

Semiotics 2021: The year in review

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Introduction

With an aim to coalesce the state of the art in semiotics, this essay is the first in a series of annual reviews planned between *Semiotica* and *Sign Systems Studies* (henceforth, SSS), the two longest running international journals in semiotics. If interest grows in the project, it may be possible to expand the scope of the series to include other journals in semiotics (see Kull and Maran 2013 for a worldwide overview of journals in semiotics). The aim of the review is to provide a thematic summary of related research paths taken in the respective journals during the previous year (in this case 2021). Since all such papers have already been vetted by the peer review processes, our aim is not critically-oriented; instead, we wish to indicate various theoretical and topical parallels, overlapping intersections and directions that can be identified in the previous year's output, without attempting to make connections between each individual article.

These limitations are in place for two key reasons. The first has to do with the amount of research published: *Semiotica* published six issues with a total of 79 research articles in 2021, while SSS published two double issues with 26 articles total. Thus, in these two journals alone we find more than 100 research articles published in the previous year. The second reason has to do with our thematic approach, which aims to gather diverse papers into groups, which could be considered together. For this first review, we have settled on five thematic groupings which were focal in these two journals in 2021:

- (1) **Diagrammatic models of the structure of meaning.** The concept of diagram and its potential for modelling semiotic phenomena is present throughout both journals in 2021; thus, it is a good focal point to begin our review.

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- (2) **The face as a diagrammatic mask of communicability.** Massimo Leone and Remo Gramigna guest edited a special issue of *SSS* (3–4) entitled “Cultures of the face”. In this volume, the face appears in all its diversity, from the signifier to the unsignifiable.
- (3) **Advances in Peircean semiotics.** Understandably, the complex and multifaceted work of C. S. Peirce is central to contemporary semiotics. It is still to be wholly understood and unpacked. Both *Semiotica* and *SSS* authors relied upon Peircean insights extensively.
- (4) **Advances in Greimassian semiotics.** In 2022, thirty years have passed since the death of Greimas. While he is not as ubiquitous as Peirce in contemporary semiotics, his influence can still be felt and his logical theories on signification are still relevant for the semioticians of today.
- (5) **Anticipating the future.** How to model the future and envision a different future is one of the primary tasks for semioticians in times of crises. A special issue of *SSS* entitled “Anticipation and change” (1–2), guest edited by Lauri Linask, Inesa Sahakyan and Aleksei Semenenko, deals with the potential contributions of semiotics’ scholars in this area.

These, then, are the five non-exhaustive groups we have identified. Left out of this list, a special issue of *Semiotica* (No. 240) on Jerzy Pelc (1924–2017) merits a mention. In his introductory editorial note, Tadeusz Ciecierski (2021a) provides background information about Professor Pelc. The latter received his PhD from the University of Warsaw in 1951 where he was named a Full Professor in 1979. He was a co-founder of the Polish Semiotic Society (1968), and became its Secretary and President until 2011. He authored numerous articles during his long and prestigious career at the University of Warsaw. Ciecierski (2021a: 3; see also Ciecierski 2021b) notes that in some of his studies, Pelc formulated what he labelled “a functional approach to logical semiotics of natural language”, which meant that “the study of linguistic expressions should always take into account the manner in which such expressions are used”.

The special issue contains seventeen research articles by twenty prominent scholars of language and meaning from the Czech Republic, France, Israel, Italy, Poland, Spain, Turkey, and USA. It should be noted that the very first issue of *Semiotica* contained an article by Pelc (1969) entitled “Meaning as an instrument”. A comprehensive bibliography of Pelc’s work is available in Jadacki and Strawiński 1996 and Ciecierski 2017.

But let us now get to the meat of the review, beginning with diagrams and concluding in the future.

Diagrammatic models of the structure of meaning

Stjernfelt (2000: 357) observed more than two decades ago that “[...] the diagram concept plays a central role, not to say *the* central role in the mature Peirce’s semiotics” (original emphasis; F. N., O. P.). The diagram is an icon, and one of three icon types, the others are images, and metaphors (Stjernfelt 2000: 358). The diagram concept also played a central role in the past year’s research in semiotics. The winners of the *Mouton d’Or* Award for Best Article in *Semiotica* for 2021 were Guy Clarke Marshall and André Freitas for their essay entitled “Measuring diagram quality through semiotic morphisms”. In this study the authors point out the following:

Through application of category theory to the Peircian triadic model, we propose a set of quantitative quality measures for diagrams, and a framework for their assessment, based on the properties of their encoding, pragmatic and perceptual morphisms. These measures include diagram complexity, utility, aesthetics and expert assessment of semiotic content, together with qualitative feedback. We consider the diagrams as an aid to cognitive processes, rather than a purely communication media. This utility-focused perspective on diagram quality dimensions allows for fresh insights into the creation of effective diagrams. (Marshall, Freitas 2021: 125)

Effective diagrams, according to Marshall and Freitas (2021: 135), possess the following qualitative dimensions: completeness, unambiguousness, meaningfulness, and correctness. Furthermore, pragmatic quality dimensions feature simplification, essentialness, inferrability, and aestheticism (Marshall, Freitas 2021: 139). The authors employ the concept of morphism derived from mathematics, namely category theory, to preserve structure from one structure to another of a similar kind (Vickers, Faith, Rossiter 2013; Goguen 1999; Goguen, Harrell 2005).

In their summative statement about diagram quality measures, Marshall and Freitas (2021: 141) make the following observations about the determination of the quality of a diagram:

- (1) Diagram complexity = count of diagrammatic elements
- (2) Diagram pragmatic utility quality = correct response rate/mean response time (for a specific task)
- (3) Diagram pragmatic aesthetic quality = Nešetřil’s (2005) Combinatorial Entropy
- (4) Diagram semiotic quality = Correct, Meaningful, and Unambiguous mapping expert assessment
- (5) Diagram feedback = qualitative desirability feedback from users

The essay provides writers, researchers and creators with a heuristic for creating effective diagrams, a common property of many semiotic essays. Moreover, it allows researchers to make critical assessments of diagrams in extant literature.

In their important related article on logical models of the elementary structure of meaning, Hébert and Poirier-Roy (2021) provide a comprehensive discussion of the logical semiotic models of meaning. The authors provide a detailed analysis of each model (visual or geometric structure, constitutive elements, operations, metaterminology, and so forth). They also consider additional models, e.g. the pentalemma (Chinese philosophical model), *catuskoṭi* (Buddhist model, see also Hébert 2011). The authors discuss in great detail how to decide which model is best (*décidabilité*). They also consider the polemic between a dyadic and a triadic semiotic model and any other basis. The authors observe that the approaches to a decision-making process may be direct or analogical. Their essay demonstrates that diagrammatic models of meaning are both varied and an essential component of the semiotics of signification.

Together, the articles by Marshall and Freitas (2021) and Hébert and Poirier-Roy (2021) provide scholars with tools for the evaluation of the ubiquitous diagram found in so many semiotic studies. Moreover, these two essays on diagrams provide researchers with the tools to produce meaningful and insightful semiotic diagrams that enlighten the reader.

