discussing Peirce with Roberts and took all the advanced courses on Peirce and pragmatism that he offered. I became his teaching assistant for his correspondence logic course which was based on Peirce's *Existential Graphs*. I found Peirce's ideas relevant to most of my graduate work at Waterloo, whether in philosophy of science, philosophy of mind, theory of knowledge, or history of ideas. Peirce became a principal focus of my interest.

INTERVIEWERS: What were the main milestones or decisive moments in your career as a philosopher and editor?

NATHAN HOUSER: In 1976, the Peirce Edition Project (PEP) began operations in Indianapolis with Roberts as an off-site associate editor. Roberts opened a branch office for the edition in Waterloo with a complete duplicate set of the PEP manuscript base. That made Waterloo only the third place outside of Harvard where copies of Peirce's manuscripts were available for research.² I used the Peirce manuscript

² Harvard's microfilm edition of Peirce's manuscripts had been available from Harvard since the mid-1960s, but it had not been purchased by many institutions and was not much used.

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collection as my research base to write a paper on Peirce's proof of pragmatism for a course I took with Roberts and found it exhilarating to work directly with Peirce's holograph texts, many of which had never been published. I had a growing interest in the philosophy of mind and, with Roberts as my advisor, wrote my master's thesis on the structure of consciousness according to Peirce. I spent many weeks alone with Peirce's manuscripts, studying them and transcribing relevant passages. That was a decisive time in the trajectory of my life that solidified my admiration of Peirce as a thinker—and led me toward my career as a critical editor of his writings.

Another turning point in my academic journey was when I was selected to participate in a Fulbright supported philosophy of mind workshop at the University of Bristol in the fall of 1978. The workshop was organized by Andrew Woodfield and brought together a number of Bristol philosophers with two senior Fulbright scholars, Daniel Dennett and Stephen Stich, and two graduate student Fulbrighters, Fred Adams and me. The focus of the workshop was on the issues in philosophy of mind then being reconsidered in light of the emerging collaborations underway involving philosophers, computer scientists, psychologists, and the emerging field of AI. Dennett and Stich channeled workshop proceedings toward questions they would soon examine in detail in seminal publications: Dennett in his 1982 paper, "Beyond Belief," and Stich in his 1983 book, *From Folk Psychology to Cognitive Science: The Case against Belief*. Even though I had come to Bristol with a manifest interest in philosophy of mind, my experience there strengthened that interest and convinced me that Peirce had something to contribute to ongoing debates. I, with my wife and sons, and an accompanying niece, lived in a house in Montpelier, just a few doors away from where the Dennetts were staying. In the mornings, I would often walk the mile or so to campus with Dennett and we would talk about topics of the moment.

(We would usually walk past the wall of the café on St Michael's Hill which Richard Gregory made famous for exemplifying the illusion that its rows of alternating black and white tiles were sloped and not parallel.³) One day Dennett asked me if I had decided on a topic for my dissertation and I told him I was thinking of working on the problem of qualia and thought that Peirce had something useful to contribute to the ongoing debates. Even though Dennett was convinced that qualia are only narrative constructs, he agreed that it was an interesting topic of current relevance, but he warned me that focusing on Peirce might not be good for my career. Peirce, he thought, was tied too closely to the growing semiotics movement which at the time was much disparaged by analytically trained philosophers. That conversation with Dennett forced me to recognize that for the greatest chance of career success in philosophy I might have to pursue a path attentive to the current fashions and biases rather than continue on the path directed more by the ideas that attracted my interest. But I was not willing to walk away from Peirce, as I was convinced that there were important lessons to be learned from him that were quite relevant for contemporary philosophy of mind (what might better have been called “philosophy of intelligence” given the focus on AI). When I returned to the University of Waterloo in the spring of 1978, I started a cognitive science discussion group to stay abreast of developments.

A more decisive turning point in my career occurred soon after I returned to my graduate studies at Waterloo. Prof. Roberts, with the approval of Edward C. Moore, Director of PEP in Indianapolis, invited me to join the Waterloo branch of PEP to assist with the preparation of volumes 4 and 5 (W4 & W5) of the chronological edition. For the next five years I worked several hours a week for Waterloo PEP while also continuing my graduate course work in the PhD program and working as a teaching assistant. My

³ [Café wall illusion - Wikipedia](#).

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work for PEP involved improving the selection and chronological arrangement of manuscripts for the W4-W5 period and the accumulation and organization of copies of publications and materials necessary for our editing work: for example, I tracked down (this was pre-internet research) and acquired copies of eighty-eight reviews and notices of the Collected Papers. Waterloo had advanced computer and technology capabilities for the time and our project office had computer terminals connected to a mainframe computing system that enabled us to transcribe W4 and W5 manuscripts into digital files and to print copies for proofreading. I was also assigned to begin working on an introduction for W4 with the expectation that I would provide Max Fisch with my preliminary work. These were the formative years of my career as a Peirce scholar and editor.⁴

In early 1983, Ed Moore recruited me to join PEP as assistant editor at Indiana University in Indianapolis; my wife, Aleta, who worked as a transcriber and proofreader at PEP Waterloo, was offered a job as copyeditor. I remembered Dennett's advice and realized that if I accepted Moore's offer, I would be working on the fringes of mainstream philosophy, but I had come to regard Peirce as a great though neglected philosopher who still had much to contribute, and I recognized the need for the work being done in Indianapolis. The fact that Moore had arranged for me to join the philosophy department in Indianapolis and agreed to give me one day a week to work on my dissertation settled my doubts and my career path was set as a critical editor and philosopher with a predominantly Peirce-based research program.

⁴ During these years I was also the co-editor of *Edios*, a graduate journal of philosophy.

For many years, my principal work at PEP continued to be improving the chronological arrangement of Peirce's manuscripts, recommending texts for inclusion in the Indianapolis Edition, and preparation of editorial notes. I consulted with other PEP staff members and recruited contributing editors for guidance in these matters. Unfortunately, in 1982 in the preface to W1, Ed Moore represented that the work of organizing, dating, and assigning new numbers to the reassembled manuscripts had been completed. That was an exaggeration that led to regrettable confusion on the part of funding agencies and Peirceans worldwide. It is true that a somewhat better than rough chronological arrangement had been completed when Moore composed the W1 preface, but the most difficult work of dating problem manuscripts and, in particular, of arranging the many pages of different versions and drafts of Peirce's writings into the correct compositional order, remained unfinished.

