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Pierce's Semeiotics: A Methodology for Bridging the Material-Ideational Divide in IR Scholarship

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Peirce's Semeiotics: A Methodology for Bridging the Material-Ideational Divide in IR Scholarship*

Alena Drieschova[†]

Abstract

IR has made important theoretical inroads with concepts such as practices, or artefacts, which transcend the division between material and ideational accounts of social reality. Many scholars have found that these integrated material-ideational approaches also require new methodological tools. This paper proposes Peirce's semeiotics as one way to unpack how practices and artefacts are ideational and simultaneously material. Peircean semeiotics is a semeiotics of materialism, which creates room for material constitution and allows us to analyse practices and artefacts as signs that can partly communicate meaning to an audience directly, without the need for background knowledge or discursive intervention, because they can signify by resembling the object they represent and/or by being causally connected to it. Peircean semeiotics thus provides a way to ground IR's macro-phenomena in visible occurrences. Moreover, given that practices and artefacts are not only signs, but also elements in the material world, and hence subject to material constraints and serving functional purposes, they do not always communicate by intent. Peircean semeiotics thus provides an avenue to analyse unintentional constitutive, yet non-deterministic change. I will illustrate the use of Peircean semeiotics on Branch's analysis of the effects of mapping on the emergence of the territorial state.

1 Introduction

Recently, IR has made important theoretical inroads with concepts such as practices, artefacts, or emotions that do not merely cumulatively add material and ideational accounts together, but rather transcend those accounts (Adler and Pouliot, 2011; Adler-Nissen, 2012; Hopf, 2010; Jackson, 2008; Ross, 2006). By now an impressive amount of empirical research has been conducted that underlines these theoretical perspectives. In the process, many of the scholars working with the new theoretical concepts (see for example Hansen, 2011; Bueger and Gadinger, 2014) find that the integrated material-ideational account also leads to new methodological challenges. Up to now, scholars have employed different methodological tools depending on whether they seek to highlight ideational or material factors. Scholars working in the realm of ideas use mainly interpretive methods such as discourse analysis or ethnographic research in order to understand constitution, whereas scholars working in the material realm intend to explain causation with the help of inter alia statistical analysis, process tracing or agent-based modelling. Many researchers have found methodological approaches that effectively combine the study of material and ideational phenomena and highlight the cumulative effects of symbolic and functional forces (Checkel, 2005; Pouliot, 2012; Sil and Katzenstein, 2010), but such mixed-methods approaches do not entirely do justice to the significant theoretical achievements obtained in transcending Cartesian dualism.ⁱ In particular, as long as we are unable to study how occurrences in the material world can at least partly create meaning without taking recourse to ideational phenomena such as background knowledge, we are unable to unleash the full potential of the practice turn.

The present paper proposes to conceive of practices and artefacts as material signs that can at times communicate more abstract concepts and structures directly, without the intervention of discourse or

background knowledge. We can thus avoid the difficulties of positing the existence of unobservable ideational or material structures, and instead focus on the perceivable ways through which macro-phenomena are communicated and thus instantiated at the micro-level. This helps us solve the difficulties of aggregation many constructivist scholars experience when moving from micro-structures to the macro-level. A focus on practices and artefacts as material signs has the further advantage of opening IR theory up for a systematic analysis of the effects of sensual forms of perception including vision, touch, smell, and sound. Thus wide ranges of phenomena, which have hitherto been relegated to the margins of IR scholarship, become accessible for systematic analysis. Lastly, given the dual function of artefacts and practices as elements of the material world, and simultaneously signs in a system of communication, a focus on material signs creates the possibility for unintentional communication, and hence it provides the foundation for a mechanism of unintentional constitutive change, while simultaneously avoiding determinism.

The present paper proposes Peircean semeiotics as a method that can retain a sign's materiality. Peircean semeiotics is a semeiotics of materialism, which takes into account that the ways in which material objects signify differ from the conventional understanding of how language signifies, namely by arbitrary social convention. To be sure, material things can signify by arbitrary social convention, but they can also signify by resembling the object they represent, for example a picture of a chair represents a chair, or they can signify by being causally connected to the object they represent, for instance a footprint in the snow signifies that a person has walked by. Furthermore, all of these signs cannot only provoke a thought in the person who notices them, they can also provoke an emotion or an action, i.e. they can provoke a response that can have a material impact on the world.

While Peircean semeiotics provides a potential platform for integrating positivist tools and discourse analysis into a single framework, it also fundamentally differs from both. Different from discourse analysis it suggests not only that language impacts how we see the world, but also what we see in the world impacts on our modes of communication. At the same time Peircean semeiotics deviates from a positivist account in that it highlights that even though there can be a direct causal relation between the things we observe in the world and what they mean, such a causal relation is not a necessity. A Peircean semeiotics furthermore includes a dimension of phenomenological perception that is missing from both approaches.

The limitations of positivist and post-positivist methods become particularly apparent in the analysis of artifacts – a seldom-studied phenomenon in IR, perhaps because an appropriate research apparatus has been lacking. Take the example of a gun. Following realist premises the possession of weapons exerts power because of their potential to kill, but guns can serve numerous other social purposes. For instance, in the seventeenth century differences in rank (and wealth) within an army were expressed in the luxurious ways in which officers' weapons were decorated, not in their superior killing power. Furthermore, many aristocrats established weapons collections to exhibit the honour and good taste of their family.ⁱⁱ In another case the very same weapons serve me, the researcher in an exhibition, as the historical testimony of a bygone era. Thus the symbolic and functional purposes of a gun vary, and yet they are limited by its very materiality. A gun is not a useful device for learning how to swim, and it cannot symbolize the medical achievements obtained in cancer treatment. In Webb's (2003: 411) words then "the goal is to open up social analysis to the historicity and social power of material things without reducing them either to being only vehicles of meaning, on the one hand, or ultimate determinants, on the other."

The present paper proposes Peirce's semeiotics as one possible methodological apparatus for achieving this goal. It first highlights the advantages of focusing our attention on material signs, including artefacts and practices, as conveying ideational and material structures. The paper then introduces Peirce's epistemology, which is based on the assumption that even though we know reality only via the mediation of signs, material reality enters to some extent directly into the sign system. Subsequently the paper highlights the ontology of a Peircean semeiotics with its focus on the interpenetrated nature of the ideational and the material, which creates possibilities for non-purposive, yet constitutive and non-deterministic change. It then develops a specific research method and strategy derived from the tools provided by Peircean semeiotics, with a particular emphasis on the index as including a causal/functional component in signification and the icon as including an element of phenomenological perception, while simultaneously maintaining with the symbol a focus on meaning instituted by social convention. The last section demonstrates how Peirce's semeiotics can be applied to analyse the effects of innovations in mapping techniques on the conception of the territorial state (Branch, 2014).

Before proceeding, a note of caution is called for. The goal of the present analysis is not to provide an authoritative account of Peirce's theory, but rather to demonstrate the usefulness of Peirce's semeiotics as a tool for International Relations analysis. Peirce's insights are scattered across a range of longer and shorter writings, and the lack of single, synthetic work makes indentifying a unified account difficult. On the one hand this has led to a considerable neglect of his work (Hookway, 1992; Short, 2007; Short, 2004). On the other hand it has contributed to significant disagreements among Peirce scholars about how to interpret the often incomplete and at times contradictory sketches Peirce has bequeathed to posterity (see for example Liszka, 1996; Short, 1996; Short, 2004). The present paper does not seek to arbitrate between

competing interpretations of Peirce's work, but rather to highlight how a Peirce-inspired methodology can solve some of the emerging issues in IR scholarship.

2 Signs as the micro-level instantiations of macro-phenomena

It is impossible for the individual to perceive the totality of a given territory, the entirety of the state or the full reach of globalization (Gottdiener, 1995; Smith, 2008). For example Cameron and Palan (1999) have remarked how globalization is curiously marked by its absence. Always spatially and temporally detached from us, it is located in the distance and in the future. How then can we know that such abstract and enormous entities exist if they can never be encountered in their totality? How can we gain a complete picture of their nature, if we only ever experience them in bits and pieces?