Several articles that appeared in *Semiotica* in 2021 deal directly or indirectly with diagrammatic representations of specific topics. Noury Bakrim utilizes diagrams to illustrate the complex interaction in speech utterances that involves what the author summarizes in the following terms: “[pragmatics] raises [...] the question of meaning dynamics and bifurcation between three important components: *intentionality*, *physiological/neurobiological embodiment* and *the logical-mathematical structure* of any uttered proposition within a natural language (diversity)” (Bakrim 2021: 167; original emphasis, F. N., O. P.). Clemmer (2021) examines Peirce’s Syllabus, i.e. an upside-down triangle with a series of ten boxes. Clemmer (2021: 268) then provides a diagram of the syllabus. Irit Degani-Raz (2021) employs spatial diagrams to illustrate their use and the effect on the audience to allow the spectators to understand the interactional laws that undergird a playwright’s creativity. Yufei He (2021) uses diagrams to illustrate four essential changes in animation, namely, inclusion, movement, illumination, and transformation to illustrate specific scientific phenomena. Yi Jing (2021) considers how visual affect is expressed in cinema based on an animated film and a live action film. The author provides a detailed diagrammatic account of how affective meanings are conveyed in motion pictures. This study has a subsidiary effect for use in acting classes. Of special interest is the use or non-use of interjections

in subtitled films. Jing (2021: 104) provides an explicit set of facial and bodily realizations of six basic affective modes (disgust, anger, happiness, sadness, surprise, fear) through precise descriptions of their positioning so that students can imitate these meaningful gesticulations

Yanfei Zhang and Shaojie Zhang (2021) re-examine Ferdinand de Saussure (1916), whom the authors believe to have been misinterpreted by cognitive scientists such as Ronald Langacker (2008), and they offer explanations for the confusion by using some of Saussure's original diagrams. Michael Ranta uses a diagram to explain pictorial narration, e.g. serial pictures, single pictures, and monophasic pictures that reduce an entire story to a single picture (Ranta 2021: 3). The author provides a modified diagram of pictorial narration between producer and recipient based on Sonesson (1999) to illustrate the process of comprehending a visual story (Ranta 2021: 16). Daniel Candel (2021) examines literary manifestations of evil including the five-factor model of personality (McRae, Costa 2013), the "dark triad" model (Paulhus, Williams 2002), and the nature versus society model (Eagleton 2010, Midgely 1984) through the use of diagrams. Mirko Cerrone and Nelly Mäekivi (2021) employ multiple diagrams to elaborate their zoosemiotic model of a theory of transactional communication in animals other than humans (Barnlund 1970) and Jakob von Uexküll's *umwelt* theory (1909, 1921) to produce a hybrid communication model. Sergio Torres-Martínez (2021b) examines Wittgenstein's (1984[1922], 1984) philosophical methodology to determine its relevance for semiotics. The author then introduces potential applications of Wittgenstein's concepts of complex, rule-following, and language games to a video poem and a laser-beam-guided missile. Those articles published in *Semiotica* with diagrams in general, correspond to Marshall and Freitas's (2021: 141) designated features of a quality diagram (complexity, pragmatic unity, semiotic quality, diagrammatic feedback).

Diagrams thus allow the researcher to evaluate the concepts discussed in extant semiotic scholarship and to ascertain its worth and appropriateness to specific topics. Furthermore, knowing how to create a technical representation that encapsulates a specific phenomenon or process enhances the reader's ability to understand the significance of the author's meaning visually. Although computer technology now facilitates the generation of complex diagrams exemplified in Farias and Queiroz (2004), the ability to create such objects presupposes that the designer has a clearly articulated theoretical concept of the notion to be described iconically.

The face as a diagrammatic mask of communicability

Faciality is, for Gilles Deleuze and Félix Guattari, an abstract machine coupling signification and subjectivity; it is a *white wall/black hole* system (Deleuze, Guattari 1987: 167). The face functions as a diagram overcoding subjectivity, stopping its flows in its tracks, cutting them short, stating: mind your holes! Don't let anything untoward flow out from them! But also: clean your walls! Keep them shining white! (The face is an imperial machine spreading racism.)

Faciality is a historical, political, social machine connecting bodily powers to the socio-political milieu under the obligations of stratified intersubjectivity; it is thus both immanent and transcendent, traversing across all the levels and dimensions of behaviour, interaction, identification, as Massimo Leone (2021) underlines in his introduction to the special issue of SSS on the “facesphere”. Being both immanent and transcendent, there arises the problem that it will be a mask determining the subject's innermost identity. It is in this gap between immanence and transcendence that Ugo Volli (2021), in his paper “The transcendence of the face”, places human freedom and, consequently, the possibility for human beings to take responsibility for their actions. To prove his point, he cites Levinas, who underlines the intimacy of the face and the signifier: “It (the expression) presents the signifier. The signifier, the one who gives a sign, is not signified. It is necessary to have already been in an area of signifiers, for the sign to appear as a sign. The signifier must therefore present itself before any sign, in itself – as a face” (Levinas 1961: 186, cited in Volli 2021: 292). The face, connecting the inside and the outside, exhibits a similar arbitrariness to the signifier. Thus, the face of the other always implies that there is a person capable of freedom of choice behind this face-signifier. And since the face is a signifier, the presence of the face also signifies the absence of the person, their only partial presence: the face, while making persons visible in socio-political regimes of visibility, necessarily involves a zone of indeterminacy. In this sense, the mask-face is “the original model of the communication of values” (Volli 2021: 295), as it impels us to ask: “Who are you?” – despite the answer being inscribed on the face. The holes remain black.

A similar problematic is taken up by Gabriele Marino (2021) in the essay “Cultures of the (masked) face”, which draws a diagram of stratification of the face. The face involves the following strata: (1) the *visus* as a whole, the semiotic mask; (2) the *visus* as the modification of the face; (3) the *facies* as the biological surface; (4) the *vultus* as the expressions of physiognomy (Marino 2021: 321). In the end, it is not possible to decide which one is the most fundamental, the “natural” – all of them, in turn, mask each other. Thus, we remain “obsessed by what we do not know, by what is missing: what is beyond the door, off the camera, behind

the mask” (Marino 2021: 331). But which one is not the mask? Which one is the mask?

This undecidability, again, constitutes the centrality of the face for semiotics. The face poses problems while communicating seemingly clear significations. Who, in fact, speaks? And in what state is the one who speaks? According to Simona Stano (2021), faces are not only indexes to identity, but also (un)health. Yet the signifiers of health differ across cultures, thus again steering us away from identifying the so-called “natural” face even as a sign of bodily states. Thus, faces are not only of their bearers, but also of the socio-cultural milieu in which they are worn. As such, regimes of faciality may provide us with insights into the socio-cultural-political regimes and contexts that produce them. Elsa Soro (2021) thus analyses urban-human faces, that is, faces that suit a particular type of city, that become a city and that the city needs to express itself, while Antonio Santangelo (2021) investigates significant faces in films, arguing that the most meaningful faces expressed on screen reflect models of socio-culture. He concludes: “all that has been left to us is wandering around with no precise destination, in search of a meaning and of an identity that we are unlikely to find” (Santangelo 2021: 434). If our model of society is, so to speak, all over the place, but with no outside to lean on, so do the significant faces tend to signify confusion, rather than an essential or dreamed-of identity. In this case, the face truly becomes a sheer mask, a simulacrum, perhaps, behind which there is only absence.