Working with Peirce's manuscripts was the most satisfying work of my career, sometimes rewarding me with the pleasure of knowing I was likely the first person to read a reassembled manuscript since Peirce had disassembled it to use some of its pages elsewhere (or since it had fallen into disarray after being transported to Harvard following Peirce's death). But it was demanding work requiring considerable research beyond that usually associated with editing. It required focused concentration on the subject matter of the texts under consideration, as well as constant attention to the details of Peirce's life and especially his intellectual pursuits and activities of that time. I became so occupied with my work with Peirce's manuscripts that I found it difficult to make headway with my one-day-a-week dissertation research until R575 caught my attention.⁵ Robin had described this

⁵ Throughout this interview I will refer to the Peirce manuscripts from the Houghton Library at Harvard using R (for Robin) instead of MS, followed by the manuscript number assigned in Robin's catalogue. This convention serves as a slight reminder that there are many Peirce manuscripts in other collections.

manuscript as “Notes on Logical Algebra” and left it undated. Christian Kloesel had tentatively dated its composition as 1887, putting it just beyond the W4-W5 period manuscripts I was working with at that time, but I recognized some of what Robin called “notes” as logical proofs that resembled proofs Peirce had included in his 1880 American Journal of Mathematics (AJM) paper “On the Algebra of Logic” (W4:163–209), although the R575 proofs were rendered in an earlier notation. I suspected that these pages were part of a preliminary draft of AJM 1880 and brought them to the attention Don Roberts, who happened to be in Indianapolis just then. He agreed that R575 must be a close predecessor of AJM 1880, and was quite interested in this discovery because he thought it might shed light on what was known as the distributivity scandal, a reproof of Peirce for having implied in AJM 1880 that he had proved the law of distribution but that the proof was too tedious to include. Ernst Schröder, one of the ablest algebraic logicians of the time, declared that the law of distribution could not be proved in Peirce’s AJM1880 system and challenged Peirce to produce the alleged proof. Unable to satisfy Schröder, Peirce concluded that he must have been mistaken. In 1969, Roberts, with a colleague, had written a note on this scandal. I knew that I would have to spend many hours reassembling the pages of R575, studying the logical proofs, and researching the “scandal,” so I discussed with Roberts whether he thought that if I could show that R575 was a precursor, perhaps a draft, of AJM 1880, and could demonstrate that it addressed Peirce’s claims about the law of distribution, did he think it might constitute the basis for a dissertation. He thought it would. I was able to meet these conditions and, in this way, was able to merge my doctoral research with manuscript research and use my one day a week to write my

dissertation on “Peirce’s Algebra of Logic and the Law of Distribution,” which I successfully defended in 1985.⁶

In this, and in many other ways, my work on the Indianapolis Edition supported and shaped my career in philosophy. Of course, it was my deep and penetrating exposure to Peirce’s thought through the daily, and yearly, concentration on its development and relevance, necessary for my manuscript study and editing work and for composing introductions to the Writings, that most shaped my career, but my connection with PEP opened many doors for me. I was invited by Tom Sebeok to join the faculty of his Bloomington Research Center for Language and Semiotic Studies and taught courses in Bloomington on Peirce’s semiotics and on his philosophy. I worked with the philosophy department in Bloomington to engage graduate students for research assistantships at PEP. I worked closely with Peter Hare, mostly behind the scenes, to keep the Peirce Society functioning. I organized the logic symposium for the Peirce Sesquicentennial International Congress held at Harvard in 1989 and, together with Don Roberts and James Van Evra, edited a substantial collection of essays developed from the symposium presentations. Because logic was the one area of Peirce’s work that had, if somewhat at a distance, continued to be admired within analytic philosophy community throughout the last half of the 20th century, I was able to make some connections with philosophers who had no particular interest in Peirce or American philosophy.

A notable way in which PEP supported and shaped my career was through its function as a research center. Almost from the beginning of its operation, PEP attracted philosophers and

⁶ The restored text of R575 (348 in PEP’s early chronological numbering system) was included in W4, p. 21–37.

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semioticians, as well as scholars from other disciplines, because of its concentration of resources dealing with Peirce and 19th and 20th American philosophy and intellectual history. The resources at PEP available to researchers included not only a complete photocopy set of the Peirce manuscripts filmed for the Harvard microfilm edition, but thousands of additional pages from the Houghton collection and from other archival deposits. Also, Max Fisch was in residence at PEP from its founding until 1992 and his unique database (consisting of two sets of thousands of 6 by 8 inch cards and slips, one set organized chronologically and the other alphabetically by name or subject), that furnished incomparable access to the details of Peirce's life and the development of his thought. A lengthy bank of filing cabinets contained more in-depth information about Peirce's life and times, accumulated from Fisch's years of archival research and his extensive correspondence with scholars from around the world. Fisch's considerable library together with a significant collection of books from the library of Charles Morris (and later that of Carolyn Eisele, Paul Weiss, and others) constituted the single best specialized collection of works supporting research on Peirce and the early period of American pragmatism. For at least the first twenty-five years of PEP's operation, perhaps even thirty or more, digital archival and library research was either not yet possible or was inadequate for in-depth research. During those years scores of graduate students and scholars from the U.S. and from abroad visited PEP, often for extended periods, to conduct research for graduate degrees or for monographs, and I formed many professional relationships and personal friendships that influenced the course of my career.

The more singular milestones during my years at PEP, for me as well as the project, were the publication of volumes of the chronological edition (I came to Indianapolis PEP with Don Roberts to celebrate the publication of W1 and had recently joined the Indianapolis team when W2 appeared.) The

publication of EP1 in 1992 and EP2 in 1998 were also of major importance for me, especially EP2, which provides the most complete single-volume entrée to Peirce's mature semiotic pragmatism. The inclusion of two of the reconstructed drafts of R318, Peirce's famous 1907 letter to the editor of *The Nation*, was especially satisfying given the weeks of effort it had taken to reassemble the more than 325 draft pages (not counting preliminary drafts from separate manuscript folders) into their compositional order. After Christian Kloesel left PEP in 1993 and I became its director, I had to shift a lot of my time from manuscript and annotation research to editorial oversight, administration, promotion, grant writing, and fund raising. The watershed event of my later years at PEP, one for which I was mainly an observer, but with which I had meaningful ties, was the internationalization of Peirce scholarship and the creation of Peirce research centers and collectives around the world. Many of the principals of these dispersed centers for Peirce studies had spent time at PEP conducting research and working with PEP's philosophers and semioticians. This spreading of Peirce studies has been the single most important factor in the increasingly global interest in Peirce's philosophy and semiotics, and it is satisfying to suppose that I had a role to play in that development.

