**‘Diagrammatic Teaching’: The Role of Iconic Signs in Meaningful Pedagogy**

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**Abstract**

Charles S. Peirce’s semiotics uniquely divides signs into: i) *symbols*, which pick out their objects by arbitrary convention or habit, ii) *indices*, which pick out their objects by unmediated ‘pointing’, and iii) *icons*, which pick out their objects by resembling them (as Peirce put it: an icon’s parts are related in the same way that the objects represented by those parts are themselves related). Thus representing *structure* is one of the icon’s greatest strengths. It is argued that the implications of scaffolding education iconically are profound: for providing learners with a navigable road-map of a subject matter, for enabling them to see further connections of their own in what is taught, and for supporting meaningful active learning. Potential objections that iconic teaching is excessively entertaining and overly susceptible to misleading rhetorical manipulation are addressed.

**Introduction**

What is it to teach? Teaching is a distinctively human activity, and as such is sometimes said to be a process of conveying to students not just *data*, or *information*, but *knowledge*. Sharp distinctions between these terms are difficult to draw, but Fred Dretske (1981) has made two useful observations. Firstly, knowledge only exists when located in a broader cognitive framework which gives it significance. So for instance a string of printed numbers constitutes information, but only in an astronomer’s interpretation of these numbers as ‘a new quasar’ does it become knowledge. Secondly, whereas information is generally thought to consist merely in some kind of meaningful representation, knowledge is generally thought to be *true*. So although ‘Paris is the capital of France’ and ‘Berlin is the capital of France’ are both meaningful sentences which could be stored as information, only the former constitutes knowledge (Dretske, 1981).

What is it to teach well? Teaching is arguably ‘good’ to the degree that it renders some knowledge *meaningful* to the student. Such meaningfulness tends to appear in phenomena such as students being engaged by their time in the classroom, wanting to learn more, and continuing to use the knowledge after the teaching (and examining!) of it has ceased. If we wish to submit meaningfulness in education to serious study, then the discipline to turn to is arguably *semiotics*: the theory of signs. This is broader than merely a study of meaning in *language*, as meaning is conveyed by many other kinds of signs than words: consider, for example, facial expressions, mathematical diagrams or street signs. Here I am following the broad outlines of the semiotics developed around the turn of the 20th century by Charles Sanders Peirce, which I consider to be extraordinarily rich and fruitful.

Vincent Colapietro offers what is arguably an alternative high-level understanding of education to that above, describing it as a system of “self-interrogating practices” (Colapietro, 2013, p. 712). To this intriguing alternative emphasis semiotics is obviously also relevant, as an interrogation constitutes some kind of process of putting questions and receiving answers, which must (it seems) also be performed in signs. Once again it bears emphasis that these signs are not necessarily linguistic, since painters (for example, the Impressionists) and musicians (recall the rivalry between The Beatles and The Beach Boys) may be observed ‘interrogating’ and inspiring each other via pictures and songs.

Peirce made profound contributions to semiotics, founding the discipline entirely independently of Saussure, with a different (significantly, triadic) set of foundational concepts. As part of his deep investigations into signs’ structure, purpose and functioning, he was naturally led to speculate (philosophically) about teaching and learning. As a number of scholars, including Lizska, Colapietro and Strand, have highlighted in the 2013 special issue of *Educational Philosophy and Theory* this came directly out of his interest in *speculative rhetoric*, understood as the study of what makes signs spread and develop. Consequently, while there is much truth in Torill Strand’s claim that “Peirce never unequivocally addressed education as an autonomous field of theory or practice” (Strand, 2005, p. 309), his semiotics contains a number of concepts of immense value for thinking about education.

In this paper I will focus on a topic not yet explicitly thematised in this regard, although a notable exception may be Semetsky’s (2013) work on the edusemiotics of images – the *icon*, which Peirce defines in contrast to the *index* and the *symbol*. The icon is the kind of sign that signifies by itself possessing the qualities that it represents. A common example is a map, which represents some geographical feature by itself having (in miniature) a similar shape. This isomorphic functioning renders the icon the only sign capable of conveying *structure*. I will explore a number of ways in which structure is a vital ingredient in effective pedagogy. It is worth noting that − interestingly − structure itself comes in a number of varieties. The kind of structure found in a landscape painting (which we might call ‘pictorial’) differs from that in a mathematical diagram (which by contrast is abstract, ‘ideational’). Below I will examine three kinds of structure that I believe to be relevant to teaching, and distinguishable from one another: *logical structure,* *narrative structure,* and *a structure of conversation between interlocutors*.