Conventional IR scholarship offers two possible answers to this question. On the one hand, Constructivists, Idealists, and Interpretivists suggest that intersubjectively shared ideas, norms and principles, either as normative structures or as the aggregate of individual thought processes, establish the existence of abstract concepts. Alternatively, materialists, such as Realists and Marxists, pursue a functional logic. They hold that abstract concepts are unobservable material structures; they exist because they have material effects. In the first case there is the assumption that cultural values define how we conceive the world, "a world of surfaces on to which we project significance" (Graves-Brown, 2000: 4), in the latter case there is the understanding that the material world determines our cultural conceptions, that "the social only operates as an intermediary – transports material without changing it in any way" (Latour, 2005: 84).

A third, and relatively new, alternative is to combine the two approaches into one, for example by proposing a dialectics that operates between the intersubjective and the objective. While this new form of bracketing, following in the footsteps of its antecedent – the alternate bracketing of agency and structure – can be a useful heuristic device;ⁱⁱⁱ its ontological foundations are questionable. To use Latour’s (2005: 75) example, it does not make a lot of sense to imagine on the one hand a group of naked soldiers and on the other hand a mountain of military equipment and uniforms and to suggest that there is some form of interaction between the two.

Rather than relying on the power of invisible ideas or unobservable material structures, I suggest to follow an approach of cultural phenomenology, which “restitutes embodiment and materiality within sociocultural contexts, combining the phenomenological focus on corporeality, perception, and modes of being-in-the-world with a constructivist, representational, or semiotic analysis” (Richardson and Third, 2009: 148). More precisely, a focus on perceivable signs, on artifacts, and practices as signs, in addition to language, permits us to understand how the abstract becomes concrete and hence imaginable. The distant becomes local, the enormous overseeable, and hence conceivable, because it can be sensually perceived in signs. A focus on signs provides a way to understand how the subjectively held beliefs of individual actors can be intersubjectively shared social facts.^{iv} The macro-level, “as part of our structures of relevant orientation” (Coulter, 2001: 34) becomes knowable through its micro-level instantiations. This requires a shift in focus away from the disembodied concepts of high politics and towards the concrete local and place-bound everyday manifestations of political activity.

It is not merely the case that without signs we would have difficulties to conceive of the abstract, the enormous, and the distant. At least as importantly, without signs, it would be impossible to maintain the reality

and the existence of these entities. Signs “bring these [macro] phenomena to life” (Coulter, 2001: 34), because “social ties alone have little durability, and cannot extend very far in time or space, without being embodied in more permanent material” (Deudney, 2007: 1939). An investigation of signs then directs our attention towards the concrete materials, which are necessary to sustain the abstract concepts that are often taken for granted in social science research (Latour, 2005; Pouliot, 2010; Walters, 2002).

However, as materials in the world, signs do not just depict abstract concepts, but they also lend themselves to particular forms of action and not to others. They are the material devices which structure our thought processes and through which our thoughts act upon the world. For example, maps do not only depict the territory of a given state and thus constitute it; they are also useful tools for military generals in developing war-making strategies. An army general draws his army’s marching routes or battle formations on a map. The solution for winning a given battle emerges from the manipulation of the map, rather than from a purely mental process.

In order to highlight the material effects signs have as things in the world, and to simultaneously avoid pure functionalism, some authors attribute agency to things (Gell, 1998; Latour, 2005). Artifacts are agents, because once they have been created by their producer according to a certain logic, they will not necessarily be used in line with that logic (Bourdieu, 1990: 97; Laffey and Weldes, 1997). Entirely unanticipated by their designer, artifacts, like language and practices, develop a life of their own that has constitutive effects on their users; they simultaneously enable and constrain multiple possible uses (Gell, 1998; Latour, 2005; Pouliot, 2010).

A focus on material signs then permits the researcher to highlight the causal and constitutive effects of visible things that would remain hidden in conventional social science research (Coulter, 2001; Graves-Brown,

2000; Laffey and Weldes, 1997). When directing our attention to signs it is unnecessary to either rely on unobservable thought processes located in the mind of the individual^v or on hidden structures located on its outside,^{vi} but instead we can focus on the visible and public ways through which signs actively constitute the intersubjectively shared reality (Laffey and Weldes, 1997; Schatzki, 2001; Thevenot, 2001). Following Clifford Geertz's famous quote: "Ideas are not, and have not been for some time, unobservable mental stuff. They are envehicled meanings, the vehicles being symbols (or in some usages signs), a symbol being anything that denotes, describes, represents, exemplifies, labels, indicates, evokes, depicts, expresses – anything that somehow or other signifies. And anything that somehow or other signifies is intersubjective, thus public, thus accessible to overt and corrigible plain air explication (1980: 135)."

A number of scholars in the political science literature have already noted the causal and constitutive impacts signs have in establishing shared collective identities and imaginings, interpretive frameworks or material state structures. In 1967 Michael Walzer remarked that "the state is invisible; it must be personified before it can be seen, symbolized before it can be loved, imagined before it can be conceived" (Walzer, 1967: 194). Accordingly, it has been studied how representative forms such as archives, maps, novels, newspapers, censuses, statistics, or national accounts create an image of the state (Bourdieu and Wacquant, 1994; Branch, 2014; Laffey and Weldes, 1997; Scott, 1998) and the nation (Anderson, 1983), and how such things as fences create, rather than merely demarcate, its boundaries (Agnew, 2009; Sack, 1986). Other scholars have analyzed how the state has to be recognized externally in order to be sovereign, i.e. how it is necessary to "fabricate effective symbols of legitimacy and representations of sovereignty" (Adler-Nissen, 2008: 82), such as government buildings, flags, salutation ceremonials, cultural and technical achievements presented in the form of diplomatic

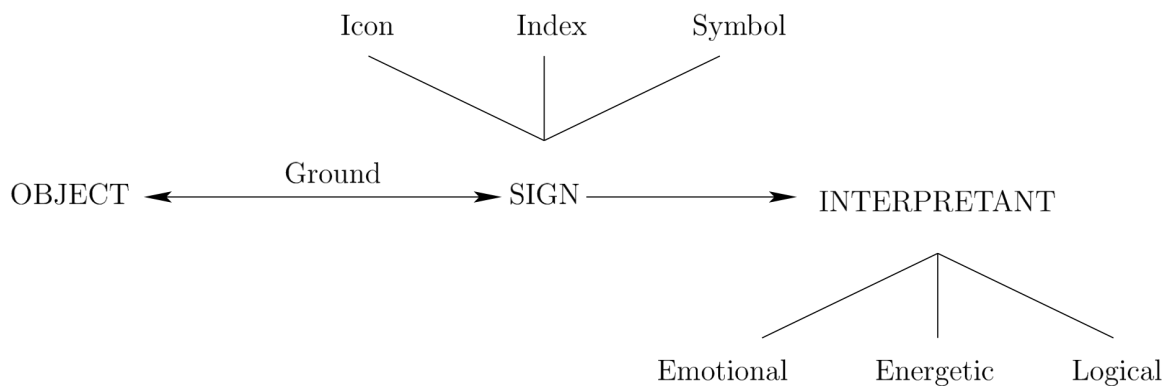
gifts (Hartmann, 1988), or opt-out clauses in the European Union (Adler-Nissen, 2008). Taking the opposite route, Michael Shapiro (1988) analyzed the political in signs such as biographies and photography.

However, so far there is no methodological apparatus in IR scholarship that would allow us to study systematically the ways in which elements of the material world signify and communicate. Discourse analytical approaches fall short in that they are based on the linguistic model of signification, which pre-supposes that the object a sign represents is arbitrary from the materiality of the sign, just as a word such as dog is arbitrarily attributed to the barking being with four legs and a wagging tail. Alternatively, positivist approaches assume only causal relations between elements in the material world and do not account for the possibility of material constitution. In the following I will propose Peircean semeiotics as a methodology that provides a systematized way to eliminate the gap between ideational constitution and material causation.

3 Peirce's semeiotics

Before delving into an in-depth analysis of Peirce's semeiotics, I will first provide a brief overview of his basic semeiotic apparatus. This sketch can serve the reader as a roadmap to which she can return for orientation when getting lost in the argument: Peirce's semeiotics is based on tripartite divisions, the most fundamental of which is his tripartite division between an object, a sign, which represents the object, and an interpretant, which is the potential for interpretation resulting from the sign. A sign represents an object thanks to a ground, which is the relation that links the sign to the object. Depending on that relation we classify signs into icons (representing based on similarity), indices (representing based on a causal or contiguous relationship) and symbols (representing based on a social convention). It is noteworthy that the

arrow between object and sign runs in both directions, because at times the object leads to the creation of the sign, while at other times the sign creates its object. Lastly, the sign brings about a particular interpretant, which is the possibility for interpretation. The interpretant can be classified into three possible forms of interpretation: emotional (resulting in feelings), energetic (resulting in action), and logical (resulting in thoughts). The graph below provides an overview of these tripartite divisions and the following sections will analyze them in more depth.