The final milestone event in my career was my retirement which, after many years, gave me time to think without interruptions.

Contributions to American Pragmatism and Charles S. Peirce Scholarship

INTERVIEWERS: Throughout your career, you have played an essential role in editing and disseminating Peirce's work. What do you consider to be Peirce's main contributions to contemporary philosophy?

NATHAN HOUSER: If by “contemporary philosophy” we mean the period of philosophy following the modern period from Descartes to Kant and Hegel, then we can credit Peirce with being a major contributor to, arguably the father of, pragmatism, increasingly regarded as the third major tradition of contemporary philosophy, along with analytic and continental philosophy. I think we must say that pragmatism is Peirce's greatest contribution to the actual development of contemporary philosophy broadly speaking and that his greatest contribution to the development of philosophy in the analytic tradition is in the field of logic.⁷ But if we focus more on what Peirce has contributed that is of importance for current philosophical research, there is a rich vein of ideas in his writings addressing how we learn from experience and how we can rationally parlay that learning into an increasingly comprehensive understanding of the universe and our place in it. It seems to me that Peirce's theory of belief formation, together with his theory of perception, constitutes the basis for a compelling general theory of experience. This theory of experience together with his theory of signs (a deep analysis and classification of the varieties of possible semiosis) and his Existential Graphs (a powerful logic of cognition that Peirce described as a moving picture of thought) provide the components of a general theory of intelligence of significant relevance not only for contemporary philosophy of mind but of considerable importance for psychology and cognitive science and of critical importance for artificial intelligence.

⁷ See my introduction to *Studies in the Logic of Charles Sanders Peirce* for a recounting of Peirce's contributions to logic.

I think this implicit general theory of intelligence is Peirce's main contribution to contemporary philosophy in its ongoing stage of development. But to be a bit more granular regarding Peirce's contributions of contemporary relevance, I would emphasize that philosophers today still have much to learn from his pragmatism, especially his late pragmatism which is fortified by his semiotics and his work on Existential Graphs. I would also single out Peirce's realism (and his critique of nominalism), his abduction (a pivotal contribution to the theory of reasoning from experience), and his fallibilism (an evolutionary epistemological theory that recognizes the importance of communal inquiry and that knowledge is always provisional) as significant contributions. Finally, in the spirit of fallibilism, I should note that others might select different doctrines or notable ideas as of greatest importance for contemporary philosophy, for example, Peirce's phenomenology (phaneroscopy), his late focus on normativity, or several theories and doctrine (notably, his abduction, cosmology, and conception of extended mind) that are increasingly of interest to philosophers of science and philosophers of religion. It is surprising how relevant this 19th century philosopher's ideas are for current philosophy in general.⁸

INTERVIEWERS: American Pragmatism has received renewed attention in the philosophical field, especially at the intersection of the philosophy of mind and cognitive sciences. How do you see this development?

⁸ For a general consideration of Peirce's for contemporary philosophy see Max Fisch's "The Range of Peirce's Relevance" (Fisch 1986: 422–48) and my addendum, "Reconsidering Peirce's Relevance" (Houser 2010).

NATHAN HOUSER: I believe the urgency with which Artificial Intelligence is being investigated and developed has elevated the importance of philosophy of mind and cognitive science quite dramatically. There is a pressing need for a general theory of intelligence compatible with a philosophically grounded theory of mind. A critical feature of cognitive science and AI is their emphasis on the application of their theories to operational systems. From its beginning, pragmatism has been a philosophy deliberately attuned to post-Darwinian evolutionary naturalism consistent with the scientific realism cum instrumentalism of cognitive science and AI. I think the current research focus on intelligence in cognitive science and AI has opened an avenue of relevance for a comprehensive reassessment and integration of several key components of pragmatism, especially its naturalistic theory of mind and its essential interlinking of intelligence with experience. I believe that the deliberate application of pragmatic thought to cognitive science and IA will accelerate for some time and expect that Peirce's pragmatism, probably with some attention to Dewey's, will be found to be of particular relevance.

Semiotic Pragmatism, Philosophy of Mind, Evolutionism

INTERVIEWERS: In your paper "Semiotics as Cognitive Science," you suggest that Peirce's semiotics provide a normative foundation for understanding cognition, unlike the predominantly descriptive approach in cognitive science. Could you, please, elaborate a little more on this?

NATHAN HOUSER: My paper on "Semiotics as Cognitive Science" was written over thirty years ago when cognitive science was only emerging as a discrete area of research. The leading idea at the time was that the mind must be an organic computer and that to understand mental processing it was

necessary to find the right computing model. Cognitive states and mental activity were understood quite syntactically, almost exclusively in terms of internal symbol processing. The research focus seemed to be on building computer programs to operationalize theoretical cognitive or mental architectures. Insofar as cognitive science was concerned with cognitive process in general, regardless of how they might be physically instantiated, I concluded that the aim was to develop a logic of cognition. In pointing out that Peirce's semiotics was normative, not descriptive, I was indicating that it could also be understood to be a logic of cognition, broadly speaking, and not a descriptive, or psychological, account of cognition. This was a point of similarity between Peirce's semiotics and the cognitive science of the day. However, the philosophical base for early cognitive science was analytic philosophy which embraced a rigidly formal (mathematical) conception of logic whereas, for Peirce, the logic appropriate for cognitive science was the branch of the normative science which included semiotics. Furthermore, by virtually ignoring the role of consciousness and by discounting the interactive (two-sided) nature of experience, cognitive science at that time was severely limited in what counted as a mental or cognitive state.

INTERVIEWERS: Do you see Peirce's broader semiotic framework providing solutions to "intractable problems" in cognitive science, such as the frame problem or integrating higher and lower cognition?