Peirce is also famous for his pragmatic maxim, which urges that if we wish to make a concept clear we must imagine specific examples of it in use and in its ‘practical bearings’ – warning that if we cannot do this, we don’t really understand the concept. In the spirit of this recommendation, I will include in this paper a number of specific examples from my own experience as an educator. These examples will specifically concern teaching in Philosophy, mainly because that is my own area, but I see my discipline as sufficiently general to render its example broadly applicable.

**Peirce as Teacher**

To begin with, though, I would to like to devote a few words to what we might call ‘Peirce and Teaching: the Actuality’. Peirce’s tempestuous and in many ways tragic academic career is the stuff of legend (Houser, 1986, 1987) and in a number of accounts (notably Brent, 1998) he is portrayed as a kind of mentally disturbed wild man pacing the halls of 19th century institutions of higher learning. But if one examines more contemporaneous accounts, Peirce would appear to have demonstrated some admirable gifts in the classroom.

Shortly after Peirce’s death the testimonial “Charles S. Peirce as Teacher” was written by Joseph Jastrow, the noted experimental psychologist, whom Peirce taught at Johns Hopkins University in the mid-1880s. Despite 30 years having passed, Jastrow describes vividly and passionately his teacher’s pedagogy and its effect on him. [[1]](#footnote-1) He states, “Mr Peirce’s courses in logic gave me my first real experience of intellectual muscle”, and, “He had the pedagogic gift to an unusual degree, as some men handle a pencil, and others the bow of a violin.” For our purposes, we will take two further remarks about Peirce’s teaching as particularly worthy of note. Firstly, Jastrow writes: “The irrelevant was discarded, the significant composition revealed. The chips fell away and the statue in the block appeared” (Jastrow, 1916, p. 723). Here Jastrow seems to be suggesting that the knowledge that Peirce taught him had some kind of *overall shape* which Peirce as teacher was highly skilled in revealing. Secondly, Jastrow praises the way in which Peirce did not merely lecture to him but trusted him to perform research alongside him. He remarks that Peirce did this by assigning tasks which excelled at “adding a moderate insight to a growing capacity” (p. 724). I believe that this places Peirce in the camp of *active learning pedagogues* − more on this, and how it relates to iconic signs, below.

**Icon, Index, Symbol**

In this section I will isolate and define Peirce’s concept of an iconic sign, and explain in more depth how it functions (cf. Legg, 2008b). Peirce’s distinction between *icons*, *indices* and *symbols* is broadly influential. It defines three kinds of relationship between a sign and its *object* (e.g. Lizska, 1996; Short, 1997; Jappy 2013). *Symbols* signify their objects by some learned convention (or, in some cases drawn from biology, a natural habit) that is *arbitrary*. So for instance we must learn that in English the letters ‘t’, ‘r’, ‘e’ and ‘e’ combine to make a word which picks out a certain kind of plant. Leaving aside etymological derivations, there is no special reason why we should use those letters to pick out that thing. Most human words are symbols; we might say that this is the most modern sign-form.

On the other hand, *indices* signify objects by being in some way directly connected with them. If I point to a tree and say “Look at this!”, then with my word ‘this’ I am ‘indicating’ that particular plant, and my interlocutor must perceive my pointing action in order to make the connection with the object meant. In this example the connection which creates the indexical sign is a kind of *co-presence* between my pointing and the tree (although this determination of co-presence may need to factor in the direction of my pointing if I am standing some distance from it). Another form of direct connection which may be harnessed to create indexical signs is *causal relations*. So for instance, as fire reliably causes smoke we take smoke to be a sign of fire, even if the smoke has drifted away from (and is no longer co-present with) the fire which caused it. What distinguishes both these kinds of signs from symbolic signification is that the direct connections on which they depend are not mediated by convention or habit. It is not possible to redefine relations of co-presence or causation arbitrarily – or if it is, any signs resting on those relations are no longer purely indexical.