Yet from this absence, bodily powers surge forth, for instance in the form of ecstasy, passion, orgasm – as in the film *La Vie d'Adèle* analysed by Santangelo or in the faces focused on by Bruno Surace in the paper “Semiotics of the pornographic face: From traditional porno to Beautiful Agony”.³ Although pornography is, to a significant extent, still a simulacrum, making pleasure into hard work, it nevertheless reveals that the face is never simply a white wall, a representation, but in the context of pornography, acts as the nexus of renegotiation “of the elastic distinction between private and public, between intimate and exhibitable, between unbecoming and licit. In a semio-politics of bodies, the face obviously plays an indispensable and definitive role” (Surace 2021: 415). The face also expresses publicly the innermost passions of the body, thus rendering the latter political. However, the face is not only a (perhaps deceitful) symbol of an identity (of either a person or a socio-culture) or an expressive index of bodily powers (linking them directly to the political dimension of a socio-culture), but it also needs to be an

³ The question of affect and expression is also present in two papers in *Semiotica* (although not limited to the problematic of the face): Amitash Ojha, Charles Forceville and Bipin Indurkyya (2021) conduct “An experimental study of the effect of emotion lines in comics” and Yi Jing (2021) studies visual affect in film.

icon, it needs to express similarity (to intentions, for example) to be trustworthy. Devon Schiller (2021) analyses the dimension of iconicity in Paul Ekman's early studies of facial behaviour and formulates what he terms 'Ekmanian faciasemiotics'.

Still, icons do not function without cultural overcoding and influence, as argued by Remo Gramigna and Cristina Voto in "Notes on the semiotics of face recognition" (2021). Cultural coding produces types, it typifies, and as such, icons are always liable to betray the faces that they signify. This poses significant problems for digital facial recognition, which should not be taken simply as a connection of biomarkers and technology; it is always mediated by socio-cultural standards. It is semiotics' task to help attain some recognition of these biases. Faces in the digital sphere, then, pose significant problems, and several diverse papers tackle these in this special issue. Søren Vigild Poulsen investigates deepfakes in "Face off – a semiotic technology study of software for making deepfakes" (2021); Federico Biggio (2021) focuses on augmented reality facial effects; Kristian Bankov explicitly tackles the problem of trust in "Face and trust: A semiotic inquiry into influencers, money, and amygdala" (2021); Vincenzo Idone Cassone (2021) studies Pokémon, Japanese animated characters, and the emergence of playful visual animism; Peter Mantello (2021) views the selfie as an agent of radicalization.⁴

Considering all the diverse problems tackled in the special issue, we are led to the conclusion that although the face is a very simple abstract machine of white wall/black holes, its abstract nature renders it intensely problematic. Furthermore, its nature as the nexus between bodily powers, socio-political regimes and personal identities turns it into a mask of a clear diagram with fixed points and straight lines, impelling us to conclude in perplexity that perhaps there is no true diagram of communicability, only masks, which are nevertheless essential: communicability is essentially open-ended, problematic.

Advances in Peircean semiotics

C. S. Peirce's influence is apparent in many of the articles in *Semiotica* and *SSS* for 2021. On the one hand, Issue 243 of *Semiotica* contains a special section, consisting of an introductory note and five research articles, on the topic of Peirce and Consciousness by guest editor Donna E. West. Moreover, West (2021a) has another article about Peirce's notion of double consciousness in *SSS* 49(1/2). In

⁴ On a similar path – stuck between the physical face and the digital screen – in *Semiotica*, Brian L. Due (2021) investigates the semiotic resources for achieving face-to-screenface formation with a telepresence robot and Reham El Shazly (2021) conducts a case study of young adults' selfies on Instagram.

her introductory note to the special section on Peirce, West (2021c: 1) points out that “[Peirce’s] integrated concept of consciousness” has gone unexplored until now. West (2021a) considers the notion of double consciousness from the perspective of Peirce and Lev S. Vygotsky. Double consciousness refers to Peirce’s internal/external dialogue in which an interior and an exterior exchange of ideas “command, interrogate, or suggest alterations to established conduct/beliefs in contexts in which propositional/argumentative conflicts are obviated” (West 2021a: 235). This process advances abductive reasoning and leads to hunches that are surprising because they are at odds with what is expected. Vygotsky (1997), on the other hand, employs “double stimulation” in his experimentation with children, which force them to make choices between possibilities when there are conflicts of motive. West’s (2021a: 235– 255) comparison of Peirce’s and Vygotsky’s (1997) research reveals that Peirce’s double consciousness leads to surprise and forces the scientist to question new versus old facts while Vygotsky’s approach forces single decisions and resultant reactions, i.e. cause-effect. Peirce’s approach, however, involves a struggle between new facts and previously accepted ones. In this sense, West (2021a) argues that Peirce’s double consciousness informs Vygotsky’s double stimulation, but it is dissimilar because the latter’s approach is an either/or decision that fails to invoke the element of surprise. West (2021c: 2) also notes that surprise is not a solitary event, but rather, it depends on repeated occurrences. In her essay on the element of surprise in Peirce’s double consciousness, West (2021b: 13) argues that surprise “acknowledges that a violation has emerged between previous principles and those already asserted”. West (2012b: 43) states that “the dialogic nature of double consciousness exploits the element of surprise, and makes obvious the utility of dialogue in the interpretive process. Once a new, plausible interpretation surfaces, it competes with old ones; and a determination of which is more accurate must be worked out.”

At this point, it is worth commenting briefly on the other four research essays in this special section on Peirce and consciousness. Winfried Nöth (2021: 49) considers three aspects of consciousness (Primisense, Altersense, Medisense), then focuses on Medisense (“the consciousness of cognition, thought, and reasoning”) and its three manifestations (Abstraction, Suggestion, Association; see West 2021c: 3). Nöth warns of the dangers of constant sign usage because it degenerates into habit with a subsequent loss of meaning. Next, Lucia Santaella (2021) deals with the unresolved issue of consciousness and mind. In her essay, she argues that the problem is worked out in Peirce’s work and Santaella (2021: 105) states that “[i]ntelligence, hence mind, for Peirce, is distinct from consciousness. Without being dissociable, they are, in fact, distinct but complementary.” Ivo A. Ibri (2021) considers Peirce’s mature stage of contemplation on the question of

consciousness. Ibri employs the metaphor of the “bottomless lake” to probe Peirce’s concepts. Michael L. Raposa (2021: 153) considers Peirce’s remarks on the logic of meditation. Raposa’s essay has a dual purpose: (1) to collect those scattered remarks; and (2) to evaluate their significance for philosophers of religion not as a unitary phenomenon but rather its varied forms and manifestations. Raposa (2021: 169) argues that a logic of meditation is a self-controlled process of habit formation, which involves “diverse habits of perception, feeling, interpretation, and conduct but in every case developed by first practicing how one pays attention”.

Piotr Konderak’s (2021) essay in SSS provides an excellent companion piece for West’s special section on Peirce and consciousness and her essay in SSS (2021a). Konderak argues that a significant interdependence exists between cognition and meaning-making activities, i.e. semiosis in its very broad sense. The author views meaning-making activities as both an internal and external process. This integrated interdisciplinary approach seeks to join Rowlands’ (2010) Amalgamated Mind view and the 4e (enactive, embodied, embedded, extended) approaches (Varela, Thompson, Rosch 1991; Thompson 2007). Konderak (2021: 145–152) then discusses Peirce’s views on meaning-making, and, subsequently, a cognitive approach to Peircean semiosis. Konderak points out that his interdisciplinary approach seeks to address the rationalistic (mechanistic) view versus the empiricist (experiential) approach to meaning-making. The papers related to consciousness and double consciousness introduce an entirely new area of research that suggests new areas of scholarly endeavour.