NATHAN HOUSER: Yes, I believe that Peirce's broader framework can help provide solutions to problems in cognitive science. The frame problem arose when cognitive science was committed to the symbol-processing model of mind which required that in addition to updating AI programs to represent every cognitive state change, it was also necessary to update all relevant but unchanged states or

background conditions. In complex circumstances or environments that was not achievable. But the frame problem is no longer intractable because cognitive science has moved beyond a strictly symbol-processing model of mentality. One of the ways the frame problem was solved, or resolved, was by recognizing that cognition is necessarily embodied, environmentally situated, and interactive with its external conditions. Background or contextual information can be drawn from those interactions (from experience, Peirce would say) without having to be inferred from a rulebound, preestablished information base. One recognized approach to gleaning information from experience is the statistical predictive model developed by Jeff Hawkins (2022). As far as I know, Peirce's ideas were not pivotal in overcoming the frame problem, except perhaps insofar as some of his contributions to statistical and inductive reasoning have been incorporated into mainstream logic and AI learning strategies. But a great lacuna in cognitive science is the adequate incorporation of Peirce's abduction into its cognition and learning protocols. Abduction is the key to learning from experience. The need to operationalize abduction is a recognized problem, one of particular urgency for AI, but the tendency to regard abduction simply as inference to the best explanation has been limiting. Peirce still has a great deal to contribute regarding abductive learning and reasoning.

Considering more generally what Peirce might still contribute to cognitive science, it is significant that his most enduring objective was to work out what we can learn from experience and how, by deliberate and justifiable inference, we can expand that experiential learning into an extensive knowledge base. With remarkable foresight, Peirce labeled himself a pioneer in opening up the new field of semiotics; I think he was also a pioneer investigator in the field that would one day become cognitive science. I believe that several of Peirce's principal theoretical and research achievements together

constitute a naturalist general theory of intelligence that not only integrates higher and lower cognition but that provides the basis for a richer and more comprehensive understanding of mentality and intelligence than is now guiding research in cognitive science and AI.

To draw a unified general theory of intelligence from Peirce's writings, one must combine his Darwinian inspired doubt/belief theory of inquiry, which holds that the function of natural intelligence is to learn from current experience in order to predict future experience and adjust behavior accordingly, with his theory of perception, which accounts for the progression from sensation to percepts, and from percepts, via abduction, to perceptual judgments, and thus, conceptualization. Another crucial component of Peirce's general theory of intelligence is his theory of signs (semiosis) which treats the full range of intelligence, principally from the standpoint of its formal or structural characteristics. Finally, Peirce's Existential Graphs, with their non-linear diagrammatic syntax, treat conceptual intelligence as an operational system of rational inference. I believe that these constituents can be integrated to fashion a comprehensive general theory of intelligence that will be of fundamental importance for cognitive science.⁹

INTERVIEWERS: You suggest cognitive science could reintroduce a "pragmatic laboratory spirit" into semiotics. What might such a collaborative approach look like in practice, and how could it benefit both fields?

⁹ I first made this suggestion at IMP 23.

NATHAN HOUSER: The laboratory spirit does not necessarily entail a spirit of collaboration. The laboratory spirit is, first of all, a realization that our ideas and theories have, or conceivably have, real world consequences, if they are not pure rhetoric, and that they are fallible and, therefore, always provisional. Secondly, the laboratory spirit is a willingness, even a desire, to put our ideas and theories to the test of experience in the hope that we are and will remain on a path to truth. Peirce's pragmatism incorporates the "laboratory spirit" into his philosophy.

I take a broad view of cross-disciplinary collaboration and include transdisciplinary research whether or not there is active participation of individuals from both or all of the disciplines involved. What is essential is that the research aim is to find a new framework or approach that is beyond the purview of the separate disciplines. Quine's "Epistemology Naturalized" (Quine 1969), is often cited as having initiated the spirit of collaboration between philosophy and science in recent times. It is clear, for example, that Quine had a considerable influence on the career of Daniel Dennett, who is a good example of a philosopher whose work (not as a semiotician, of course) is collaborative with cognitive science. Many earlier examples can be found, Aristotle being among the earliest. Peirce's 1892 "Man's Glassy Essence" (EP1: 334–351) is good example of a work involving collaboration between philosophy and the science of his day. Peirce was both a philosopher and a scientist so, in a sense, most of his work was a sort of collaboration between philosophy and science—and I suppose the same can be said about Aristotle. Peirce knew first-hand how philosophical theorizing can benefit from coordinating with relevant scientific theory and practice and, conversely, how scientific theorizing can benefit from philosophy of science.

Jesper Hoffmeyer was a semiotician who was also a biologist, and his transdisciplinary research propelled the nascent field of biosemiotics into a lively hybrid discipline. I think biosemiotics exhibits both how a collaborative approach looks in practice and how it can benefit both fields. This kind of transdisciplinary collaboration is already underway between semiotics and cognitive science with research in the emerging field of cognitive semiotics.¹⁰ Whether or not cognitive semiotics becomes a hybrid discipline of its own, it is a good example of the kind of collaborative research I was hoping for in 1992 when I wrote "Semiotics as Cognitive Science." An impressive example of how this kind of collaborative research can advance both semiotics and cognitive science is the work of Terrence Deacon, especially his elaborate theory of how mind emerged from matter (Deacon 2012).

INTERVIEWERS: The concept of abduction plays a central role in Peirce's semiotic pragmatism. In your opinion, what are the most significant aspects of this notion for contemporary philosophy of science?

NATHAN HOUSER: It is important to bear in mind that science, like perception, is a process fundamentally involving cognitive engagement with ongoing experience. Learning from experience is the sine qua non for acquiring and advancing knowledge—for intellectual development in general and for the advancement of science in particular. Clearly this is of great importance for philosophy of science. For too long, the protocols of analytic philosophy constrained theory of knowledge and scientific method to models limited to formal (mathematical) deductive and inductive logic. Peirce, who was deeply learned in the history of logic and of science in general, recognized that the link between experience (as physical

¹⁰ The first known use of the name "Cognitive Semiotics" is in Thomas C. Daddesio's *On Minds and Symbols* (1995).

engagement with the world) and cognition, is the crucial nexus for intelligence. It is in the process of perceiving that sensory engagement with the world is conceptualized and, according to Peirce, that is possible only if the sensory/perceptual process involves elements of generality. The form of the inferential process that yields perceptual judgments (by associating concepts with percepts) is abduction:

The surprising fact, C, is observed;
 But if A were true, C would be a matter of course.
 Hence, there is reason to suspect that A is true. (EP2: 321)

This is a deceptively simple form of argument which, if considered with the cool regard of a mathematical logician, appears to be remarkably weak and difficult to understand as a form of reasoning that could advance knowledge—in fact, for those of us who studied fallacies in informal logic courses, it appears to be a clear case of affirming the consequent. Yet Peirce insisted that abduction is the only form of inference by which new explanatory information (hypotheses or predictions) can be introduced into rational cognitive processing. It might be objected that of course there must be a cognitive process by which A comes to mind conceptually and is associated with the surprising fact, C, but that is a matter for psychology or neuroscience, not logic. Peirce would advise the objecting logician not to yield so quickly to descriptive science but to investigate the inferential or quasi-inferential cognitive processes that can plausibly shape the perceptions conceptually. As Peirce pointed out, using optical illusions as examples, we sometimes perceive conceptually, not as matter of deliberate judgement but because of a disposition (CP 5.183). You may immediately perceive the drawing that Wittgenstein made famous as a rabbit while I may be disposed to immediately recognize it as a duck.