3.1 Peirce’s epistemology: a compromise between scientific realism and post-foundationalism

Peirce’s ontology, epistemology, and methodology are all based on the fundamental premise that reality is always mediated by signs. While we know reality only via the mediation of signs, the connection between material reality and signs is not always arbitrary. Hence, material reality itself can partly enter into the sign system. Precisely because material reality enters into the sign system, albeit incompletely, it provides a check on the meanings attributed to signs. Furthermore, because every sign is by its nature interpretable – it can be interpreted by provoking an emotion, an action, or a thought – signs can have material effects; they can result in a change of material reality. At times signs can even create the reality they are supposed to represent (Peirce, 1931, Vol. 8: 178). For

example Branch (2014) makes a convincing argument how changes in techniques of map making had an effect on the emergence of territorial states.

Interestingly for IR scholarship, Peirce's epistemology provides a middle path in recent epistemological debates between various interpretations of pragmatism on the one hand and different perspectives of scientific realism on the other hand; all undertaken with the objective in mind to identify a philosophical foundation for a form of cohabitation (Kratochwil, 2007), cooperation (Sil and Katzenstein, 2010) or even synthesis (Hellmann, 2003) between the various isms in the IR discipline. While scientific realists (Wight, 2006; Patomaki and Wight, 2000) argue that ontology, the real world, should function as an arbiter between theories, many pragmatists (Kratochwil, 2007), postfoundationalists (Pouliot, 2007) and monists (Jackson, 2008) claim that access to the world is always mediated by language. Claims to knowledge are nonetheless not arbitrary, because the community of scholars in a discipline judges the appropriateness of method and theory with the help of intersubjectively shared rules (Kratochwil, 2007).^{vii}

While Peirce's epistemology agrees with pragmatist and postfoundationalist perspectives that reality is always mediated by signs, Peirce's conception of sign systems differs from the conventional understanding of sign systems, which focuses on language as the model for all other sign systems to follow. With the exclusive focus on language we establish the arbitrariness of the relationship between the sign and the object it represents, as most words (signs) in any language are arbitrary from the material objects or concepts they represent. Words represent a given object because of an intersubjectively shared norm. Meaning then results from the relations between words, rather than from the objects they are supposed to represent (Doty, 1993; Hansen, 2006; Milliken, 1999). Thus two distinct layers are created, a layer of material reality and a layer of the ideational or linguistic realm.

By contrast, as we will see in more detail below, Peirce distinguishes between three types of signs, each of which has a different relationship to reality. The symbol is the typical linguistic sign; it represents reality by arbitrary social convention. However, reality can also be represented by a relationship of contingency (index), or by a relationship of resemblance (icon). The function of the index is crucial for Peirce's semeiotics, because the index establishes a bridge, a direct material/ physical connection between a sign system and reality. With the help of the index it is possible to distinguish between the actual world and the world of imagination, between the shoot out in the park and the murder in Agatha Christie's novel, because indices are those signs, which demonstrate that the shoot out actually took place. This distinction between reality and fiction cannot be undertaken by pure description, since with pure description we would effectively get caught up in the circle of infinite signification where one sign relates back to another sign, without ever directly relating to material reality (Short, 2007). The invention of the index permits a partial connection between material reality and the sign system. While reality is known to us only through mediation, reality itself, at least partly, becomes incorporated in mediation.

Furthermore, signs need to be interpreted through emotions, actions, or thoughts, and in real life this interpretation is fallible. Thus, even if all the signs were to accurately represent reality (which is not the case, because the relationships between signs and reality are considerably more complex), we would still make mistakes in our interpretations of those signs. According to Peirce only after an infinitely long process of inquiry conducted by a boundless, democratic community of scientists driven by the sole purpose to identify truth, would it be possible to have guaranteed accurate interpretation.^{viii}

3.2 Peirce's ontology: a rejection of the dualism between the material and the ideational

Peirce's semeiotics is based on an understanding of the continuity between mind and nature. The effects of our thoughts are displayed in the environment so that we cannot discern a clear boundary between the two (Short, 2007: 9). Clark (1997) notes similarly that we tend to externalize our mind onto the world. We use for example a pen and a piece of paper in order to make complicated calculations, or when we write on a computer we move chunks of text around on the screen in order to organize our thoughts. Our thought processes are not purely ideational, but inextricably linked to the manipulation of material objects.

According to Peirce "it is much more true that the thoughts of a living writer are in any copy of his book than they are in his brain" (Peirce, 1931, Vol. 6: 364).^{ix} A book is neither purely material nor purely ideational, but rather a combination of the two, even though an excessive focus on "symbols, which signify via arbitrary convention, has led [scholars] to treat 'material qualities' of a sign, such as a word's letters, as entirely irrelevant to its signification" (Legg, 2008: 225). In contrast, Peirce focused on the "concrete instances where the specific material quality of a sign enables it to function as the precise kind of sign it is, thus in turn enabling the precise kind of reasoning it makes possible" (Skagestad, 2004: 251/ 252). For example perspectival painting operated as a sign system that permitted Renaissance artists to identify new geometrical regularities.

In Peircean semeiotics material objects (and one might add practices) function as signs, but not as pure linguistic signs. If we are serious about maintaining the materiality of the sign as a thing in the world, we have to acknowledge that it can serve particular functional purposes, and that it can have a price, next to conveying a particular meaning

(Gottdiener, 1995). The meaning a sign communicates can then be related to the functional purposes it serves as a thing in the world or to the price it costs, but a sign's meaning can also be partly independent from these factors and attributed by social convention. For example, if somebody wears a fur coat, it signifies primarily that the person is cold, but on a second level it can also signify that the person is rich, and on a third level it might signify that a person does not care about animal rights, is of an elevated social status or is fashion conscious (Gottdiener, 1995). Any thing can adopt numerous possible significations depending on social context, but not any signification is possible, as the very materiality of the thing puts limits upon its signification.

In semeiotic terms the crucial distinction between recognizing the possible functional purpose a sign can serve as a thing in the world, versus conceiving of it merely as another discursive element, is that in the first case we create room for non-intentional signification, whereas in the second case only intentional communication is possible (Gottdiener, 1995). For example, when I carry my bike helmet with me I merely intend to protect my head from the hazards of road traffic, but to the observer who sees me, I signal that I bike, rather than drive a car. That might further signal that I am sporty, maybe even environmentally conscious, or maybe just too poor to own a car, without me intending to communicate any of these things. In Peirce's semeiotics in particular the index allows for the possibility of non-intentional signification, as it establishes causal and contiguous relations characteristic for the functional purposes a sign can serve. The possibility of non-intentional signification is missing from the traditional linguistic model of signification, because the signifier is by definition always arbitrary and hence can serve no other purpose than intentional communication. The possibility of non-intentional, yet non-deterministic change, results precisely from the potential of non-intentional signification.

3.3 Towards a method of Peircean semeiotics

With these ontological and epistemological foundations, Peirce's semeiotics permits us to de-codify material and linguistic forms of representation. We can do so by tracing how the combined effects of Peirce's tripartite division of signs into icons, indices, and symbols^x establishes a rich sign system with a variety of communicational patterns. These in turn result in emotional, energetic, and logical interpretants that subsequently alter the reality that will enter the sign system.^{xi}

The first step of this method is to search for signs that represent the objects we are interested in by gathering qualitative data that will serve as the raw material for the analysis. Depending on the subject studied and on data availability any of the existing methods of data gathering can be useful, including participant observation (Burawoy, 1991), qualitative interviews (Rubin and Rubin, 2005), archival research (Trachtenberg, 2006), site-visits, Museum and exhibition visits (Yanow, 2000), or secondary literature researches.