The following articles in *Semiotica* for 2021 attest to Peirce’s ongoing impact in semiotic research. In addition to the above-mentioned work by Clemmer (2021), Rebecca Dalvesco (2021) studies Jean Cocteau’s film *La Belle et la Bête* (1946) from a Peircean perspective, i.e. she examines the relationship of icons, symbols, and indices and the connections that an individual has with the object or idea observed. Moreover, the author considers the Freudian notions of conscious and unconscious repression in the character of Belle.

Irit Degani-Raz (2021) considers the effect of Peirce’s diagrammatic reasoning and David Lewis’s (1973) counterfactual conditionals, or possible worlds, in theatrical presentations. More specifically, the author considers two plays by Samuel Beckett, *Quad* and *Come and Go*. In this interpretation, the diagrammatic schema of a play provides the audience with a multi-modal text that offers a more comprehensive form of reasoning. This extended form of theatrical epistemology enhances the acquisition of new knowledge of the world. The use of Degani-Raz’s approach to audience understanding of theatrical presentations can enhance comprehension of such works through observation. Moreover, Degani-Raz (2021: 198) considers the diagrammatic analysis of a play to be “a clear manifestation

of the playwright's creativity". While Degani-Raz focuses on Beckett's plays, this model can be applied to other dramatic work, and, thus offers opportunities to further extend this approach.

Nimrod L. Delante (2021) examines the 2013 typhoon Haiyan that struck Tacloban and Palo in Leyte in the Philippines that resulted in thousands of deaths and mass destruction of infrastructure. Delante argues that this study has theoretical implications for Peirce's views on communication and meaning-making as well as practical implications, i.e. helping victims with coping and recovery and education about the natural meteorological phenomenon of a typhoon, as well as suggesting concrete steps that can be taken to mitigate the damage and deal with recovery and reconstruction. To be sure, the author's suggestions are applicable to any number of natural disasters, and this essay serves to exemplify appropriate ways of addressing them.

Brian L. Due's (2021) essay is an excellent companion piece to the special issue of SSS (2021, 3/4) on the "facesphere". This very timely study considers a world in which interpersonal face-to-face interaction becomes severely reduced, while telecommunication becomes the technological norm of communicative interaction. Due's study examines interactions between a patient and a doctor who controls a robot in a Danish residential rehabilitation centre with the designation of RoboDoc, i.e. a telecommunicative mechanism that connects patient and physician through technology. In fact, medical professionals began using this strategy with the onset of the pandemic as a much more common approach to address the medical needs of their patients. It is clear that this study will need further research to assess its long-term effectiveness and consequential results given its current ubiquity.

Orit Fuks's article focuses on Israeli Sign Language (ISL), carrying out an empirical study with seventy Hebrew speakers who can reliably recognize 45 signs. The author notes that "[t]he full semiotic distribution of handshapes in the lexicon and their use in language remain difficult for hearing non-signers to understand and depends on more specific language and cultural knowledge". Fuks employs Peirce's notion of iconicity. The author (Fuks 2021: 119; see also Kendon 2008) concludes that "new signers might benefit from developing a comparative semiotic approach concerning how visible actions are used in utterance construction in different languages and discourse contexts". Fuks (2021: 119) further notes that "[t]he results lead to conclusion that language external iconic mapping could ease the learning of direct iconic forms; it has yet a more limited capacity to help hearing non-signers learn indirect and opaque forms". Additional research on other sign languages would help to verify this hypothesis.

Dan Neshier (2021: 176) provides a lengthy discussion of epistemic logic and Peirce's phaneroscopy, which leads him to state that "[w]ith epistemic logic we

implicitly and habitually conduct our basic behavior, and eventually philosophize with it. Hence, we can say that philosophical and logical sciences come together in epistemic logic to enable our understanding and the self-control of our life's conduct in reality." It is likely that this essay will produce reactions from other philosophers. And, last but not least, in his essay on Alphonse-Donatien François de Sade (1740–1814) Sergio Torres-Martínez (2021a) examines de Sade's use of language as a form of language game in which meaning is contextual, and Peirce's notions of semiotic.

The durative nature of Charles Sanders Peirce's writing continues to influence scholars more than a century after his death in 1914. The frequent references to Peirce's essays in 2021 in *Semiotica* and *SSS* confirm the influence of this amazing polymath, "the father of pragmatics" whose work is still being edited in order to have a complete account of his massive ruminations on logic, philosophy, and mathematics, category theory, aesthetics and ethics, and signs. The fact that great researchers continue to implement Peirce's concepts and ideas reflect the authority of these notions.

Advances in Greimassian semiotics

In his essay on Algirdas Julien Greimas (1917–1992), Thomas F. Broden (2021) provides an intellectual and historical overview of Greimas' semiotic contributions through various sources and the means by which his ideas have been disseminated world-wide. Broden (2021: 189) addresses the diffusion and localization of ideas when he cites James A. Secord (2004: 656), who considers the "practices of communication, movement, and translation [...] as central to specific aspects of the way the history of science is conceptualized [...]". To be sure, the processes and procedures of the transnationalization of theory and ideology represent a complex interaction of travel, translation, and research through various means of communication. With the advent of the Internet and other forms of technology, the transmission of ideas has increased at an exponential rate. In this essay about the propagation of Greimas' theories, Broden considers a variety of pertinent factors including Greimas' own intellectual formation through his study in France, his teaching in Egypt and Turkey, and then in France. His publications (11 single-authored books and five co-edited volumes and additional edited or co-edited works) continue to be influential. Greimas' scholarly research is varied (Lithuanian cultural movements, Germanic historiography, Prussian modernism, French Cartesianism and symbolism, and much more (Broden 2021: 192). Ultimately, he taught at the prestigious *École Pratique des Hautes Études VI Section/publi* (EPHE/

EHESS) with Barthes, Bourdieu, Braudel, and Lévi-Strauss. Greimassian theory was positively received in Italy and Latin America (especially Brazil), albeit not in all Romance-language nations. Moreover, his work has received attention at several major North American universities and English translations of his works became available. Nevertheless, Greimas' work has not enjoyed all of the attention that it deserves in the Anglophone countries (Broden 2021: 204). German translations were also published. In Russia-USSR, Greimas had a mixed reception. The most receptive East Asian nation, China, has been most open to his work and ideas. In the remainder of this essay, Broden (2021: 215) offers an overview of the total number of Greimas' doctoral students (77) and their regions and countries of origin from 1977 to 1985. He also provides a summary of the chronology and linguistic distribution of translations (21) of Greimas' work.

At this juncture, it must be noted that in 2017 *Semiotica* published two complete special issues of its journal dedicated to the work of Greimas, both co-edited by Thomas F. Broden and Stéphanie Walsh Matthews (2017a, 2017b). The first volume dealt with the work of Greimas himself, while the second addressed scholars who employed Greimas theory and ideology in their own scholarship. A detailed account of the content of both volumes with a total of 1024 pages appears in *The American Journal of Semiotics* (Nuessel 2018). Broden's (2021) essay serves several important functions. It provides evidence of how the influence of this great intellectual was able to reach far beyond his teaching position in Paris to many other parts of the world through his presentations at various scholarly meetings world-wide, through international students who took his seminars at the EPHE/EHES, and through other forms of communication, which, in the twenty-first century have been substantially enhanced technologically. Broden's essay constitutes an area of research that could be applied to other renowned semioticians such as Umberto Eco (1932–2016), Roland Barthes (1915–1980), Pierre Bourdieu (1930–2002), Fernand Braudel (1902–1985), and Claude Lévi-Strauss (1908–2009), who have influenced their contemporaries and subsequent adherents in similar ways through various forms of direct and indirect communication.