Insofar as abduction has been taken up by philosophy of science, it is usually understood to be inference to the best, or most plausible, explanation. Jaakko Hintikka has persuasively argued against that understanding of abduction (Hintikka 1998). To understand Peirce's abduction, at least in its mature form, it is essential to bear in mind that the legitimacy of abduction depends on "different principles from those of other kinds of inference" (CP 6.525). Hintikka understands Peirce to have broken with the traditional idea that rules of inference depend on the premise-conclusion relation alone and that he "is considering also rules or principles of inference . . . [that] are justified by the fact that they exemplify a method that is conducive to the acquisition of new knowledge" (Hintikka 1998, p. 512). According to Hintikka, "an abductive inference is to be judged by strategic principles rather than by definitory (move-by-move) rules" (Hintikka 1998, p. 513).¹¹ Hintikka's analysis is consistent with the idea that abduction is a logic that formalizes the process of learning from experience rather than a formalization of a unique rational argument type. Viewed in this way, abduction is key to cognitive logic, an emerging area of research that draws on cognitive science and AI as well as logic. I believe that abduction is the crucial cognitive operation that links conjecture with non-cognitive experience and, as such, furnishes science with its most basic body of information, a body of information that comes as close as possible to being pre-theoretical.

INTERVIEWERS: In your dialogue with Daniel Dennett's ideas (Pragmatism and the Loss of Innocence), for instance, you suggest that pragmatism may be even more threatening than Darwinism to traditional

¹¹ Hintikka believes that Peirce's abduction is best understood in terms of game theory. He also suggests that the game theoretic conception of strategy is important for understanding how Peirce's concept of habit differs from more customary views.

Western values. Could you elaborate on how pragmatism challenges this traditional view and in what way it becomes "disturbing" in the context of the evolution of ideas and Western thought?

NATHAN HOUSER: It has been some time since I've thought about pragmatism, especially Peirce's pragmatism, in this way, but I think the threat of pragmatism is not to the enlightened Western values that include a commitment to individual human rights, scientific rationalism and secularism, and democracy and rule of law, but to the much more conservative and illiberal values that have always remained influential in the West but which have, in present times, grown in power as the Western commitment to democracy and secularism has weakened and nationalism and irrationalism surge. It is to these more conservative and illiberal elements of Western thought and culture that pragmatism is threatening.

Why pragmatism is more threatening than Darwinism to this segment of Western culture is that it refocuses Darwinism more directly on the realm of ideas and values. Peirce thought of pragmatism as the lesson of Darwin for philosophy. In discussing the first paper of Peirce's *Illustration of the Logic of Science* series, in which Peirce first introduces his pragmatism to the public, Max Fisch explains how Peirce viewed pragmatism as following from Darwinism: "each chief step in science is a lesson in logic... The most recent chief step was that taken by Darwin... pragmatism itself is the lesson now to be drawn" (Fisch 1986, p. 286). To some extent, the dangers of pragmatism for the more conservative and illiberal strain of Western civilization are the same as those associated with Darwinism, but somehow it seems easier for people to discount or ignore the implications of disagreeable scientific theories than it is to ignore the implications of disagreeable philosophical views. Consider, for example, the conflict between

science and religion, which has been debated at least since the Enlightenment. From a strictly logical, or objective, point of view, there is a great deal of tension between the implications of modern science and many dominant and impactful religious beliefs, yet that conflict seems to be effectively resolved by relegating science and religion to different spheres of life. In effect, the Kierkegaardian distinction between objective and subjective truth seems to have been generally accepted and gives us permission to, as it were, have it both ways. What is common to most religions and the conservative and illiberal stream of thought within Western culture is the view that there are universal truths and values that are absolute and permanent and that those truths and values are not something to be learned in the give and take of experience but by the authoritative mandates of revered traditions or institutions (or of individuals supposed to be somehow endowed with unassailable knowledge of those truths and values).

Pragmatism, however, purports to situate our beliefs and values squarely in the Darwinian world of chance and constant change, a world in which everything is continuous and always evolving and nothing is permanent. But unlike science, which tells us that this is the world we live in, pragmatism tells us that the truth or falsity of all our beliefs must be understood in relation to this Darwinian world—that conceivability, itself, is fundamentally linked to our connection with this natural world and that we are deluding ourselves if we imagine that we are transcendent beings with true beliefs about a world beyond nature. Beliefs of that sort can only be supported by what Dennett calls skyhooks—their support is imaginary. Peirce allows that such beliefs can have aesthetic appeal and, in that sense, be satisfying, but pragmatism cannot sanction them as truly meaningful (unless they are understood in relation to one's feelings and not to purported objects beyond the world of natural experience). So pragmatism not only

endorses the thoroughgoing naturalism of Darwinism, but also challenges basic tenets of the conservative and illiberal, and apparently surging, stream of Western culture.

INTERVIEWERS: When comparing the impact of Darwinism and pragmatism, you mention that both are unsettling due to their naturalistic and evolutionary character. In what sense do you see pragmatism as a "radical evolutionism," and how does this affect our understanding of philosophical issues such as human agency and morality?

NATHAN HOUSER: There are several respects in which pragmatism can be said to be more radical than Darwinism by applying its fundamental insight and logic more broadly. As I pointed out in my reply to the preceding question, Peirce quite straightforwardly applied the Darwinian theory in developing pragmatism. First, following Alexander Bain, Peirce equated belief with a disposition or preparedness to act and doubt with the state of anxiety and uncertainty resulting from a failure of belief to address experience as expected. In consequence of what Bain described as the “mental shock” resulting from “a breach of expectation,” a process of belief change ensues (a process aimed at realigning beliefs with experience) which Peirce called inquiry. Peirce applied Darwin’s idea of natural selection to inquiry, producing an evolutionary “struggle for survival” theory to account for what Fisch describes as “the adaptive character of intelligence” (Fisch, 1986, p. 100).¹² Mentality was now fully included within the evolutionary purview making pragmatism the lesson of Darwin for philosophy.