Finally, *icons* signify objects by resembling them. We have noted that a simple example is a map. If we look at a map of New Zealand, we can learn that it consists of two main islands not by being told this in propositional form but by directly inspecting the shape and size of the representations of the land-masses concerned. In fact, if we carefully inspect a map of New Zealand, we may discern more features and spatial relationships between its different parts than could have ever been consciously thought of by the map-makers, or captured by any set of propositions, however large. (So it is said that a picture is worth a thousand words.) I will call this feature of iconic signs *relational excess*, and it will be important later.

It is sometimes protested against the whole idea of iconic signification that ‘what resembles what’ is a wholly subjective affair, since everything resembles everything else in *some* respect to someone with sufficient imagination, and therefore resemblance is too shaky a basis on which to define a rigorous semiotic concept. Whilst Peirce would most likely not deny that everything resembles everything else *in some respect*, he is not vulnerable to this criticism. First of all, he scrupulously avoids defining the fundamental concepts of his semiotics in terms of what sign-users *do* think, in favor of what they *should* or *will* think. This is his anti-psychologism, which he shared with the most progressive logicians and philosophers in the 19th century such as Frege; see, e.g., Stjernfelt (2007, p. 50) for a very helpful discussion with respect to the role of the imagination in iconic signification.

Secondly, Peirce gives his concept of an iconic sign a specific and objective basis by noting that what is most characteristic of it is that its *parts are related in the same way that the objects represented by those parts are themselves related* (CP 3.363). So, returning to our map of NZ, if Huntly lies between Auckland and Hamilton in the North Island, then on a normal map of NZ, the representation of Huntly will lie between the representations of Auckland and Hamilton. The form of resemblance Peirce is interested in capturing with his notion of the iconic sign might be called *structural resemblance*. So although our popular idea of an ‘icon’ is of some kind of *picture*, Peirce’s icon is defined more broadly. Although every picture is a structural mapping, not every structural mapping is a good picture. (Think of the famously ‘iconic’ London Tube Map for instance.) Peirce expresses the point well: “Many diagrams resemble their objects not at all in looks; it is only in respect to the relations of their parts that their likeness consists” (CP 2.281).

Peirce is famous for delighting in the number three as the basis for triadic analyses of a wide range of phenomena. Our three sign-types may be analysed under this rubric:

* Symbolic signification is essentially *triadic*, as it involves the sign, the sign’s object and the arbitrary convention or habit that brings the two together.
* Indexical signification is essentially *dyadic*, as it involves a direct connection between an indicator and what it indicates.
* Iconic signification is essentially *monadic*, as the quality by means of which an icon resembles its object is *something the icon would possess whether or not the object existed.* (A cloud which is shaped like the Eiffel Tower − and thereby iconically signifies the Eiffel Tower to certain people − would have the same shape if the Eiffel Tower had never existed.)

It is important to note that these three categories are not mutually exclusive. So for example the small aeroplane-shaped road-sign that appears in many cities is symbolic insofar as we must learn the convention that it signifies an airport rather than, say an aeroplane factory; it is indexical insofar as it points the way towards an actual airport; it is iconic insofar as it looks enough like an aeroplane for an aeroplane-mad child to get excited. At the same time, the three sign-types have very different functional roles to play in communication and thought, and part of the power of Peirce’s semiotics is the way in which he clarifies these roles, and delineates them from one another. A very rough outline of these differing roles would be that symbols, due to the repeatability of their defining conventions, give us general concepts. Indices, due to the brute actuality (directness) of their pointing function, connect us with particular objects in the world which we wish to talk *about*. If symbols give us the general and indices give us the particular, what is left for icons to signify? Icons, precisely due to the fact that their objects may or may not exist, enable us to exercise our *imagination*, and think about *what is possible*:

The value of an icon consists in its exhibiting the features of a state of things regarded as if it were purely imaginary. The value of an index is that it assures us of positive fact. The value of a symbol is that it serves to make thought and conduct rational and enables us to predict the future. (Peirce, CP 4.448).

**Why Use Iconic Signs in the Classroom?**

We have just seen that Peirce claims that the value of an icon consists in its exhibiting the features of a state of things regarded as if it were purely imaginary. One might wonder what such a kind of sign is useful for − fantasizing and enveloping oneself in a dream-world? By contrast I will now argue that the wise deployment of icons is absolutely crucial for effective teaching about reality, for a number of reasons.