Louise Hébert and Arthur Poirier-Roy (2021: 92–99) published an essay about the logical models of the elementary structure of meaning that includes a detailed account of the semiotic square developed by Greimas and Rastier (1968), which can be described as a logical articulation of a particular opposition, e.g. life and death. Many factors figure in the determination of a semiotic square, including terms, metaterms, relations, etc. In this regard, Guy Clarke Marshall and André Freitas (2021) provide an excellent account of measuring diagram quality and the requirements for creating meaningful and comprehensible diagrams. Jamin Pelkey (2017: 277), recipient of the *Mouton d'Or* Award for best article in *Semiotica* for 2017,

proposes that “the relations modeled in these diagrams are rooted in gestalt memories of kinesthesia and proprioception from which we derive basic structural awareness of opposition and contrast – including verticality, bilaterality, transversality, markedness and analogy”. Pelkey thus reinforces the concepts of the semiotic square developed by Hébert and Poirier-Roy (2021) and Marshall and Freitas (2021).

The second special issue of *Semiotica* (Broden, Walsh Matthews 2017b) is devoted to post-Greimassian scholarship and contains 31 essays by scholars from 11 countries on four continents, some of whom were contemporaries of Greimas. Moreover, five additional studies related to Greimas were published in *Semiotica* and *SSS* for 2021, which indicates that interest in Greimas continues thirty years after his death. Broden (2021: 187) points out that “[h]is project has engendered distinctive appropriations and at times productive institutional structures in a number of cultural and linguistic contexts, notably Romance, Anglo-American, Germanic, Russian, Lithuanian, and Chinese”.

The continuing relevance of Greimas is reinforced by additional studies within a Greimassian framework noted previously. In this regard, Kristian Bankov’s (2021) article in the special issue of *SSS* dedicated to the “facesphere” addresses the technological manipulation of reality of the human face to present younger versions of a person. As Bankov notes, the ability to do this has led to an entire new subarea of cybersecurity labelled “Faceforensics”. The capacity to manipulate facial images is now commonplace in online dating services, Zoom meetings, and other electronic venues. This type of deception leads Bankov (2021) to resort to the work of Greimas and Fontanille (1991: 218) on “trust” as outlined in their collaborative monograph; in fact, the author employs the Greimassian Square to illustrate the semantic subtleties of trust/distrust. As Bankov (2021: 539) aptly points out, this is the first study that “brings together face, trust and semiotics”. Moreover, Bankov (2021: 539) notes that his interdisciplinary conceptualization of these three elements constitute the essence of economic ventures when he states that “[t]rust has become one of the scarcest resources for our social fabric. In such a context, it has become obvious that appearance dominates over substance and face trustworthiness is increasingly playing a decisive role in the success of the new-economy ventures, consisting mainly of services and access to experiences.”

In order to capture the relationship of the city to its visual images and spatial dimensions, Paolo Demuru (2021) employs the Greimassian square as a theoretical mechanism to deconstruct the city of São Paulo and its socio-semiotic manifestations of power and social processes. The author makes the following assumptions about the large urban metropolis of São Paulo, Brazil:

- (1) contemporary São Paulo is characterized by a true visual hypertrophy, which manifests itself, all at once, in both its architectural and mediatic landscapes;
- (2) in São Paulo, power is hypervisible and apparently transparent;
- (3) the excess of images, gazes, and perspectives produces, in São Paulo, dense and wide areas of topological, mediatic, and social invisibility;
- (4) the predominant visibility in São Paulo can be qualified as a “populist” visibility.

These hypotheses lead Demuru to conclude that such factors account for the inclusion and exclusion now situated in global metropolises. The author invokes the Greimassian semiotic square (Greimas, Courtés 1982: 308) to show the oppositions of Concentration-Diffusion and Immobilisation-Circulation as the theoretical point of departure (Demuru 2021: 72). Demuru (2021: 76) argues credibly that his analysis will open up a wide range of future studies to address the following distinctive features of populism: vagueness, aesthetic charges, and the negation of the other.

Marilia Jardim (2021) employs Greimas' (1986) methodology integrated with the Visual Semiotics of Anne-Marie Floch (1995) and Ana Claudia Oliveira (2004, 2008), and Manar Hammad's (1986) Semiotics of Space to examine the semiotics of an eighteenth-century French dress. The author considers shape, hierarchization of the garment's front where adornments are concentrated in the centre, and topology, all of which capture the culture in vogue at the time (Jardim 2021: 26–27). There are additional oppositions: top-back, bottom-back, top-frontal, bottom-frontal, top-back, and bottom-back. Every section is specified by spatial hierarchies. This careful analysis of a single dress reveals the meanings that are intricately encoded in this culturally-determined work of art. Jardim (2021: 36) concludes by posing the question “isn't it time we question the role played not by different ‘fashions’, but by fashion, as a system, either the ultimate addresser of our social order or at least the most important delegate subject of our economic system?” This essay creates the possibility for the study of the meanings of other items of fashion both male and female as well as the accompanying accoutrements associated with different epochs.

Michael Ranta (2021: 2) addresses pictorial narration with a special focus on depictions of the *Annunciation of the Virgin Mary* “[...] where narrative schema structures become involved and, indeed, the comprehensibility of the pictures as such presuppose mental script representations”. The author points out that semioticians, especially Greimas (1983[1966], 1987), have been concerned with any kind of sign processes, including narratology, from an intermodal perspective. Ranta's (2021: 24) study provides suggestions for future investigations including production and reception of narrative schemas from different historical periods.

Research interest in Greimas approach to semiotics remains viable as evidenced by studies within his framework published in *Semiotica* and *SSS* in 2021.

Anticipating the future

The future is neither fully pre-determined nor absolutely empty. The future does not exist, but it does insist: we have to behave in a certain manner to fulfil our dreams, we have to envision future states as already existing to make sense of the past and present. Future is an imperative: life has to find a way to continue transforming while maintaining its integrity. Anticipating the future is an interplay between predictability and unpredictability. The special issue of *SSS* on “Anticipation and change”,⁵ guest edited by Lauri Linask, Inesa Sahakyan and Aleksei Semenenko, situates itself in the midst of this interplay and asks how we produce predictability in the context of unpredictability, and how the production of predictability hinders the unpredictability at the core of actualization of the future.

These questions are especially relevant in the face of the environmental crisis, which requires fundamental transformations in cultural, political, social, economic, etc. spheres – that is, in most spheres of life that have become our “human nature”. Morten Tønnessen (2021) attempts to envision how ecosemiotics could help model the societal transformation necessary to address the environmental crisis.⁶ He juxtaposes the positions of ecomodernists and Deep Ecologists, preferring the latter to the former, since they do not rely on continuous growth based on technological solutions and take non-human beings seriously. He advocates for a normative orientation in ecosemiotics, which “constitutes a form of transformative semiotics in so far as human ecology is approached critically in a political, ethical and/or another normative context” (Tønnessen 2021: 55). In other words, semiotics can no longer satisfy itself with being descriptive, but needs to intervene in the socio-political field. One potential path of intervention for semiotics has always been the critical analysis of socio-cultural discourses. This path is taken by Prisca Augustyn (2021), who shows how an anti-solar ballot included in the 2016 US Presidential election succeeded in presenting itself as being pro-consumer and supportive of solar energy, and thus in maintaining the old distribution system.