¹² The quotations from Bain in this paragraph are taken from Fisch 1986, p. 86.

Another way in which the evolutionism of pragmatism, at least of Peirce's pragmatism, is more radical, or extreme, than Darwin's is that it is applied to the cosmos and the development of natural laws. Today, as in Peirce's day, the usual view in cosmology is deterministic, holding that natural laws are necessary and timeless, and that they hold without exception. But as early as the summer of 1886, Peirce speculated that the universe is "progressing from a state of all but pure chance to a state of all but complete determination by law" and, therefore, "we must suppose that there is an original, elemental, tendency of things to acquire determinate properties, to take habits." Peirce said that this hypothesis was "calculated to account, or all but account for everything in the universe except pure originality itself" and that his hypothesis should be tested to see "how far it would account for and explain the observed characteristics of the laws of nature."¹³ For the remainder of his life, Peirce maintained the thesis that laws of nature are emergent outcomes of evolutionary development. Speculation that natural laws are emergent is beginning to be seriously considered in contemporary theoretical physics.

Yet a third way in which the evolutionism of Peirce's pragmatism may be said to be more radical than Darwinism, is that it extends to axiology by applying the evolutionary model to values and ideals. Especially in his later years, Peirce devoted concentrated attention to the three normative sciences, aesthetics, ethics, and logic (generalized to semiotics), that constitute the heart of philosophy. In 1904 he advised John Dewey that he believed the advancement of normative science to be "the greatest need of our age" (CP 8.239). Of course, normativity is not just a matter of what we should feel, do, or think in given circumstances but of the values that serve as norms to govern our behavior and the ideals that values uphold. Often the most valued ideals associated with the normative sciences are identified as

¹³ The quotations in this paragraph are from W5: 293. See Houser 2014 for discussion of Peirce's cosmology.

admirability, moral goodness, and reasonableness, but to function as values that guide deliberate behavior, values must represent the ideal behaviors they nurture. In other words, values, as normative guides, must be signs that align behavior with ideals. This suggests that normative, or value, semiosis is a process of development toward habits which bring behavior into alignment with valued ideals. I grant that this is a bit sketchy (my views on axiology are unsettled) but it is not in doubt that pragmatism extends the evolutionary paradigm to values and ideals. As Peirce remarked: “[I]n these days of evolutionary ideas... when these ideas of progress and growth have themselves grown up so as to occupy our minds as they now do, how can we be expected to allow the assumption to pass that the admirable in itself is any stationary result?” (CP 1.614).

Regarding the more specific question of how the “radical evolutionism” of pragmatism affects our understanding of human agency and morality, I think what I have said above somewhat addresses this query. But, more specifically, regarding agency, we might say that pragmatism returns agency to humans. Why? Because pragmatism is a thoroughgoing naturalism, leaving no room for absolute law or for moral principles supported by skyhooks (there is no room for creationism, except in a Pickwickian or allegorical sense), and because pragmatism holds that nature is not deterministic, leaving room for teleological growth and development. We can improve our characters by adopting ideals that alter our habits of action and, over time, become established new patterns of belief. This is all relevant to the question of morality but the key point, I suppose, is that pragmatism does not embrace absolute moral laws. Values grow and that includes moral values. Moral values grow in communities and become entrenched in social habits and traditions. According to Peirce, morality is essentially conservative: “Morality consists in the folklore of right conduct. A man is brought up to think he ought to behave in

certain ways. If he behaves otherwise, he is uncomfortable. His conscience pricks him. That system of morals is the traditional wisdom of ages of experience” (CP 1.50). Even though Peirce held that morality is “a means to good life,” he believed that “in more ways than one an exaggerated regard for morality is unfavorable to scientific progress” (Ibid). Many of these tenets of pragmatism and of Peirce’s pragmatic philosophy are objectionable to the conservative and illiberal contingent of Western culture.

INTERVIEWERS: With regard to Peirce, to what extent do you see contemporary theories of philosophy of mind, such as Dennett's functionalism, as compatible with Peirce's semiotic pragmatism? Are there any significant points of convergence or tension?

NATHAN HOUSER: Dennett is often said to be a pragmatist, or a quasi-pragmatist. There is certainly some interesting overlap between Peirce’s pragmatism and Dennett’s functionalism. Both doctrines are pointedly anti-Cartesian and both regard intelligence to be dependent on interactive processes. Both are emphatically evolutionary (and in Dennett’s later work, this brings him somewhat closer to pragmatism because of a growing emphasis on the impact of environmental interactions). And they both define mental states in relation to practical effects (in Peirce’s case, conceived effects) or functional roles. Dennett’s intentional stance, which identifies mental states in relation to behaviors, resembles the pragmatic maxim. His functionalist view of mind as an information-processing system, as distinct from an explicitly neuro-processing system, bears similarity to Peirce’s view of mind as a sign-processing system. And probably there is a way to interpret Dennett’s multiple drafts model of mental processing in a way that somewhat overlaps with Peirce’s dialogical, even communal model, of the development of

thought. But there are significant differences and tensions between Dennett's functionalism and Peirce's semiotic pragmatism. The interactive process of Dennett's functionalist account is essentially, especially during his early predominately functionalist period, one involving computational or data-processing interactions (mind is essentially a computer program). For pragmatism, in general, mentality is necessarily interactive with the environment. For Peirce, we might say that the relevant interactive process is semiotic, linking intelligence with experience in full. But the greatest tensions between Dennett's functionalist philosophy and Peirce's pragmatic philosophy relate to their opposing views on consciousness, teleology, and ontology.

Although there are some similarities between Dennett's overall theory of consciousness and Peirce's, a telling difference is Dennett's contention that consciousness is a narrative construct, a user-illusion, and his rejection of qualia effectively challenges Peirce's entire semiotic theory of mind by eliminating the qualitative connection with experience. Regarding teleology, Dennett eventually warmed slightly to it, noting that "a vague squeamishness" about teleology "leads some scientists to go overboard avoiding design talk and reason talk" (Dennett 2017, p. 51) but he never budged from his commitment to the causal closure of the physical. This, too, is in stark contrast with Peirce's semiotic pragmatism because semiosis is fundamentally teleological. Related to this tension over teleology is a fundamental disagreement over abstract entities. For Dennett, they are useful fictions that have no scientific causal role to play in the course of events. His view is basically anti-realist and instrumentalist. Peirce, on the other hand, was a comprehensive realist who held that physical existence is not the only form of reality and that not everything that happens in the physical realm can be explained by physical

laws and prior physical events. General laws and abstract entities have a non-existent reality but can really influence the course of events teleologically.