*The Road-Map*

First of all (perhaps ironically, given that this is the sign form that represents pure possibility) icons, and only icons, can provide the framework, the structure, which we earlier noted differentiates knowledge from mere information. Recall our two key observations of Peirce’s pedagogy by Jastrow. He spoke of the knowledge that Peirce revealed to him as resembling a statue with a clear overall shape. What makes a statue recognizable as, for instance, a man is that the statue has clearly recognizable parts which have the same relationship to one another as do the parts of an actual man (arm-parts, leg-parts, and so on). But although icons cannot demonstrate (as indices do) that their object *exists*, by the integrity of their structure they can demonstrate that their object is (at least insofar as it is represented by the icon) *consistent*, and thus *possible*:

The Icon does not stand unequivocally for this or that existing thing, as the Index does. Its Object may be a pure fiction, as to its existence. Much less is its Object necessarily a thing of a sort habitually met with. But there is one assurance that the Icon does afford in the highest degree. Namely, that which is displayed before the mind's gaze -- the Form of the Icon, which is also its object -- must be *logically possible* (Peirce, CP 4.531)

In fact, Peirce notes astutely that strictly speaking icons are the only sign of the type that can *‘show’* anything, since showing someone something must involve presenting some kind of intelligible structure (not as in the case of the index, a mere pointing at something, or in the case of the symbol, a continuation of an already established and defined habit). He points out that within every proposition this kind of showing is the function of the *predicate*:

The only way of directly communicating an idea is by means of an icon; and every indirect method of communicating an idea must depend for its establishment upon the use of an icon...The idea which the set of icons…contained in an assertion signifies may be termed the ***predicate*** of the assertion. (Peirce, CP 2.278)

*Relational Excess*

Earlier I pointed out that one major criterion of meaningful education is that it leads students to keep seeing *more* in the knowledge imparted to them. The concept of the iconic sign provides the semiotic undergirding for this insight. This is because, as noted in the last section, only icons possess intelligible structure *in the sign itself*. Therefore only they can provide the opportunity to inspect that structure and discover new relations between its parts. Peirce explains why the other two sign-types cannot perform this function − symbols (qua sign) are already fully defined, and indices as pure pointers are ‘blind’ to the qualities of what they are pointing at:

since symbols rest exclusively on habits already definitely formed but not furnishing any observation even of themselves...Indices, on the other hand, furnish positive assurance of the reality and the nearness of their Objects. But with the assurance there goes no insight into the nature of those Objects. (CP 4.531)

Peirce notes that the relational excess which characterises iconic signification is perhaps most evident in mathematics, which he argues has been gravely misunderstood as an activity governed by mechanical rules, when in fact it is in essence a process of *creatively* viewing diagrams (where this term is understood very broadly to include for instance algebraic equations) and *creatively* observing new and hidden connections between their parts (CP 3.641).

*Active learning*

The third reason why iconic signs are useful in the classroom is their role in active learning. Let us turn again to Jastrow’s second observation about what he valued in Peirce’s teaching: the tasks which Peirce set continually added ‘a moderate insight to a growing capacity’. In terms now outlined we may see that active learning has an indexical character insofar as it connects learners directly with real-world situations with which they interact in unmediated ways. This indexical or ‘realistic’ dimension is what has been most celebrated about active learning. For instance Liszka (2013) explains in depth how active learning indexically connects students not only to the subject matter of a discipline, but also its tradition and history, and the living practices of its current communities of inquiry. A recognition of this is present in the broader context around Jastrow’s quote, where he says that Peirce’s pedagogy “*made the student feel the reality of the discussions by* adding a moderate insight to a growing capacity” (1916, p. 725).

However successful active learning also has an iconic dimension insofar as the learner’s series of tasks are chosen to relate both to each other and to the learner’s current state of knowledge, to create an ever-building intelligible structure. It was noted earlier that such a structure provides a useful road-map of a subject area. But it is even more than that, as *the learner herself* has a place in the map, through her own *agency*. Importantly, by contrast to symbolic signification, this map’s structure is *not* arbitrary, but is dictated by the subject matter itself. Here we return to our initial insight that knowledge must not just be intelligible but also true; a Peircean pragmatist operationalizes the concept of truth by finding ways to relate to it and use it to fix belief (as opposed to merely postulating its existence, as do so many ‘metaphysical realists’).