⁵ The special issue is based on the Nordic Association of Semiotic Studies conference “Anticipation and change”, which took place on 13–15 June 2019.

⁶ In *Semiotica*, Geoffrey Beattie and Laura McGuire write about “Personality and climate change mitigation: A psychological and semiotic exploration of the sustainable choices of optimism” (2021), thus covering the other side of the coin to societal change – personal choices.

Societal transformation is especially difficult, since the future, although not yet existent, is continuously anticipated on several levels of (common) life. Katre Pärn (2021) deals with the problem of pre-mediation or how future events and processes become predictable through modes of representation. The future is thus a semiotic socio-cultural phenomenon with its consistency and a type of certainty: the coming needs to arrive. Transformation would thus require work on pre-mediating representations. The processes of pre-mediation no doubt also influence the pre-conceptual formation of habits: habit-formation does not take place separately from socio-cultural representations and dispositives of power. The trajectories of anticipation in habit-formation and pre-conceptuality are the focus of Sebastian Feil's (2021) article. Thus, it is necessary to model how to think outside the box. This concerns Inna Sahakyan, who attempts to conceptualize innovation based on Peirce. She argues that innovation is "intricately linked with metaphor and innovative processes can be analysed in the light of induction" (Sahakyan 2021: 188). This goes against the grain of the common interpretation tying innovation to abduction, but innovation, in times of crisis, no doubt needs innovating – and who better to teach us how to begin thinking differently than children. This is why Sara Lenninger argues that it is critical that adults gain better knowledge of how children make meaning and construct narratives. She states that such knowledge "is an ethical obligation if children's right to participate in decisions that affect them is to be taken seriously" (Lenninger 2021: 229). Children are already telling us that we need to live differently if we are to address the environmental crisis – it is high time to take them seriously.

A concluding comment

It is of course impossible to define any trends based on the analysis of only one year of publications, even if these are from the two leading journals in the field. However, the scope of issues touched in these articles seems to demonstrate that Peircean and Greimassian approaches in semiotics, which have dominated semiotic research in recent decades, are both still going strong, while they remain not well integrated with each other. Another aspect that we can observe is a remarkable interest in developing approaches in semiotic modelling on the one hand, and empirical semiotic analysis as related to modelling on the other hand. A remarkable interest in the future that is observable in many articles, however, may signify a period of interesting changes ahead for the field of semiotics.

References

- Augustyn, Prisca 2021. Solar energy discourse in the Sunshine State. *Sign Systems Studies* 49(1/2): 63–85. <https://doi.org/10.12697/SSS.2021.49.1-2.03>
- Bakrim, Noury 2021. Pragmatic impacts, representations, and regulation. *Semiotica* 239: 147–168. <https://doi.org/10.1515/sem-2018-0107>
- Bankov, Kristian 2021. Face and trust: A semiotic inquiry into influencers, money, and amygdala. *Sign Systems Studies* 49(3/4): 527–542. <https://doi.org/10.12697/SSS.2021.49.3-4.14>
- Barnlund, Dean C. 1970. A transactional model of communication. In: Akin, Johnnye; Goldberg, Alvin; Stewart, Joseph; Myers, Gail (eds.), *Language Behavior: A Book of Readings in Communication*. The Hague: Mouton, 43–61.
- Beattie, Geoffrey; McGuire, Laura. 2021. Personality and climate change mitigation: A psychological and semiotic exploration of the sustainable choices of optimism. *Semiotica* 241: 237–273. <https://doi.org/10.1515/sem-2019-0056>
- Biggio, Federico 2021. Augmented facets: A semiotics analysis of augmented reality facial effects. *Sign Systems Studies* 49(3/4): 509–526. <https://doi.org/10.12697/SSS.2021.49.3-4.13>
- Broden, Thomas F. 2021. A. J. Greimas in the world: Travels, translations, transmissions. *Semiotica* 243: 187–228. <https://doi.org/10.1515/sem-2020-0040>
- Broden, Thomas; Walsh Matthews, Stéphanie (eds.) 2017a. A. J. Greimas – *Life and Semiotics/La vie et la sémiotique d'A. J. Greimas*. (Special issue.) *Semiotica* 214.
- Broden, Thomas; Walsh Matthews, Stéphanie (eds.) 2017b. *La sémiotique post-gramassienne/Semiotics post-Greimas*. (Special issue.) *Semiotica* 219. <https://doi.org/10.1515/sem-2017-0131>
- Candel, Daniel 2021. Systematizing evil in literature: Twelve models for the analysis of narrative fiction. *Semiotica* 242: 141–168. <https://doi.org/10.1515/sem-2020-0071>
- Cerrone, Mirko; Mäekivi, Nelly 2021. A zoosemiotic approach to the transactional model of communication. *Semiotica* 242: 39–62. <https://doi.org/10.1515/sem-2020-0052>
- Ciecierski, Tadeusz 2017. Jerzy Pelc. *Studia Semiotyczne* 31(1): 5–18.
- Ciecierski, Tadeusz 2021a. An introduction: Use and meaning – a special issue of *Semiotica* devoted to Jerzy Pelc. *Semiotica* 240: 1–4. <https://doi.org/10.1515/sem-2021-0033>
- Ciecierski, Tadeusz 2021b. Indexicality, meaning, use. *Semiotica* 238: 73–89. <https://doi.org/10.1515/sem-2018-0056>
- Clemmer, Richard 2021. Operationalizing Peirce's Syllabus in terms of icons and stereotypes. *Semiotica* 239: 265–285. <https://doi.org/10.1515/sem-2018-0152>
- Dalvesco, Rebecca 2021. The imagination, the conscious, and the unconscious in Jean Cocteau's *La Belle et la Bête*. *Semiotica* 238: 199–209. <https://doi.org/10.1515/sem-2019-0047>
- Degani-Raz, Irit 2021. Spatial diagrams and geometrical reasoning in the theater. *Semiotica* 239: 177–200. <https://doi.org/10.1515/sem-2019-0052>
- Delante, Nimrod L. 2021. Surviving a natural disaster as a semiotic reformation of self and worldview. *Semiotica* 243: 353–386. <https://doi.org/10.1515/sem-2018-0130>
- Deleuze, Gilles; Guattari, Félix 1987. *A Thousand Plateaus: Capitalism and Schizophrenia*. Minneapolis: University of Minnesota Press.