INTERVIEWERS: How can Peirce's semiotic pragmatism contribute to contemporary debates on consciousness, cognition, and intentionality, especially in contrast to Dennett's functionalist naturalism?

NATHAN HOUSER: I will address some of the ways Peirce's semiotic and realistic pragmatism can contribute to philosophy of mind and cognition in response to the following question, but, in some respects, Dennett is a special case. Over the years, Dennett kept revamping and jiggering his system to address problems that arose and to extend its explanatory scope. Many of Dennett's refinements seemed to admit, by a sort of sleight of hand, more of a Peircean style metaphysical realism into his ontology. One of Dennett's later refinements was to adopt Wilfrid Sellars' idea of the *manifest image*, "the world according to us," to characterize the world of everyday experience. This is the world of minds and consciousness that anchors "our interactions and conversations" (Dennett 2017, p. 61). The ontology of this manifest image world includes mind, consciousness, qualia, and other constituents important for Peirce's semiotic pragmatism. But the "sleight of hand" is that the ontology of this manifest image world is not the ontology of the scientific world—the manifest image world is a user-illusion. The qualia of the manifest image world are only just "artifacts of imagination" (Dennett 2017, p. 354). In the end, Dennett anchors our lived world, the manifest image world, and all its constituents, to the workings of our brains. In my view, Dennett was one of the great philosophers our time and part of the importance of his contribution was how successful he was in fitting up his material and nominalist world with the

trappings of Peirce's richer semiotic realist world. But somewhat curiously for a philosopher who was so averse to the fictions of religious belief, he portrayed our lived world, our world of conscious experience, as an illusion. The great contribution of Peirce's semiotic pragmatism is to unify the world of science with our world of everyday experience, a unified world in which our feelings are real and general conceptions and abstract objects can really influence events and help shape the future.¹⁴

INTERVIEWERS: How do you believe Peirce's ideas can influence contemporary debates in the philosophy of mind and current studies on cognition?

NATHAN HOUSER: I addressed this question to some extent in my responses to the second set of questions above. The constituent theories that make up what I have called Peirce's general theory of intelligence are each relevant to current debates in philosophy of mind and cognition studies. These component theories are Peirce's theory of perception which features abduction, the only form of inference that can actually introduce ideas (generate new information); his doubt-belief theory explaining how beliefs (cognitive habits of action) develop in the give and take of experiential interactions; his theory of signs, the most comprehensive analysis and classifications of the varieties of possible semiosis (mental processes) available; and his Existential Graphs (a powerful non-linear logic) designed to formalize the process of thought in action. My guess is that Peirce's semiotics, with its pragmatic process orientation and its incorporation of a naturalized teleology, will eventually have considerable influence on philosophy of mind and cognition studies. Deacon's semiotic-based research on the natural

¹⁴ Ref to Vicissitudes.

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evolution of mind (Deacon 2013), and even Dennet's late incorporation of Jakob von Uexküll's *Umwelt* and Peirce's type-token distinction into his philosophy (Dennett 2017, pp. 78–79 & 189) suggest that this is beginning to happen. I also expect that Peirce's Existential Graphs will have an increasing influence on developments in cognitive science and AI. They have already played a role in the development of AI through the work of John Sowa on knowledge representation and natural language processing and Sowa is currently working on Peirce's unfinished extension of EG intended to function as a logic of investigation.

Finally, it is noteworthy that all the problems of philosophy that deal with meaning, belief, truth, denotation, intentionality, representation, reference, interpretation, language, and so on, have been rigorously investigated for years by philosophers in the analytic tradition but almost always without reference to or theoretical guidance from semiotics, and always from the standpoint of an inherent nominalism (tending to conflate reality with existence and denying any place to more than a nominal teleology in scientific explanation). Were Peirce's realist semiotic pragmatism to become a mainstream movement, as I believe it will, the analytic treatment of all these problems will have to be examined from the semiotic pragmatic perspective. I will say more about this in my reply to the final question about Peirce's legacy.

Peirce's Legacy

INTERVIEWERS: What do you consider to be Peirce's enduring legacy for future generations of semioticians and philosophers?

NATHAN HOUSER: Before discussing Peirce's legacy, I'd like to make two points about legacies in general. The first is expressed in a passage from Augustus De Morgan's *A Budget of Paradoxes*: "All the men who are now called discoverers, in every matter ruled by thought, have been men versed in the minds of their predecessors, learned in what had been before them" (De Morgan 1915, p. 5). Peirce was a committed adherent of this view. But even though all intellectual legacies have roots that have nurtured them, having emerged in a community of investigation, it is also true that it is usually lone individuals who break free from the current of thought with abductive insights that set thought on a new course. Peirce was such an individual.

My second general remark about legacies is expressed in a remark by American philosopher, Horace Kallen, about why he believes one's place in history is, to some extent, a matter of accident:

Somebody gets picked up; he has vocal and persuasive disciples; a school gets set up; reports are written—they may be forgotten and lost altogether, or they may be carried on by organizations of power, the way Shakespeare is carried on, the way the Bible used to be carried on. Who reads the Bible now since the Church has lost control of education? And who would be reading Shakespeare now if there were not entrance examinations for college requiring the reading of two or three of Shakespeare's plays? The vehicles of communication and the relevancy of selected material are what make the difference. What was Peirce's place in the history of philosophy? What was it in 1910? And then along came these kids who were sure that they knew more about Peirce than Dewey and James did, and provided the correct view of Peirce, having edited his works; and Peirce now has a vogue. Well, why does he have a vogue? Why Plato or Aristotle or anybody? Somebody chooses to push the damn thing (Lamont 1959: 89-90).

Of course, philosophical ideas and theories must have more than “a vogue” to achieve lasting relevancy, to become part of an enduring legacy, but to effectively enter mainstream thought they do—inherently good ideas don’t just blossom on their own or rise up out of their semiotic graveyards just because they are relevant to new debates. To “take hold” and, more importantly, to persist, they have to be broadcast widely, then vigorously cultivated and well fertilized—in a word, they must be promoted. And they must be promoted by dedicated experts who not only comprehend the ideas and theories, but who are capable of explaining their relevance to mainstream ideas. I believe, perhaps for the first time since Peirce’s death, the international community of Peirce scholars is large enough and diverse enough to usher some of Peirce’s greatest ideas and theories into mainstream thought where they can finally reveal their true worth and become part of an enduring legacy. But Kallen was right: Peirce’s ideas cannot do that on their own.