The assumption that all signification is symbolic ran deep in 20th century philosophy. It was present in the analytic tradition where the logical positivists and Quine in their rush to eliminate metaphysics argued that all *a priori* knowledge was analytic (seeking to sweep away with a few strokes of the pen the synthetic *a priori* knowledge on which Kant labored) and that all analytic knowledge was a matter of the definitions of words, which derived from linguistic convention. Large and ambitious projects in philosophy of language and associated epistemology ensued (e.g. Carnap, 1937; Quine, 1936; culminating in Lewis, 1969). But the assumption that all signification is symbolic was equally present in the Continental school of semiology where Saussure (1916) took ‘the arbitrariness of the sign’ as axiomatic, and a large number of theorists followed him in this without question (Stjernfelt, 2007, p. 51). From the perspective of Peirce’s semiotics this valorization of symbols at the expense of indices and icons seems absurdly unhelpful.

This lop-sided philosophy of signification has inevitably seeped into philosophy of education, where it has arguably done harm. We have seen that the purpose and functioning of the symbol is to provide access to general concepts. Correspondingly, we should expect that an overemphasis on this form of signification will generate a pedagogy that purveys excessive abstractions. Such educative practices will present ideas that are easily generalizable, but the neglect of the *index* will mean that these ideas frequently lack application to concrete, real-worldcontexts. The neglect of the *icon* (our concern here) will mean that in the spreading, ‘habit-forming’, matrix of symbolic meaning presented to learners it will be difficult to discern an overall shape.

To some degree the message of this chapter that iconic signs are of signal importance in teaching might seem to be nothing new – an education-philosophical cliché, since of late much educational theory has embraced the use of diagrams and ‘multimedia’ with a vengeance (e.g., Mayer, 2014). But due to the late recognition of the value of Peirce’s thought as an integrated system, that was systematically addressed in the field of educational theory only in 2005 ([Semetsky, 2005](#_ENREF_1)), this has happened in a manner relatively untheorized by the rich conceptual resources in his semiotics, apart from some very recent research in Peirce- and Dewey-based edusemiotics (e.g., Semetsky & Stables, 2014; Stables & Semetsky, 2015).

A much deeper understanding of the functioning of iconic signs can be provided by looking first to the way Peirce developed his semiotics to undergird the theorising of language, thought, perception, logic and a host of other areas in his elegantly inter-related philosophical ‘architectonic’. Secondly one can look to the relationship of his icon-index-symbol distinction to further framing concepts of his semiotics, such as his distinctions between two kinds of sign-object (immediate and dynamic) and three kinds of sign-interpretation (emotional, energetic and logical). Here we might say that Western philosophy ‘dropped the ball’ in largely failing to realise the *philosophical* significance of Peirce’s semiotics over the past 100 years. This arguably constitutes a profound missed opportunity when so much important educational innovation took place during that time. This is particularly poignant considering that a great deal of this educational innovation was prompted by classical pragmatists – most notably John Dewey. Sadly, Dewey himself never engaged seriously with Peirce’s semiotics (Hoopes, 1998).

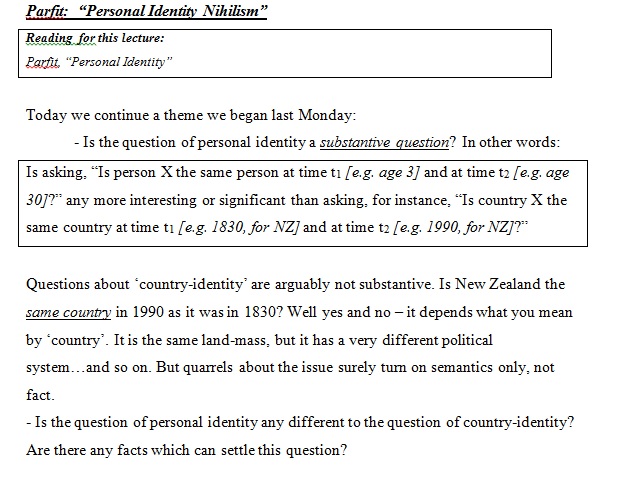
**Varieties of Educational Structure**

Once more, pragmatism suggests that one may think one understands a concept expressed in general terms, but it is in concrete examples that much of the learning lies. So I will now outline some examples taken from my teaching of a second-year metaphysics course at University of Waikato (NZ). Appropriately for our current topic, the course is entitled *Possible Worlds*. I will discuss four different ways in which I attempt to iconically represent philosophical content in this course (the first three will be followed by a specific example and accompanying notes).