The next step is to identify the grounds upon which the signs that have been collected represent their objects. The ground is the relationship that connects the sign to the object; it is the reason why a sign represents a given object. In other words, not every characteristic of the sign is important for establishing its representativeness. For example, a color-filled map of a country represents that country's territory, because it resembles the country's shape and is causally connected to its geography by surveying techniques, but the concrete color used for filling the map is irrelevant. Furthermore, different signs can represent the same object, in each case focusing on a different ground (Short, 2007). Thus while a map is simultaneously indexically and iconically linked to the country, a flag represents a country by social convention. Peirce classified signs into icons, indices, and symbols based

on the ground that connects the sign to its object. This tripartite differentiation provides the researcher with a vocabulary that directs her attention to the different relations by which signs can signify a particular meaning.

3.3.1 The index

It is probably easiest to first identify the indexical relations between signs and their objects, because the index establishes a direct physical connection to its object (Skagestad, 2004). This physical connection exists independently of any social convention (Atkin, 2005). Index and object can be physically connected in two different ways. First, the object and the index can be connected on the basis of spatial and temporal proximity (Goudge, 1965; Liszka, 1996: 38). For example, many religious sites derive their significance either from being the location of a particular event or from containing holy relics. There is a material and irreplaceable relation between the religious site and the holiness it represents, even though it is not a functional relation. Second, a causal relationship can exist between an index and its object, either based on the need of financial resources for obtaining a particular sign or because of a functional link that connects the sign to its object. For instance, the feudal castle represented the power of feudal lords in part because it protected them from raiding bandits.

Quantitative research makes use of the index when employing 'proxies' as measurable variables, which are causally related to potentially immeasurable phenomena: GDP as a measure of the size of the economy is a case in point. However, it is worth noting that the causal relationship inherent in the index differs from the positivist understanding of causality, as the indexical causality is merely a causality between an object and its sign. It does not necessarily establish causality between a dependent and an independent variable as two phenomena of a real and unmediated world.

We can often identify the existence of an indexical relation between an object and a sign in language usage with the help of the rhetorical device of metonymy. Metonymy is a common linguistic practice that signifies the use of “one entity to refer to another that is related to it” (Lakoff and Johnson, 1980: 35). “Metonymic concepts are grounded in our experience. In fact, the grounding of metonymic concepts is in general more obvious than is the case with metaphoric concepts, since it usually involves direct physical or causal associations” (Lakoff and Johnson, 1980: 39). Lakoff and Johnson provide as examples common usages such as “Wall Street is in a panic” or “the White House isn’t saying anything” (Lakoff and Johnson, 1980: 35-38).

3.3.2 The icon

As the indexical relationship merely establishes a material connection between a sign and its object, it is subsequently necessary to deduce specific characteristics of the object from the sign at hand. One way of doing this is to identify an iconic relationship between a sign and an object (which can at times also exist independently of an indexical relationship). An icon represents an object because of a similarity in a particular characteristic the sign shares with the object. The resemblance that relates an icon to its object can be sensory—for example, a pictorial resemblance. The portrait of a king is an icon in the sense that it resembles the king. But Peirce also considered music an icon, because it incarnates musical feelings, which are its object (Short, 1996).

Furthermore, the relationship between icon and object can be a structural resemblance, in which case “[the icon’s] parts should be related in the same way that the objects represented by those parts are themselves related” (Legg, 2008: 207). For example accounting techniques are based on these structural resemblances. In more general terms, analogies are a typical example, because they establish a

relational resemblance, where the relation between A and B is the same as the relation between C and D (Liszka, 1996). Another category of icons that represent through structural resemblance is diagrams; a typical example is a graph representing economic growth in a given country.

Icons as means of signification can be found outside of language and cognition; Peirce considered icons typical for the fine arts (Short, 2007), where they can lead in particular to emotional interpretants, i.e. they evoke feelings rather than thoughts. It thus becomes apparent that iconic representation can be material in two respects. On the one hand, the sign, the icon itself, can be material – an artifact, a practice, or a natural occurrence – or the icon can also be a linguistic expression, metaphors being a case in point. On the other hand, the icon is material in the sense that in its pure form the icon represents its object solely on the basis of similarity. Hence the object can be inferred from the icon through unmediated phenomenological perception, directly by the senses and through the body, without the need for intersubjectively shared rules (Kolenda, 1977). The pure icon is a non-arbitrary sign, although we will see that few signs exist in this pure form.

3.3.3 The symbol

Lastly, in order to determine a symbolic connection between a sign and its object, it is necessary to identify the intersubjectively shared understanding that underlies the signification of a symbol. The symbol represents a particular object only because there is shared background knowledge that it does so. Symbols have the same characteristics as all signs in the conventional linguistic understanding of sign systems. Hence it is useful to apply the usual discourse analytical tools to the study of symbols (Doty, 1993; Hansen, 2006; Milliken, 1999). Most, but not all, words are typical examples of symbols, but material artifacts or practices can equally be of a symbolic nature (Liszka, 1996). For

example, medieval paintings related the size of a person in a painting to her social status rather than to the rules of perspective.

3.3.4 Complex signs: combinations of icons, indices, and symbols

The three categories of signs – icon, index, and symbol – are irreducible to each other; each fulfills a distinct function in semeiosis, which cannot operate if any one of them is missing. At the same time it is very hard to find a sign that is a pure icon, index, or symbol. It is rather common to find complex signs incorporating a mix of these three categories (Atkin, 2005; Hookway, 1992; Legg, 2008). Typical examples of signs, which combine iconic and indexical components together, are a person's shadow, or a photograph (Savan, 1987). These signs have a resemblance to the objects they represent, and there is a direct causal relationship between sign and object. Demonstrative pronouns are combinations of symbols and indexes, because they are different in each language, and at the same time they incorporate an unmediated relationship to an object marked by spatial and temporal proximity (Atkin, 2005; Savan, 1987). Lastly, the just mentioned forms of representation in medieval paintings are an example of signs composed of symbolic and iconic components. Disentangling signs according to the different grounds based on which they represent an object can help researchers to identify the functional and symbolic connections between signs and their objects.

The combined effects of icon and index permit signs to simultaneously refer to an object, which is the indexical part, and characterize that object, which is the iconic part (Liszka, 1996). In Peirce's understanding the arbitrary connection between symbol and object hinges on the non-arbitrary functions of index and icon (Sorrell, 2004). Over time the connection between index and object can grow into the emergence of general conventions and rules (Short, 2004). Thus we might be able to establish a temporal sequence during which the sign changes its function from index to icon to symbol (Goudge, 1965; Legg,

2008; Short, 2007: 227). Process-tracing such temporal progressions of changing forms of signification can be a powerful tool to understand how certain social conventions develop or how symbolic significations emerge.

A popular constructivist example of intersubjectively shared norms is the functioning of money. According to the conventional constructivist understanding money can only function as a medium of exchange if it is accepted and recognized as such within a given community. Constructivists highlight the symbolic nature of money when they rightly claim that whales' teeth are unlikely to be accepted as a medium of payment in a North American supermarket, even though they might still be accepted on the Fijian islands.

While I do not want to deny the symbolic nature of money, a more historical perspective suggests that indexical and iconic features played a crucial role in the emergence of particular forms of money. Especially in its earlier stages of development, money had to fulfill certain material and functional characteristics — specifically, the objects serving as money had to be transportable, relatively rare, quite hard to counterfeit, and easily divisible. Precious metals were one type of material that fulfilled these criteria. A cursory glance at monetary development in Western Europe demonstrates that during the Middle Ages the nominal value of a coin was initially equivalent to the value of the metal out of which the coin was made. An indexical and an iconic relationship existed between a coin's nominal and intrinsic metallic value. But over time, in order to overcome budgetary difficulties, the princes who had the right to coinage began to debase the currency. So-called "token money" emerged. The nominal value exceeded its metallic content, although the coins looked the same. The indexical relation between the coin and its value disappeared, whereas the iconic relation remained intact. Although this maneuver was initially considered a fraud, in the sixteenth and seventeenth centuries economists started to suggest that it was necessary to have token money in circulation for the smooth functioning

of the economy, as long as the supply of coins did not exceed the demand for transactions (Cipolla, 1956). Thus, a social convention gradually emerged, and a symbolic character was added to the relation between coins and their value. Towards the end of the 17th century banknotes came into circulation (Braudel, 1979: vol. I, 414-418). By then the relationship between money and its value ceased to be an iconic one, and became a symbolic relation based on a shared rule of accepting those pieces of paper as money.