As with many of our greatest philosophers, Peirce made numerous contributions of lasting significance (although what is of lasting importance may be relative to the duration of a particular paradigm). Part of Peirce’s legacy is largely unattributed to him. Consider, for example, his many contributions to formal logic which significantly but silently influenced its development. In 1982, more than a century after his first major contribution to symbolic logic—his “Description of a Notation for the Logic of Relatives” (W2:359–358), and more than half a century after his death, Hilary Putnam expressed his surprise upon discovering “how much that is quite familiar in modern logic actually became known to the logical world through the efforts of Peirce and his students” (Putnam 1982, p. 295).¹⁵ But Peirce’s

¹⁵ Alonzo Church, in his authoritative “Bibliography of Symbolic Logic” (Church 1936), lists Peirce as the twenty-eighth contributor to post-Aristotelian symbolic logic, nine places behind Boole and eight behind De Morgan. Church lists twenty-nine contributions by Peirce, more than three times as many as

work is becoming more widely known and his legacy for semioticians and philosophers is coming more into focus.

In my answers to the second set of questions, I pointed out that I believe Peirce's major historically settled contributions to philosophy are pragmatism and his multiple contributions to logic. I count pragmatism as an indisputable part of his legacy because of his pivotal role in the founding of the pragmatism movement, by contributing the core theory, even though Peirce's distinctive variant has not yet become widespread. Peirce's historically settled contributions to logic are those recognized from the standpoint of the analytic tradition: his contributions to 20th century symbolic logic, or exact logic as Peirce called it. These are the contributions that Putnam came to recognize were substantial. Notably, it is Peirce's graphical logic, EG, that is coming to be recognized as perhaps his most important contribution to logic, going forward, because of its usefulness for knowledge representation, non-linear information processing, and, if John Sowa is right, advances in the representation of modal inference. And the logic of abduction, too, is now recognized as pivotal for the development of cognitive logic. But Peirce's logic, which he regarded as a normative science, covers a lot of intellectual ground. The other substantial part of the broad science Peirce counted as logic is his semiotic. Like the rest of logic, semiotic is a study of inference and inference types, but the focus is on inference from signs. Signs instantiate Peirce's thirdness, which is to say they are fundamentally about something for someone (or relative to an interpretant). Signs exhibit the aboutness Brentano identified as the mark of the mental but more clearly reveal the representative or mediating character of mentality. Although Peirce's semiotic has

anyone who preceded him except for Leibniz, who is first on Church's list with forty contributions. Frege is the forty-ninth logician to be listed, twenty-one places after Peirce and following Peirce's initial contribution by twelve years.

often been characterized as a classification of sign types, when signs are understood to be inferential, or quasi-inferential, mediational processes (semiosis), what is being classified and investigated are the possible types of cognitive functionality, or cognitive processing. The classification of signs, then, might be viewed as a mapping of mental space, and the investigation of signs as the study of mentality. Understood in this way, Peirce's theory of signs is likely to be of major importance not only for semioticians (with a technical and formal bent) but for cognitive science and AI. Given that Peirce was the originator of the field of semiotic (or semiotics in current parlance) as I've described it, the field of study as a whole is part of Peirce's legacy.

Another major contribution of Peirce's, one yet to be fully constituted, is his general theory of intelligence. I have discussed this above (in the second set of questions and in the second and final question from the third set), so I won't say more here except that I predict that, once the component theories are brought together and adequately elaborated into a comprehensive and unified general theory, it will be seen to be of great importance for philosophy of mind, cognitive science, and AI, and will be counted as a significant part of Peirce's legacy.

Finally, as I pointed out above, Peirce's distinctive variant of pragmatism, especially after he more patently fused his pragmatism with his semiotic theory, has not yet become widespread. In my response to the final question from the third set, I speculated on what would happen if Peirce's semiotic pragmatism were to become a mainstream movement. In John Deely's imposing *Four Ages of Understanding*, he reframed Western intellectual history to highlight the conceptual focus of each age and to feature the development of sign theory throughout the history of Western thought. Today we are

living in what Deely speculates is a paradigm transition period between what he labels “the modern age,” with its intellectual focus on *ideas*, and what he labels “the postmodern age,” with its focus on *signs*. Peirce’s semiotic philosophy, with its embrace of critical realism, is seen as the catalyst for the great paradigm shift Deely anticipates.

The modern age, the way of ideas, has been typified by dogmatic commitment to physicalism and the causal closure of the physical, a rejection of teleology, and a virtual dismissal of values as philosophically irrelevant. These dogmas have been nurtured by an unyielding nominalism that accepts no reality beyond the existent, and a heavy-handed application of Ockham’s razor. Peirce’s semiotic pragmatism challenges all these dogmas: signs have a reality that is not reducible to their physical embodiment and sign action (semiosis) requires formal or final causation and is not deterministic. Peirce’s normative sciences are given a central place in his philosophy. The nominalism of Ockham is rejected and replaced with a form of metaphysical realism that does not equate reality with existence, and that acknowledges the reality of generals and laws. But for this new age of understanding (the way of signs) to move beyond its period of incubation, the advantages of semiotic pragmatism will have to become more apparent to researchers in philosophy, cognitive science, AI, and the many disciplines that deal with semiotic problems (even if they don’t realize it). In a word, semiotic pragmatism will have to penetrate deeper into the philosophical zeitgeist. Unlike the rest of what I have identified as Peirce’s enduring legacy¹⁶ (the pragmatic movement, his contributions to formal logic, the field of Peircean semiotics, and his general theory of intelligence), I am far less confident that his semiotic pragmatism will advance, beyond being a profoundly promising theory, to become the grounding philosophy for the new

¹⁶ Always bearing in mind that others may understandably identify other of Peirce’s contributions as part of enduring legacy.

age of understanding that Deely predicts. But even if the paradigm shift to the age of signs fails to materialize, philosophers and semioticians will continue to do their work and Peirce's semiotic pragmatism will guide their way forward to more enlightened comprehension of many intellectual conundrums such as the mind-body problem and why power without an idea of the good to guide it is the bane of civilization.

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