*Lecture material: Documents vs Slides*

First and most obviously, I have gradually replaced the largely discursive (albeit in ‘proto-iconic’ point form) lecture notes which I used to hand out in class with power-point slides. These slides I enrich more and more each year with images, and sometimes Youtube videos. I have heard some academics deplore such developments as rendering the classroom experience ‘just like Facebook’, where this is taken to be a bad thing. We might ‘turn around’ this mismatch in expectations with respect to the presentation of course content between ourselves and our students, however, in order to inquire: do students and their enthusiasms have something to teach us about how to present material so that it best catches human attention? (But this criticism will be discussed further below.)

My first example (Fig. 1 and 2) comes from a lecture introducing Derek Parfit’s views on personal identity – specifically, his claim that whether someone is the same person across time is actually not a ‘substantive question’ (i.e. answerable by discovering facts):



*Fig. 1. Lecture handout, 2006*



*Fig. 2. The same lecture, 2015*

NOTES:

i) In the 2015 material the representations of paintings from 1830s NZ are designed to stir students’ imaginations and intuitions regarding their homeland, while some background information about that time is provided in order to fill out the ‘picture’.

ii) The 2015 exercise more clearly separates for students the task of discerning their own intuitions on ‘whether NZ is the same country now as it was in 1830’ from the task of learning what Parfit claims about this. In mixing these, the 2006 lecture is arguably less perspicuous.

iii) The 2015 lecture invites students to not only answer the question about ‘country-identity’ but also identify *why* it is being asked. This is designed to give them a more active role in determining the argumentative structure of the lecture. (The students of 2015 proved quite capable of answering this question.)

*Tutorial questions*

As well as attempting to present lecture material as perspicuously and diagrammatically as possible, I use tutorial time to ask students specific questions − often concerning imagined scenarios − designed to require *them* to take a position on specific philosophical issues.I have found that choosing the right examples and questions here is something of an art form. Ideally I need to discern what students currently understand, and on that basis what questions if sincerely pursued could bring them to new levels of understanding or insight − although of course, this being philosophy, the greatest ‘progress’ might consist in further difficult questions. Once again we may reference Jastrow’s key phrase: adding a *moderate* insight to a *growing* capacity.

The next example presents three questions from a tutorial which also concerns Parfit’s theory of personal identity:

**i) Does Parfit’s concept of q-memory make sense? Are memories copyable? Are memories “just information”?...In thinking about this issue, it might be helpful to read William Gibson’s story, “The Winter Market” and consider the question – when Lise calls in the morning, will the voice on the other end of the phone be *her*?**

**ii) What exactly are the implications of split-brain experiments for personal identity? Are our minds more like a coral reef than a single ‘thinking thing’? What does Parfit say? What do you think?**

**iii) Parfit says that the question of personal identity is not *a substantive question*. What does he mean by that? If we did give up the idea that the question is substantive, what would follow from that?**

*Fig.3. Tutorial questions.*

NOTES:

i) I find Gibson’s short story “The Winter Market” quite bleak and moving. Its strong narrative structure is designed to elicit a noticeable emotional reaction in the students who read it. But it is important to also encourage students to integrate this emotional reaction philosophically (more on this issue below).

ii) The lovely metaphor of human mind as coral reef was suggested by a student in the previous lecture. I picked it up and used it as a powerful enabling image for thinking about a particular philosophy of mind. (In the tutorial in which we considered these questions the student remarked that the fact that I had noted and used her causal remark in class was meaningful to her.)

iii) Once again I invite the students to explicitly distinguish between what Parfit thinks and what they think − thereby seeking to establish some structure of conversational interlocutors.

iii) In the third question I invite the students to try to build out further logical structure from Parfit’s claims (in asking, ‘what would follow from that?’).