3.3.5 The interpretant

The last step of the analysis is to identify the interpretant. The interpretant is the potential for interpretation or misinterpretation that is inherent in a sign (Skagestad, 2004; Sorrell, 2004). In Peirce's understanding signs are usually interpreted in relation to other signs (Gottdiener, 1995). The context of a given situation matters for completing the meaning of a sign, as do the historical experiences and knowledge of the interpreter, "the collateral information" (Metro-Roland, 2009: 274). Depending on context, a sign can stand for different interpretants (Short, 2007). Thus the palace of Versailles with its adjacent gardens signified glory and prestige to Louis XIV, while it came to represent a fear of supremacy to other rulers, which provoked them into a balancing alliance against the Sun King (Mukerji, 1997).^{xii}

The researcher's task is to trace the connections between sign and interpretant and identify how particular components of a sign, given a specific context and collateral information, lead the actors to feel, act, or think in certain ways. A first approach can be to draw "on the researcher-analyst's participative experiences as proxy for others' behaviors and actions: Through those firsthand, immediate experiences the analyst gains entry into understanding others' responses" (Yanow, 2000: 64). Nonetheless, these experiences of the self should be further backed up by interviews or documentary analysis in order to identify

other people's responses to a particular sign in a given context and relate those to their historical experiences and knowledge (Yanow, 2000).

Peirce's semeiotics represents a crucial innovation over conventional semiotics, because it includes the interpretant, which can result in an emotion, an action, or a thought. This means that the infinite circle of intertextuality is broken and the meanings conveyed by signs can result in real, practical effects. In this sense, Peirce's semeiotics differs from a postmodern conception of language (Short, 2004), where a sign leads to a thought, which results in another sign, which leads to another thought, without ever having any effect on material reality.

The proposed method provides one way to highlight the profound interconnectivity of the material and the ideational. At the same time, other methodological approaches have different advantages and it is possible to combine Peircean semeiotics with other tools. For example, a Peircean semeiotics can be included as one component in a broader "subjectivist" approach (Pouliot, 2007), or maybe vice versa. Peirce would not have considered his semeiotics to be incompatible with abduction, a concept he himself invented. One of several ways in which he related abduction and semeiotics was to suggest that the semeiotic apparatus permits the analysis of signs that provide the material from which abduction can develop.

4 The effects of cartography on the conception of the territorial state

By now most authors agree that the development of the territorial state was a prolonged process, which reached its completion in the first half of the 19th century, even in such cases as France or Spain (Anderson, 1961; Black, 1990; Branch, 2014; Osiander, 2001; Teschke, 2003). Until the end of the 18th century it was common for monarchs to rule over discontinuous territory, and in particular frontier zones were marked by

a haze of overlapping jurisdictions and intersecting rights pertaining to different rulers and local communities (Anderson, 1998; Sahlins, 1989; Wolf, 1970). Various taxation regimes co-existed under the rule of one monarch. In some cases a foreign ruler taxed the local population, in other cases there were tax exemptions, such as for the church in many countries under catholic rule (Kann, 1974), and in still other cases, for example Hungary, at the time a part of the Austrian monarchy, the local estates were so strong that the monarch could barely excise any taxes from the land. Gagliardo (1991: 273) notes for the case of the Austrian monarchy in general that the situation was so diffuse that “nothing even faintly resembling a comprehensive overview of the monarchy’s finances was possible: income could not be predicted (or even properly accounted for), [and] budgeting was a wild guessing game...” Similarly for the case of France, Langins (2004: 49) states “it takes a foolish temerity to claim anything close to a precise knowledge of government budgets during the Old Regime.” Overall then the monarch did not have a unified and even control over the entire territory under his or her rule and the acquisition of new land did not necessarily signify a calculable increase in material wealth, or an enhanced geostrategic position (Sahlins, 1989).

Rulers nonetheless started to conceive from the second half of the 17th century onwards of the territorial state as the main unit of international relations and of European order in terms of a territorial balance of power (Anderson, 1998; Luard, 1992; Schroeder, 1994). An increase in the territorial extent of rule was conceived as a threat to the balance of power, and it was the most common cause of war (Holsti, 1991: 49). By contrast, an increase in the weapon arsenal, the number of soldiers, wealth due to tax reforms, or enhanced administrative efficiency, all components which could increase the material capabilities of a state, were not considered to influence the balance of power (Anderson, 1998; Holsti, 1991; Schroeder, 1994). While purely material/functional factors cannot explain this focus on the territoriality of states,

purely ideational factors exemplified in developments in political theory also have difficulties explaining the phenomenon, given that the theoretical elaboration of the territorial state with linearly demarcated boundaries only appeared in the 1750s (Branch, 2014; Elden, 2013).

We can explain the apparent paradox by focusing on particular signs and on the kinds of information the available signs could convey. At a time when reliable statistics were not available, it was difficult to conceive of and communicate many of the potential sources of material capabilities. By contrast, a number of concrete signs, such as Cartesian maps (Branch 2014), the invention of linear perspective (Ruggie, 1993), or the garden design of palaces (Mukerji, 1997), led to the conception of the territorial state as a unit in international relations and territory as a conceivable source of power, at a time when a full control over that territory was not possible.^{xiii} In the following I will illustrate the usefulness of Peirce's semeiotics with the help of Branch's (2014; 2012; 2011) analysis of the impact of Cartesian maps on the emergence of the territorial state.

4.1 The symbolic and iconic features of medieval maps

Medieval forms of mapmaking contained symbolic and iconic features, but they did not link the land on the map to the terrain indexically. *Mappae mundi* were world maps filled with religious symbolism and a schematic division of the world into several continents (depending on the type of map). Itinerary maps contained symbolic depictions of the places one would encounter on a journey and an iconic structural resemblance of geographic distances expressed in periods of time it would take to cross those distances. Lastly, Portolan charts provided iconic representations of the coastlines with a symbolic highlighting of the places that were considered to be of particular importance. Based on observations at sea they could depict individual geographic features,

directions, and angles accurately, but they did not represent the sizes of those features and the distances between them proportionally (Edgerton, 1975; Rees, 1980; Smith, 2008; Woodward, 1985). Overall then maps did not portray a unified space, but rather disconnected places to which differential degrees of importance were attributed with the help of iconic and symbolic features. Many maps served primarily decorative purposes; they were considered a kind of painting (Branch, 2014; Smith, 2008). In fact Rees (1980: 65) remarks, “the approaches of mapmaker and painter and the forms of maps and paintings were often so similar that no clear distinction could be made between practitioners or their products.” The observation finds confirmation in the fact that usually the same terminology was employed when referring to either maps or paintings.

4.2 The emergence of Cartesian maps with their indexical features

In the early 15th century the translation of Ptolemy’s ancient manuscript about projection methods for mapmaking, the establishment of “principles of mathematical perspective” (Rees, 1980: 69), and the subsequent development of mapping techniques (Edgerton, 1975), laid the foundations for a systematic indexical connection between the geographical terrain and its cartographic depiction. The concrete method that was employed in order to represent the land on a two-dimensional map was the division of the world into longitudinal and latitudinal axis, i.e. into a grid, that could then be “projected on a flat surface” (Rees, 1980: 67) with the help of projective geometry (Edgerton, 1975; Kline, 1953). This grid is the sign system that established the uniform and measurable geometric space of modernity that was the precondition for the division of political space along clear lines (Edgerton, 1975; Sack, 1986).

It took until the early 16th century for the modern type of maps to spread throughout Europe. Once modern maps emerged, their diffusion across the continent was facilitated by the invention of the printing press (Branch, 2014; Revel, 1991; Smith, 2008), so that by the 1600s millions of maps were in circulation. Children learned about Cartesian maps in schools, they were hung on the walls in the homes of aristocrats as aesthetic objects and collectors' items, and they became generally ubiquitous by being displayed on a range of artifacts. For example, they "were also printed on playing cards, woven into tapestries, engraved on medals, and used in biblical illustrations" (Smith, 2008: 67).