- Demuru, Paulo 2021. Hyper(in)visibility and urban-mediatic populism in São Paulo: A sociosemiotic approach. *Semiotica* 239: 61–80. <https://doi.org/10.1515/sem-2019-0092>
- Due, Brian L. 2021. Semiotic resources for achieving *face-to-screenface* formation with a telepresence robot. *Semiotica* 238: 253–278. <https://doi.org/10.1515/sem-2018-0148>
- Eagleton, Terry 2010. *On Evil*. New Haven: Yale University Press.
- El Shazly, Reham 2021. Splits on Instagram: A case study of young adults' selfies. *Semiotica* 241: 185–218. <https://doi.org/10.1515/sem-2019-0099>
- Farias, Priscilla Lena; Queiroz, João 2004. '10cubes' and '3N3': Using interactive diagrams to investigate Charles Peirce's classification of signs. *Semiotica* 151: 41–63. <https://doi.org/10.1515/semi.2004.072>
- Feil, Sebastian 2021. Trajectories of anticipation: Preconceptuality and the task of reading habit. *Sign Systems Studies* 49(1/2): 191–215. <https://doi.org/10.12697/SSS.2021.49.1-2.08>
- Floch, Anne-Marie 1995. *Identités visuelles*. Paris: Presses Universitaires de France.
- Fuks, Orit 2021. The distribution of handshapes in the established lexicon of Israeli Sign Language (ISL). *Semiotica* 242: 101–122. <https://doi.org/10.1515/sem-2019-0049>
- Goguen, Joseph 1999. An introduction to algebraic semiotics, with application to user interface design. In: Nehanive, Chrystopher L. (ed.), *Computation for Metaphors, Analogy, and Agents*. Berlin, Heidelberg: Springer, 242–291.
- Goguen, Joseph; Harrell, D. Fox 2005. Information visualization and semiotic morphisms. In: Grant, Malcolm (ed.), *Studies in Multidisciplinarity*. Vol. 2. Amsterdam: Elsevier B. V., 83–97. https://doi.org/10.1007/3-540-48834-0_15
- Gramigna, Remo; Voto, Cristina 2021. Notes on the semiotics of face recognition. *Sign Systems Studies* 49(3/4): 338–360. <https://doi.org/10.12697/SSS.2021.49.3-4.05>
- Greimas, Algirdas J. 1983[1966]. *Structural semantics*. Lincoln: University of Nebraska Press.
- Greimas, Algirdas J. 1986. *Sémantique structurale*. Paris: Presses Universitaires de France.
- Greimas, Algirdas J. 1987. *On Meaning: Selected Writings in Semiotic Theory*. London: Frances Pinter.
- Greimas, Algirdas. J.; Courtés, Joseph 1982. *Semiotic and Language: An Analytical Dictionary*. Bloomington: Indiana University Press.
- Greimas, Algirdas. J.; Fontanille, Jacques 1991. *Sémiotique des passions: Des états de choses aux états d'âmes*. Paris: Seuil.
- Greimas, Algirdas. J.; Rastier, François 1968. The interaction of semiotic constraints. *Yale French Studies* 41: 86–105. <https://doi.org/10.2307/2929667>
- Hammad, Manar 1986. Expression spatiale de l'énonciation. *Cruzeiro semiótico* 5: 38–79.
- He, Yufei 2021. Towards a stratified metafunctional model of animation. *Semiotica* 239: 1–35. <https://doi.org/10.1515/sem-2019-0078>
- Hébert, Louis 2011. Semiotique et bouddhisme: Carré sémiotique et tétralemme (catuṣkoṭi). In: Hébert, Louis; Guillemette, Lucie (eds.), *Performances et objets culturels*. Québec: Presses de l'Université Laval, 103–128.
- Hébert, Louis; Poirier-Roy, Arthur 2021. Modèles logiques de la structure élémentaire de la signification: Templum, prisme sémiotique, carré sémiotique, cube sémiotique et autres. *Semiotica* 238: 91–124. <https://doi.org/10.1515/sem-2019-0096>

- Ibri, Ivo I. 2021. On the bottomless lake of firstness: Conjectures on the synthetic power of consciousness. *Semiotica* 243: 129–152. <https://doi.org/10.1515/sem-2021-0120>
- Idone Cassone, Vincenzo 2021. *Gotta face 'em all*: Pokémon, Japanese animated characters, and the emergence of playful visual animism. *Sign Systems Studies* 49(3/4): 543–565. <https://doi.org/10.12697/SSS.2021.49.3-4.15>
- Jadacki, Jacek; Strawiński, Witold (eds.) 1996. *W świecie znaków* [In the world of signs]. Warsaw: PTF.
- Jardim, Marilia 2021. The plastic of clothing and the construction of visual communication and interaction: A semiotic examination of the eighteenth-century French dress. *Semiotica* 242: 17–37. <https://doi.org/10.1515/sem-2020-0050>
- Jing, Yi 2021. Visual affect in films: A semiotic approach. *Semiotica* 239: 99–124. <https://doi.org/10.1515/sem-2019-0081>
- Kendon, Adam 2008. Some reflections on the relationship between ‘gesture’ and ‘sign’. *Gesture* 8(3): 348–366. <https://doi.org/10.1075/gest.8.3.05ken>
- Konderak, Piotr 2021. Towards an integration of semiosis – a cognitive semiotic perspective. *Sign Systems Studies* 49(1/2): 132–165. <https://doi.org/10.12697/SSS.2021.49.1-2.06>
- Kull, Kalevi; Maran, Timo 2013. Journals of semiotics in the world. *Sign Systems Studies* 41(1): 140–145. <https://doi.org/10.12697/SSS.2013.41.1.08>
- Langacker, Ronald 2008. *Cognitive Grammar: A Basic Introduction*. Oxford: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195331967.001.0001>
- Leone, Massimo 2021. Introduction: Studying the ‘facesphere’. *Sign Systems Studies* 49(3/4): 270–278. <https://doi.org/10.12697/SSS.2021.49.3-4.01>
- Lenninger, Sara 2021. Narratives and the semiotic freedom of children. *Sign Systems Studies* 49(1–2): 216–234. <https://doi.org/10.12697/SSS.2021.49.1-2.09>
- Lewis, David 1973. *Counterfactuals*. Cambridge: Harvard University Press.
- Mantello, Peter 2021. Fatal portraits: The selfie as agent of radicalization. *Sign Systems Studies* 49(3/4): 566–589. <https://doi.org/10.12697/SSS.2021.49.3-4.16>
- Marino, Gabriele 2021. Cultures of the (masked) face. *Sign Systems Studies* 49(3/4): 318–337. <https://doi.org/10.12697/SSS.2021.49.3-4.04>
- Marshall, Guy Clarke; Freitas, André 2021. Measuring diagram quality through semiotic morphisms. *Semiotica* 239: 125–145. <https://doi.org/10.1515/sem-2019-0029>
- McCrae, Robert R.; Costa, Paul T. 2013. Introduction to the empirical and theoretical status of the five-factor model of personality traits. In: Widiger, Thomas A; Costa, Paul T. (eds.), *Personality Disorders and the Five-Factor Model of Personality*. Washington: American Psychological Association, 15–27. <https://doi.org/10.1037/13939-002>
- Midgley, Mary 1984. *Wickedness*. London: Routledge.
- Nesher, Dan 2021. Epistemic logic: All knowledge is based on our experience, and epistemic logic is the cognitive representation of our experiential confrontation in reality. *Semiotica* 238: 153–179. <https://doi.org/10.1515/sem-2019-0026>
- Nešetřil, Jaroslav 2005. Aesthetic for computers or how to measure a harmony. In: Emmer, Michel (ed.), *The visual mind II*. Boston: The MIT Press, 35–59.
- Nuessel, Frank 2018. The Greimas centennial in review. *The American Journal of Semiotics* 34(3/4): 431–451. <https://doi.org/10.5840/ajs2018343/442>
- Nöth, Winfried 2021. Peirce’s legacy for contemporary consciousness studies, the emergence of consciousness from qualia, and its evanescence in habits. *Semiotica* 243: 49–103. <https://doi.org/10.1515/sem-2021-0117>