*Narratives*

We have noted that the structure that constitutes an iconic sign may be narrative in character. So for instance, ‘Frodo’s journey to cast the Ring into Mt Doom’ functions as one large overarching sign within the rich semiotic structure of *The Lord of the Rings* − a sign which holds profound meaning for many people. For undergraduate students, narrative can be a particularly vivid and engaging form of structure, while also being used to generate and motivate philosophical questions. For this reason I show a series of films in class through the semester (Table 1), also using science fiction stories as further readings for a number of topics:

|  |  |
| --- | --- |
| **FILM** | **PHILOSOPHICAL QUESTIONS** |
| Terminator I | Is time-travel possible? (And what do we mean by possible?) |
| Sliding Doors | What role do ‘counterfactuals’ (what might have happened, but didn’t) play in human life? What does fatalism mean, and is there any truth in it? |
| The Prestige | If I copy my body atom for atom, is the end-result ‘me’? |
| Memento | What role (if any) does continuity of memory play in creating personal identity? |

*Table 1: Films and associated philosophical questions in the Possible Worlds course*

Sure, this classroom use of alternate media could be viewed as a pedagogical evasion. But once again we should also ask if traditional text-based (and thus, inevitably, strongly symbol-based) philosophy instruction could benefit by drawing more of the human being into discussion, thereby obtaining a more ‘complete picture’. Let us consider the issue in Peircean terms. It was noted earlier that Peirce distinguished *emotional*, *energetic* and *logical* interpretation of signs (e.g. CP 5.475). In fact he considered these an ordered set of stages in any interpretation. As an example, imagine that I view an adulterous text (an intelligible sign, like any other, alas) on my partner’s phone. Interpretation might then proceed as follows − emotional: feelings of shock and grief; energetic: throwing their belongings out the window; logical: a reasoned decision to end the relationship.[[2]](#footnote-2) Now narratives often trigger emotional interpretation. This in itself is neither a good or bad thing – it will be discussed further below.

*Class conversations*

Yet another kind of meaningful structure which may be harnessed pedagogically is the differing viewpoints of students on topics discussed in the course. Both the similarities and contrasts between students’ views on course content provides it with an articulation which may be highly meaningful in context. This articulation is not the same as *logical* structure insofar as the different views frequently arise from personal preferences and are not always supported with reasons. It is not the same as *narrative* structure either, though, insofar as students occupy a range of different positions at any given time, and there is not necessarily any notable diachronic unfolding in their views. Of course there might be, however, and this raises the very interesting question: to what degree can one kind of iconic structure *scaffold* or *bring into being* another in education? So for instance, transfiguring a structure of conversational interlocutors into compelling narrative structures is arguably one of the most notable achievements of Plato’s dialogues (think of the *Gorgias*, and the *Apology*). That Plato is ultimately engaged in transfiguring both of these into logical structure *as he understands it* should not be ruled out either.

Conversational structure is arguably the most difficult of the three for a teacher to work with pedagogically as there is so much going on at any one time, if one’s class time is reasonably interactive, and it is fleeting and easily forgotten. Mapping class discussions on the board as they unfold can really help (and of course this can transform some conversational structure into logical structure). It is important to slow down the process as much as possible. Something I have noticed is that when discussion is flowing, students sometimes amplify or defend points made in comments by other students that I have not noticed, or dismissed. This is humbling for me as a teacher as it reminds me that there is always much more going on in my classrooms than I am consciously aware of.

In the final section of this paper I will consider and respond to some likely objections.

**Objections and Replies**

*Teaching as Entertainment*

It might be argued that in seeking to render one’s pedagogy ‘more iconic’ one risks transforming it into something of a ‘passing show’. It is not uncommon lately to hear complaints about a certain kind of student who spends class time passively gazing at the lecturer like a TV set, promptly forgetting everything they have heard. (In other words, the educator becomes the “poor fool…who struts and frets his hour upon the [lecture theatre] and then is gone….”) In seeking to give our teaching a more vivid and compelling structure, won’t we be merely strengthening this tendency? Will we not be giving students less work to do in their studies, and thereby making our teaching *less*, not more meaningful? As we have seen, in Peircean terms – this would be allowing emotional interpretation to crowd out the other two.

Firstly I believe that it is important to acknowledge that these *are* risks. All of the three sign-types have their strengths and weaknesses, and Peirce’s pragmatism teaches that there is no infallible path to gaining or imparting knowledge. But Peirce’s semiotics itself also suggests some potential mitigating techniques.

One important technique is just: *more and better icons.* To the degree that ‘iconic teaching’ does give rise to problems of epistemic passivity, due to too much entertainment, I would urge that this is caused by icons that are too discrete from one another and not themselves iconised within larger intelligible structures. One might say that it is important to put ‘legs’ from the icons of today’s class into classes in the past and future, and also into students’ lived experience and problems with which they genuinely grapple.