Given that modern maps initially developed without the input of rulers, the resulting effects in terms of spatial conceptualizations emerged unintentionally. The practice to uniformly color the territories on a map up to a linear boundary even further highlighted the homogenous nature of territory. It was initially undertaken for purely aesthetic reasons, to make maps into more beautiful artifacts (Branch, 2014). In other words, the coloring of maps resulted from their functional purpose to serve as decorative items, but it had the unintended side effect to convey the king's power at the expense of the power of feudal lords. Maps portrayed the king's power as they made the alleged extent of his rule visible, while the remaining power of feudal lords and estates became invisible, because overlapping jurisdictions and authority rights were not, and could not, be displayed on the modern map.

Since the geometrical relations indexically link the map to its terrain (and provide the map with its authority), it is assumed that the map is an accurate and objective representation of the land it portrays. The map is understood to resemble the terrain, it is supposed to be an icon of the land. For example, Gomboust, an engineer of Louis XIV and one of the designers of a map of Paris ordered by the king writes in his dedication to Louis XIV "... the other maps of this same city that have appeared up to now have been scorned as entirely false, or at least without measure and

proportion; there is room to hope that this one, having been made according to the rules of geometry, will be esteemed not only because of the great advantages that can be derived for the very service of Your Majesty but also in order that, in the most distant countries, those who have believed the reputation of Paris to be above the truth may admire its greatness and beauty” (in Marin, 1988: 174).

To be sure, even mapping technologies based on geometric projection methods cannot avoid some form of distortion and are therefore not *the* accurate way of representing land, but only one among several options (Edgerton, 1975; Kline, 1953; Smith, 2008).^{xiv} Nonetheless, seeing the map of Paris appears like seeing Paris. By virtue of the indexical and iconic relationship between the map and the terrain the person seeing the map makes the assumption that everything portrayed on the map also exists on the land, and thus does not necessarily realize the map’s constitutive effects, especially if that person does not have any first hand experience from the land in question. Given that in the 17th and 18th century travel was harder than it is today, rulers, aristocrats and diplomats depended on signs to make themselves an image of the respective kingdom. Maps then introduced several changes to this image.

4.3 Energetic and logical interpretants

Cartesian maps as new types of signs resulted in numerous logical and energetic interpretants. Firstly, on the map the land of a particular kingdom, and especially if it is all filled with the same color, appears as “homogenous and continuous” (Revel, 1991: 158); local distinctions and particularities disappear from view. “Through [the] imposition of a unified representational structure the diversity of the countryside coalesced into the imposed order of the mapped country” (Smith, 2008: 63). It seemed that the king’s control was evenly distributed over the territory demarcated as being under his rule; complex authority structures could

not be represented on the two dimensional surface. Entities such as Italy, which had no form of political institutionalization, were pictured on maps in the same way as entities like France or Spain, which had some degree of centralization (Branch, 2014).

Secondly, once that uniform, geometrically defined space was depicted on the map, it lent itself to demarcate the territory of one kingdom from another by drawing a clear line that would separate them. Throughout the 16th and 17th centuries ever more maps had linear boundary demarcations on them. Thus it appeared on the map that a ruler's authority was delimited by clear boundary lines (Branch, 2014), which affected the ways in which people conceived of the spatial organization of rule. A Jesuit theologian, father Fabri, remarked in 1669 "I have seen children of good birth, who were given a map of Italy, Germany, France, or Spain and could immediately indicate the major divisions using their ruler as a pointer. They traced the borders with the end of it, ..." (quoted in Revel, 1991: 154). Rulers themselves came to use cartography frequently and Sahlins (1989: 37) suggests that the conception of natural frontiers, first rivers and later mountains, emerged from the use and diffusion of maps. A river drawn on a map strongly resembles a boundary line, and cartographers used to depict mountain ranges at frontiers in a different color, thus effectively demarcating boundaries. Apparently the appeal of natural frontiers was so strong that a cartographer could trace "a line of mountains where there were none" (Sahlins, 1989: 60).

Thirdly, on the map countries are located horizontally one next to the other, rather than vertically in a hierarchical relationship (Burkhardt, 1998). To be sure, a country that takes up more space on the map, and hence allegedly possesses more territory, appears more powerful than a country that takes up less space on the map. However, the distinction between countries based on the amount of territory they possess is a measurable difference in degree, rather than a qualitative difference

between kingdoms. It is this horizontal depiction of countries on a map, which formed a fundamental precondition for the establishment of a territorial balance of power as a new ordering system for Europe.

The emergence of Cartesian maps further resulted in a number of different energetic interpretants. Thus the military was among the prime initiators of the development of maps, which it used for the construction of fortifications, the organization of defense, the launching of military attacks, the establishment of battle formations and the organization of supply chains in times of war (Anderson, 1998; Branch, 2014; Langins, 2004; Mukerji, 1997; Revel, 1991; Sahlins, 1989; Smith, 2008). Especially once cannons started to be used in warfare did accurate maps prove beneficial so that soldiers could know along which routes to transport the mounted guns. Accurate maps were further necessary to meet the new demands put on fortifications arising from the need to resist cannon fire (Smith, 2008).

At least as importantly, only after the representative form of modern maps was fully developed, did rulers use them instrumentally to further their own interests. Thus they could ask their cartographers to draw a particular territory as being located inside the kingdom in order to increase the legitimacy of their claims to the land, or they could request that their military campaigns and conquests be made visible on a map to enhance their glory (Revel, 1991). Rulers could even decide to launch a war to gain access to a territory they had convinced themselves to be theirs after they had seen it on a map (Branch, 2014).

Overall then Cartesian maps were a category of signs that contributed to the emergence of the image of the territorial state in the minds of rulers and the aristocracy at a time when the territorial state was materially instantiated only at a few select cities and in very specific signs, such as Cartesian maps, but also the king's palace, or the military frontier (Mukerji, 1997; Sahlins, 1989). The rest of Europe was still set through with feudal structures, but they were barely noticeable from the

king's palace, because their forms of representation had become very pale. The combined effects of these forms of signification led rulers to exercise order in Europe in the form of a territorial balance of power at a time when overlapping structures of feudalism still dominated much of Europe.

5 Conclusion

In a context where new concepts such as practices, emotions, or artefacts have begun to question the Cartesian divide between materialism and ideas, this paper has suggested Peirce's semeiotics as one possible methodology that permits to synthesise material and ideational components into a single framework of analysis. Based on the epistemological foundation that signs always mediate our access to reality, Peirce's semeiotics establishes, by using the concept of the index, a direct, non-arbitrary relationship between a sign and its object that is based on representation by contiguity. Yet, the index merely indicates the presence of the object. It does not denote any of its qualitative characteristics. Icons, which represent by a relationship of similarity, and symbols, which represent by social convention, fulfil this purpose within Peirce's design. This tripartite division of signs, and the fact that any actually existing sign usually combines at least two of these categories, establishes the interconnectivity between material reality and the ideational realm. Furthermore, the tripartite division of interpretants into emotions, actions, and thoughts means that the infinite chain of intertextuality can be broken and the process of sign interpretation can result in concrete action on the world.

This paper has demonstrated the potential of Peirce's semeiotics by analyzing how the introduction of new mapping techniques has resulted in the conception of the territorial state as a unit of international relations. The usefulness of Peircean semeiotics, however, is not limited

to Early Modern Europe, despite the paramount importance of symbolism in that period. In current times, GDP, a sign with indexical, iconic and symbolic elements, is the most significant measure of a state's economic power, with not unimportant effects, for example on voting rights in the IMF. Peirce's semeiotics is an extremely versatile methodology that can be applied for the study of a large number of problems. Peirce himself went as far as saying that, "it has never been in my power to study anything, -- mathematics, ethics, metaphysics, gravitation, thermodynamics, optics, chemistry, comparative anatomy, astronomy, psychology, phonetics, economics, the history of science, whist, men and women, wine, metrology, except as a study of semeiotic" (Peirce, 1977: 85-86).

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ⁱ Cartesian dualism can be defined as the understanding that mind and body, the material and the ideational, are two distinct entities, which can interact with each other, but are ultimately distinct categories.

ⁱⁱ Imperial Armory, Military Historical Institute, Schwarzenberg Palace, Prague, Czech Republic, Visit on the 26th of December 2012

ⁱⁱⁱ During the structuration debate there has been an extensive discussion among constructivist scholars whether bracketing (the alternate analysis of structure and agency, during which the part that is not studied is bracketed, i.e. maintained constant) is a useful heuristic device to study the co-constitutive effects of structure and agency (Carlsnaes, 1992; Hollis and Smith, 1994; Wight, 2006).