- Ojha, Amitash; Forceville, Charles; Indurkyya, Bipin 2021. An experimental study of the effect of emotion lines in comics. *Semiotica* 243: 305–324. <https://doi.org/10.1515/sem-2019-0079>
- Oliveira, Ana Claudia 2004. *Semiótica plástica*. São Paulo: Hacker.
- Oliveira, Ana Claudia 2008. Visualidade processual da aparência. In: Oliveira, Ana Claudia; Castilho, Kathia (eds.), *Corpo e moda: por uma compreensão di contemporâneo*. São Paulo Estação das Letras e Cores, 93–104.
- Pärn, Katre 2021. Towards the semiotics of the future: From anticipation to premediation. *Sign Systems Studies* 49(1/2): 108–131. <https://doi.org/10.12697/SSS.2021.49.1-2.05>
- Paulhus, Delroy L.; Williams, Kevin M. 2002. The dark triad of personality: Narcissism, machiavellianism and psychopathy. *Journal of Research in Personality* 36: 556–563. [https://doi.org/10.1016/S0092-6566\(02\)00505-6](https://doi.org/10.1016/S0092-6566(02)00505-6)
- Pelc, Jerzy 1969. Meaning as an instrument. *Semiotica* 1(1): 26–48. <https://doi.org/10.1515/semi.1969.1.1.26>
- Pelkey, Jamin 2017. Greimas embodied: How kinesthetic opposition grounds the semiotic square. *Semiotica* 214: 277–305. <https://doi.org/10.1515/sem-2016-0188>
- Poulsen, Søren Vigild 2021. Face off – a semiotic technology study of software for making deepfakes. *Sign Systems Studies* 49(3/4): 489–508. <https://doi.org/10.12697/SSS.2021.49.3-4.12>
- Ranta, Michael 2021. The role of schemas and scripts in narration. *Semiotica* 241: 1–27. <https://doi.org/10.1515/sem-2019-0071>
- Raposa, Michael L. 2021. Toward a Peircean logic of meditation. *Semiotica* 243: 153–170. <https://doi.org/10.1515/sem-2021-0119>
- Rowlands, Mark 2010. *The New Science of Mind: From Extended Mind to Embodied Phenomenology*. Cambridge: The MIT Press. <https://doi.org/10.7551/mitpress/9780262014557.001.0001>
- Sahakyan, Inna 2021. Metaphor, induction and innovation: Getting outside the box. *Sign Systems Studies* 49(1/2): 166–190. <https://doi.org/10.12697/SSS.2021.49.1-2.07>
- Santaella, Lucia. 2021 Consciousness and mind in Peirce: Distinctions and complementarities. *Semiotica* 243: 105–128. <https://doi.org/10.1515/sem-2021-0118>
- Santangelo, Antonio 2021. Culturally significant symbolic faces: For a sociosemiotics of faces in films. *Sign Systems Studies* 49(3/4): 418–436. <https://doi.org/10.12697/SSS.2021.49.3-4.09>
- Saussure, Ferdinand de 1916. *Cours de linguistique générale*. Paris: Payot.
- Schiller, Devon 2021. The face and the faceness: Iconicity in the early faciasemiotics of Paul Ekman, 1957–1978. *Sign Systems Studies* 49(3/4): 361–382. <https://doi.org/10.12697/SSS.2021.49.3-4.06>
- Secord, James A. 2004. Knowledge in transit. *Isis* 95(4): 654–672. <https://doi.org/10.1086/430657>
- Sonesson, Göran 1999. The signs of life in society – and out of it. *Sign Systems Studies* 27: 88–127. <https://doi.org/10.12697/SSS.1999.27.05>
- Soro, Elsa 2021. Urban-human faces and the semiotic right to the city: From the USSR propaganda machinery to the participatory city. *Sign Systems Studies* 49(3/4): 590–607. <https://doi.org/10.12697/SSS.2021.49.3-4.17>
- Stano, Simona 2021. The face of health in West and the East: A semio-cultural analysis. *Sign Systems Studies* 49(3/4): 298–317. <https://doi.org/10.12697/SSS.2021.49.3-4.03>

- Stjernfelt, Frederik 2000. Diagrams as a centerpiece of a Peircean epistemology. *Transactions of the Charles S. Peirce Society* 36(3): 357–384.
- Surace, Bruno 2021. Semiotics of the pornographic face: From traditional porno to Beautiful Agony. *Sign Systems Studies* 49(3/4): 400–417. <https://doi.org/10.12697/SSS.2021.49.3-4.08>
- Thompson, Evan 2007. *Mind in Life: Biology, Phenomenology and the Sciences of Mind*. London: Belknap Press.
- Torres-Martínez, Sergio 2021a. Vers une sémiotique sadienne. *Semiotica* 241: 139–158. <https://doi.org/10.1515/sem-2017-0115>
- Torres-Martínez, Sergio 2021b. Complexes, rule-following, and language games: Wittgenstein's philosophical method and its relevance to semiotics. *Semiotica* 242: 63–100. <https://doi.org/10.1515/sem-2019-0113>
- Tønnessen, Morten 2021. Anticipating the societal transformation required to solve the environmental crisis in the 21st century. *Sign Systems Studies* 49(1/2): 12–62. <https://doi.org/10.12697/SSS.2021.49.1-2.02>
- Uexküll, Jakob von 1909. *Umwelt und Innenwelt der Tiere*. Berlin: Springer.
- Uexküll, Jakob von 1921. *Umwelt und Innenwelt der Tiere 2. Vermehrte und verbesserte Auflage*. Berlin: Springer. <https://doi.org/10.1007/978-3-662-24819-5>
- Varela, Francisco; Thompson, Evan; Rosch, Eleanor 1991. *The Embodied Mind: Cognitive Science and Human Experience*. Cambridge: The MIT Press. <https://doi.org/10.7551/mitpress/6730.001.0001>
- Vickers, Paul; Faith, Joe; Rossiter, Nick 2013. Understanding visualization: A formal approach using category theory and semiotics. *IEEE Transactions on Visualization and Computer Graphics* 19(6): 1048–1061. <https://doi.org/10.1109/TVCG.2012.294>
- Volli, Ugo 2021. The transcendence of the face: A semiotic-linguistic path. *Sign Systems Studies* 49(3/4): 279–297. <https://doi.org/10.12697/SSS.2021.49.3-4.02>
- Vygotsky, Lev S. 1997[1931]. *The History and Development of Higher Mental Functions*. (Collected Works of Vygotsky. Vol. 4., Rieber, Robert W., ed.) Heidelberg: Springer.
- West, Donna E. 2021a. The dialogic nature of double consciousness and double stimulation: Implications from Peirce and Vygotsky. *Sign Systems Studies* 49(1/2): 235–261. <https://doi.org/10.12697/SSS.2021.49.1-2.10>
- West, Donna E. 2021b. The element of surprise in Peirce's double consciousness paradigm. *Semiotica* 243: 11–47. <https://doi.org/10.1515/sem-2021-0122>
- West, Donna E. 2021c. Peirce's vocation for consciousness: An evolutionary account. *Semiotica* 243: 1–10. <https://doi.org/10.1515/sem-2021-0123>
- Wittgenstein, Ludwig 1984. *Werkausgabe. Band 1: Tractatus Logico-Philosophicus/Tagebücher 1914–1916/Philosophische Untersuchungen*. Frankfurt am Main: Suhrkamp Verlag.
- Wittgenstein, Ludwig 1984. *Werkausgabe. Band 3: Philosophische Grammatik*. Frankfurt am Main: Suhrkamp Verlag.
- Zhang, Yanfei; Zhang, Shojie 2021. How Saussure is misinterpreted in Cognitive Grammar. *Semiotica* 239: 243–264. <https://doi.org/10.1515/sem-2018-0102>