*‘Lying Icons’*

Recall once again the distinction between mere *information*, which consists of data points which are frequently decontextualized and when suitably interpreted may even be false, and *knowledge*, which consists of statements in context which will turn out to be true. (This phrasing may sound odd, but is just meant to capture that statements which turn out not to be true will turn out not to have been knowledge, according to Peirce’s understanding of truth: cf. Legg, 2014). A further objection to the educational use of iconic signs is that they are such a powerful tool for transforming information into knowledge that they can easily be used to trick or mislead. As every tabloid magazine knows, a *picture* of a pair of celebrities apparently on a clandestine date is more liable to deceive the public and ‘go viral’ than a discursive description of the same thing, precisely because of the perspicuousness which was earlier argued to be the icon’s great strength. This kind of ‘deception by vividness’ is of course what Plato was worried about when he took “the poets” to task in his great work *The Republic* (in contrast with frequent misunderstandings of late such as that Plato thought that the fabric of society might be undermined by people writing rhyming verse – and aren’t we lucky that liberalism now allows every citizen to pursue special interests without intolerable state interference?).

Peirce acknowledges this downside of icons: “Each Icon partakes of some more or less overt character of its Object. They, one and all, partake of the most overt character of all lies and deceptions – their Overtness” (CP 4.531). But he immediately goes on to say, “Yet they [icons] have more to do with the living character of truth than have either Symbols or Indices.” Why does he say this? Recall the statement cited earlier, *which in fact continues this quote*: “there is one assurance that the Icon does afford in the highest degree. Namely, that which is displayed before the mind’s gaze – the Form of the Icon, which is also its object – must be ***logically possible****”* (CP 4.531).

We have learned that the role of the icon is that by demonstrating consistency within an overall structure it shows us what is possible. Once one is possessed of a suitably rich iconic understanding of a given topic, any false statements made about it will sooner or later fall foul in respect of consistency with that understanding. This is particularly so given that, as noted, iconic signs always contain more potential relations than previously apprehended or imagined. The relational excess of iconic signs is famously the bane of liars for the way in which it can retrospectively expose their mendacity, however much they try to ‘manage’ the consequences of what they have previously said. For this reason individuals who are inclined to be deceptive often demonstrate a general drive away from perspicuousness (strong overarching icons) in all their communications. In this way, then, iconic signs are revealed as functioning to guard truth rather than betray it.[[3]](#footnote-3)

To put the same point another way: icons have to do with the living character of truth because tightly interlaced around all of our knowledge lies *logical form*, which is only properly represented by them (for further technical elaboration, see Legg, 2008b). We began this paper by noting that in educational contexts, as in others, knowledge may be differentiated from mere information firstly by its surrounding conceptual structure and secondly by its truthfulness. The iconic sign, wisely used, delivers both of these desiderata in spades.

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1. In the same volume Peirce’s former student Christine Ladd-Franklin also wrote a testimonial which was more critical, noting an “apparent aloofness and air of irresponsibility”, but adding that *in the classroom*, “[h]e got his effect…by creating the impression that we had before us a profound, original, dispassionate and impassioned seeker of truth” (Ladd-Franklin, 1916, pp. 716-7). [↑](#footnote-ref-1)
2. Of course this is an emotionally charged example and one might wonder what are the limits of this model of interpretation? Could it be applied for instance to mathematics? Yes, even here Peirce claims that all three stages of interpretation are operative and vital. Hence the widely-acknowledged role of aesthetic appreciation (emotional interpretation) at the highest levels of mathematics, driven by an eros (energetic interpretation) not toward deductively valid arguments, which are a dime a dozen in the field, but so-called ‘elegant solutions’. [↑](#footnote-ref-2)
3. Yet again a reference to Plato’s philosophy is irresistible at this point – namely the claim towards the end of the *Meno* that what differentiates knowledge from mere belief is that it is ‘tethered’ so that it cannot ‘run off’. Indeed, perhaps Plato’s eidos or Form, with its strong (yet today strangely unremarked) visual connotations might have been precisely a *semiotic* concept reaching towards Peirce’s icon − rather than a useless entity sitting ‘in Heaven’ inviting Ockhamist elimination. [↑](#footnote-ref-3)