^{iv} Rational choice theorists and agent-based constructivists struggle with this shift, because of their difficulties to mark the transition between agency and structure as well as between different levels of analysis (Albert, 2010).

^v Much of rational choice theory makes such assumptions, without realizing though that rationality requires equipment that permits people to externalize at least some thought processes (Latour, 2005; MacKenzie, 2001).

^{vi} For a similar critique see (Latour, 2005; Nexon, 2009)

^{vii} While the controversies between different strands of pragmatism and scientific realism would deserve a more in-depth analysis, space constraints inhibit me from doing so.

^{viii} See for example Sil and Katzenstein (2010) for an application of a similar approach to IR theory.

^{ix} This differs from, for example, Bourdieu (1990) and Searle (1995), who conceive of the habitus and the background as the aggregate of individuals' dispositions and beliefs. Peirce and Popper share the perspective that ideas exist objectively, beyond the individuals' minds. Peirce and Popper disagree, however, in that for Popper (1978) thoughts are located in a World 3 that is causally linked to the World 1 of material objects, whereas for Peirce the material objects are inseparable from the thoughts they contain (Haack, 1977). I would like to thank Emanuel Adler for clarifying this point to me.

^x The classification of signs into icons, indices and symbols is not Peirce's only classification. In his later work Peirce distinguished between up to 66 categories of signs (for more detail see Litzka, 1996 or Short, 2007). However, the distinction between icon, index, and symbol is generally considered the most significant of Peirce's classifications (Hookway, 1992; Litzka, 1996) and it is the most pertinent and useful for our analysis.

^{xi} Peirce's semeiotics can lead to a myriad of other methods (Litzka, 1996; Skagestad, 2004).

^{xii} However, the fact that a sign can lead to different interpretants, does not negate the possibility of a causal and material connection between the sign and its object.

^{xiii} The empirical analyses of these three authors contain elements of a Peircean semeiotic analysis, but without that the authors would systematically discuss their methodological approach.

^{xiv} The distortions introduced by different mapping techniques vary from distortions in angles over distortions in areas, but they cannot be avoided, because portraying the surface of a hemisphere on a plane will always lead to some distortions (Kline, 1953).

References

- Adler, E. and V. Pouliot. 2011. *International Practices*. New York: Cambridge University Press.
- Adler-Nissen, R.. 2012. *Bourdieu in International Relations: Rethinking Key Concepts in IR*. London: Routledge.
- Agnew, J. 2009. *Globalization and Sovereignty*. New York and Toronto: Rowman and Littlefield Publishers, Inc.
- Anderson, M. S. 1961. *Europe in the Eighteenth Century 1713-1783*. London: Longman.
- Anderson, B. 1983. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso.
- Anderson, M. S. 1998. *The Origins of the Modern European State System, 1494-1618*. London and New York: Longman.
- Atkin, A. 2005. "Peirce on the Index and Indexical Reference." *Transactions of the Charles S. Peirce Society* 41(1): 161-188.
- Black, J. 1990. *The Rise of the European Powers 1679-1793*. London, New York, Melbourne and Oakland: Edward Arnold.
- Bourdieu, P. 1990. *The Logic of Practice*. Stanford: Stanford University Press.
- Bourdieu, P. and L. Wacquant. 1992. *An Invitation to Reflexive Sociology*. Chicago: University of Chicago Press.

- Branch, J. 2011. "Mapping the Sovereign State: Technology, Authority, and Systemic Change." *International Organization* 65(1): 1-36.
- Branch, J. 2012. "'Colonial Reflection' and Territoriality: The Peripheral Origins of Sovereign Statehood." *European Journal of International Relations* 18: 277-297.
- Branch, J. 2014. *The Cartographic State: Maps, Territory, and the Origins of Sovereignty*. Cambridge: Cambridge University Press.
- Braudel, F. 1979. *Civilisation matérielle, Economie et Capitalisme, XVe – XVIIIe siècle*. Paris: Armand Colin, 3 vols.
- Bueger, C. and F. Gadinger. 2014. "The Play of International Practice: Minimalism, Pragmatism and Critical Theory." *International Studies Quarterly* forthcoming.
- Burawoy, M. 1991. *Ethnography Unbound*. Oakland, CA: University of California Press.
- Burkhardt, J. 1998. "Auf dem Weg zu einer Bildkultur des Staatensystems. Der Westfälische Frieden und die Druckmedien." *Historische Zeitschrift, Beiheft, New Series* 26: 81-114.
- Cameron, A. and R. Palan. 1999. "The Imagined Economy: Mapping Transformations in the Contemporary State." *Millennium: Journal of International Studies* 28(2): 267-288.
- Carlsnaes, W. 1992. "The Agency-Structure Problem in Foreign Policy Analysis." *International Studies Quarterly* 36(3): 245-70.
- Checkel, J. 2005. "International Institutions and Socialization in Europe: Introduction and Framework." *International Organization* 59(4): 801-826.
- Cipolla, C. 1956. *Money, Prices, and Civilization in the Mediterranean World, Fifth to Seventeenth Century*. Princeton: Princeton University Press.
- Clark, A. 1997. *Being There: Putting Brain, Body and World Together Again*. Cambridge, Massachusetts: MIT Press.
- Coulter, J. 2001. "Human Practices and the Observability of the 'Macro-Social'." in T. Schatzki, K. Knorr Cetina, and E. Von Savigny. Eds. *The Practice Turn in Contemporary Theory*. London: Routledge, pp. 29-41.
- Deudney, D. 2007. *Bounding Power: Republican Security Theory from the Polis to the Global Village*. Princeton: Princeton University Press.
- Doty, R. 1993. "Foreign Policy as Social Construction: A Post-Positivist Analysis of U.S. Counterinsurgency Policy in the Philippines." *International Studies Quarterly* 37(3): 297-320.
- Edgerton, S. Y. 1975. *The Renaissance Rediscovery of Linear Perspective*. New York: Basic Books.
- Elden, S. 2013. *The Birth of Territory*. Chicago: University of Chicago Press.
- Gagliardo, J. 1991. *Germany under the Old Regime, 1600-1790*. London and New York: Longman.
- Geertz, C. 1980. *Negara: the Theater State in Nineteenth-century Bali*. Princeton: Princeton University Press.
- Gottdiener, M. 1995. *Postmodern Semiotics: Material Culture and the Forms of Postmodern Life*. Oxford and Cambridge: Blackwell.

- Goudge, T. A. 1965. "Peirce's Index." *Transactions of the Charles S. Peirce Society* 1(2): 52-70.
- Graves-Brown, P. 2000. "Introduction." in P. Graves-Brown. Ed. *Matter, Materiality and Modern Culture*. London and New York: Routledge, pp. 1-9.
- Haack, S. 1977. "Two Fallibilists in Search of the Truth." *Proceedings from the Aristotelian Society*. Supplementary Volumes 51: 63-84.
- Hansen, L. 2006. *Security as Practice: Discourse Analysis and the Bosnian War*. New York: Routledge.
- Hansen, L. 2011. "Performing Practices: a Poststructuralist Analysis of the Muhammad Cartoon Crisis." in E. Adler and V. Pouliot. Eds. *International Practices*. Cambridge: Cambridge University Press, pp. 280-309.
- Hartmann, J. 1988. *Staatszeremoniell*. Köln, Berlin, Bonn, München: Carl Heymanns Verlag.
- Hellmann, G. 2003. "In Conclusion: Dialogue and Synthesis in Individual Scholarship and Collective Inquiry." *International Studies Review* 5(1): 147-150.
- Hollis, M. and S. Smith. 1994. "Two Stories About Structure and Agency." *Review of International Studies* 20(3): 241-51.
- Holsti, K. 1991. *Peace and War: Armed Conflicts and International Order 1648-1989*. Cambridge: Cambridge University Press.
- Hookway, C. 1992. *Peirce*. London and New York: Routledge.
- Hopf, T. 2010. "The Logic of Habit in International Relations." *European Journal of International Relations* 16(4): 539-561.
- Jackson, P. T. 2008. "Foregrounding Ontology: Dualism, Monism, and IR Theory." *Review of International Studies* 34(1): 129-153.
- Kann, R. 1974. *A History of the Habsburg Empire 1526-1918*. Berkeley: University of California Press.
- Kline, M. 1953. *Mathematics in Western Culture*. Oxford: Oxford University Press.
- Kolenda, K. 1977. "Two Fallibilists in Search of the Truth." *Proceedings from the Aristotelian Society*. Supplementary Volumes 51: 85-104.
- Kratochwil, F. 2007. "Of False Promises and Good Bets: A Plea for a Pragmatic Approach to Theory Building (the Tartu Lecture)." *Journal of International Relations and Development* 10(1): 1-15.
- Laffey, M. and J. Weldes. 1997. "Beyond Belief: Ideas and Symbolic Technologies in the Study of International Relations." *European Journal of International Relations* 3(2): 193-237.
- Lakoff, G. and M. Johnson. 1980. *Metaphors we Live by*. Chicago and London: The University of Chicago Press.
- Langins, J. 2004. *Conserving the Enlightenment: French Military Engineering from Vauban to the Revolution*. Cambridge, Massachusetts: MIT Press.
- Latour, B. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.
- Legg, C. 2008. "The Problem of the Essential Icon." *American Philosophical Quarterly* 45(3): 207-232.

- Liszka, J. J. 1996. *A General Introduction to the Semeiotic of Charles Sanders Peirce*. Bloomington and Indianapolis: Indiana University Press.
- Luard, E. 1992. *The Balance of Power: The System of International Relations, 1648-1815*. London and New York: Macmillan.
- MacKenzie, D. 2001. *Mechanizing Proof: Computing, Risk, and Trust*. Cambridge, Massachusetts: MIT Press.
- Marin, L. 1988. *Portrait of the King*. Minneapolis: University of Minnesota Press.
- Metro-Roland, M. 2009. "Interpreting Meaning: An Application of Peircean Semiotics to Tourism." *Tourism Geographies* 11(2): 270-9.
- Milliken, J. 1999. "The Study of Discourse in International Relations: A Critique of Research and Methods." *European Journal of International Relations* 5(2): 225-54.
- Mukerji, C. 1997. *Territorial Ambitions and the Gardens of Versailles*. Cambridge: Cambridge University Press.
- Nexon, D. 2009. *The Struggle for Power in Early Modern Europe: Religious Conflict, Dynastic Empires, and International Change*. Princeton: Princeton University Press.
- Osiander, A. 2001. "Sovereignty, International Relations and the Westphalian Myth." *International Organization* 55(2): 251-287.
- Patomaki, H. and C. Wight. 2000. "After Postpositivism? The Promises of Critical Realism." *International Studies Quarterly* 44(2): 213-237.
- Peirce, C. S. 1931-1935. *Collected Papers of Charles Sanders Peirce*, volumes 1-6. C. Hartshorne and P. Weiss. Eds. volumes 7-8. Burks. Ed. Cambridge, Mass: Harvard University Press.
- Peirce, C. 1977. *Semiotics and Signifies*. C. Hardwick. Ed. Bloomington, Indiana: Indiana University Press.
- Popper, K. 1978. "Three Worlds." *The Tanner Lecture on Human Values*. delivered at the University of Michigan, April 7 1978, available at <http://www.thee-online.com/Documents/Popper-3Worlds.pdf>, last accessed October 8 2013.
- Pouliot, V. 2007. "'Subjectivism': Towards a Constructivist Methodology." *International Studies Quarterly* 51(2): 359-384.
- Pouliot, V. 2010. "The Materials of Practice: Nuclear Warheads, Rhetorical Commonplaces and Committee Meetings in Russian-Atlantic Relations." *Cooperation and Conflict* 45(3): 294-311.
- Pouliot, V. 2012. "Methodology: Putting Practice Theory in Practice." in R. Adler-Nissen. Ed. *Bourdieu in International Relations: Rethinking Key Concepts in IR*. London: Routledge.
- Rees, R. 1980. "Historical Links Between Cartography and Art." *Geographical Review* 70(1): 60-78.
- Revel, J. 1991 "Knowledge of the Territory." *Science in Context* 4(1): 133-162.
- Richardson, I. and A. Third. 2009. "Cultural Phenomenology and the Material Culture of Mobile Media." in P. Vannini. Ed. *Material Culture and*

- Technology in Everyday Life: Ethnographic Approaches*. New York: Peter Lang, pp. 145-156.
- Ross, A. A. G. 2006. "Coming in from the Cold: Constructivism and Emotions." *European Journal of International Relations* 12(2): 197-222.
- Rubin, H. and I. Rubin. 2005. *Qualitative Interviewing: The Art of Hearing Data*. Thousand Oaks, London, New York: Sage Publications.
- Ruggie, J. 1993. "Territoriality and beyond: Problematizing Modernity in International Relations." *International Organization* 47(1): 139-147.
- Sack, R. 1986. *Human Territoriality: Its theory and history*. Cambridge: Cambridge University Press.
- Sahlins, P. 1989. *Boundaries: The Making of France and Spain in the Pyrenees*. Berkeley: University of California Press.
- Savan, D. 1987. *An Introduction to C. S. Peirce's Full System of Semeiotic*. Toronto: Victoria College in the University of Toronto.
- Schatzki, T. 2001. "Practice Mind-ed Orders." in T. Schatzki, K. Knorr Cetina, and E. Von Savigny. Eds. *The Practice Turn in Contemporary Theory*. London: Routledge.
- Schroeder, P. 1994. *The Transformation of European Politics 1763-1848*. Oxford: Clarendon Press.
- Scott, J. 1998. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven and London: Yale University Press.
- Searle, J. R. 1995. *The Construction of Social Reality*. New York: Free Press.
- Shapiro, M. 1988. *The Politics of Representation: Writing Practices in Biography, Photography, and Policy Analysis*. Madison: University of Wisconsin Press.
- Short, T. L. 1996. "Interpreting Peirce's Interpretant: A Response to Lalor, Liszka and Meyers." *Transactions of the Charles S. Peirce Society* 32(4): 488-541.
- Short, T. L. 2004. "The Development of Peirce's Theory of Signs." in C. Misak. Ed. *The Cambridge Companion to Peirce*. Cambridge: Cambridge University Press, pp. 214-240.
- Short, T. L. 2007. *Peirce's Theory of Signs*. Cambridge: Cambridge University Press.
- Sil, R. and P. Katzenstein. 2010. *Beyond Paradigms: Analytic Eclecticism in the Study of World Politics*. New York: Palgrave Macmillan.
- Skagestad, P. 2004. "Peirce's Semeiotic Model of the Mind." in C. Misak. Ed. *The Cambridge Companion to Peirce*. Cambridge: Cambridge University Press, pp. 241-256.
- Sorrell, K. S. 2004. *Representative Practices: Peirce, Pragmatism and Feminist Epistemology*. New York: Fordham University Press.
- Smith, D. K. 2008. *The Cartographic Imagination in Early Modern England: Re-writing the World in Marlow, Spenser Raleigh and Marvell*. Aldershot: Ashgate Publishing Limited.
- Teschke, B. 2003. *The Myth of 1648: Class, Geopolitics and the Making of Modern International Relations*. London and New York: Verso.

- Thevenot, L. 2001. "Pragmatic Regimes Governing the Engagement with the World." in T. Schatzki, K. Knorr Cetina, and E. Von Savigny. Eds. *The Practice Turn in Contemporary Theory*. London: Routledge, pp. 56-73.
- Trachtenberg, M. 2006. *The Craft of International History: A Guide to Method*. Princeton: Princeton University Press.
- Walters, W. 2002. "The Power of Inscription: Beyond Social Construction and Deconstruction in European Integration Studies." *Millennium: Journal of International Studies* 31(1): 83-108.
- Walzer, M. 1967. "On the Role of Symbolism in Political Thought." *International Studies Quarterly* 82(2): 191-204.
- Webb, K. 2003. "Semeiotics and the Social Analysis of Material Things." *Language and Communication* 23(2-3): 409-425.
- Wight, C. 2006. *Agents, Structures and International Relations – Politics as Ontology*. Cambridge: Cambridge University Press.
- Woodward, D. 1985. "Reality, Symbolism, Time, and Space in Medieval World Maps." *Annals of the Association of American Geographers* 75(4): 510-521.
- Wolf, J. 1970. *Toward a European Balance of Power 1620-1715*. Chicago: Rand McNally and Company.
- Yanow, D. 2000. *Conducting Interpretive Policy Analysis*. Sage University Press.