Indexicality

1. Introduction

The phenomenon of indexicality has justly attracted many philosophers. It is both very concrete – as we shall see below, indexicality is first and foremost a property of linguistic expressions – and relevant to extremely difficult issues, including the Cogito, consciousness, materialism, self-knowledge, perspectival thought, and the nature of belief. An adequate treatment of indexicality, then, promises to shed light on perennial questions in the philosophy of language, mind, and nature. Along with David Kaplan, John Perry is a pioneer in the field of contemporary studies on indexicality, although of course there are important precursors (Perry himself mentions Charles Sanders Peirce, Arthur Burks and Hector-Neri Castañeda, and we can add a few others, such as Karl Bühler). Kaplan’s work is more formal, though, and Perry went much farther in the exploration of the foundations of our cognitive architecture. This is why his work is highly relevant not only to present-day philosophy but to cognitive science as a whole.¹

2. What is indexicality?

The definition of the notion of indexicality is controversial. There is no consensus on its exact boundaries. However, everybody agrees that indexicality is at least the property of a specific class of linguistic expressions. The following (non-exhaustive) list is typical of what is considered by linguists and philosophers of language to be indexical expressions, or indexicals for short:

_Personal pronouns:_ “I”, “you”, “he”, “she”, etc.

¹ Space prevents me from discussing Perry’s application of his theory of indexicality to issues such as the nature of phenomenal consciousness; see Perry (2001a).
**Demonstratives, simple and complex:** “this”, “that”, “this man”, “that woman”, etc.

**Adverbs:** “here”, “now”, “presently”, “today”, “yesterday”, “actually”.

**Adjectives:** “my”, “your”, “present”, “actual”.

**Verb tenses:** present tense, past tense, etc.

These expressions are called “indexical” insofar as their significance (to use a neutral phrase at this stage) can vary in systematic ways according to the context of their utterance. In short, indexicality has to do with a form of context-sensitivity that some linguistic expressions exhibit in contrast to others.

In 1914, the logician and philosopher Gottlob Frege described the phenomenon of indexicality in the following way, by reference to the complex indexical “this man”:

> Of course I can use the words “this man” to designate now this man, now that man. But still on each occasion I mean them to designate just one man. The sentences of our everyday language leave a good deal to guesswork. It is the surrounding circumstances that enable us to make the right guess. The sentence I utter does not always contain everything that is necessary; a great deal has to be supplied by the context, by the gestures I make and the direction of my eyes. But a language that is intended for scientific employment must not leave anything to guesswork. (Frege 1979, p. 213)

In this passage, Frege makes clear that he views indexicality as a property of ordinary language. From a logical point of view, indexicality is a defect, and should be banned from artificial languages more suited to scientific use.

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2 The noun “demonstrative” is sometimes used as a synonym of “indexical”, but more often demonstratives are taken to be a sub-class of indexicals, namely those that are accompanied by a demonstration; see Kaplan (1989a and b).

3 Beyond the standard list of indexical expressions, some philosophers claim that indexicality is also hidden in other expressions, including names, natural kind terms, propositional attitudes verbs, and vague predicates. An extreme view, which we may call “panindexicalism”, is that the very notion of a non-indexical sentence is empty. However, panindexicalism is likely to rest on the false presupposition that indexicality is the only form of context-sensitivity that language exhibits. See Perry’s “Thought Without Representation” for discussion of an important non-indexical form of context-sensitivity.

4 This is not to say that Frege had nothing interesting to say about indexicality in ordinary language. In fact, he suggested at several places that context can play a symbolic role, in the sense that it can contribute to the expression of a determinate thought. For instance, an utterance of the sentence “It’s over now” expresses a complete thought only along with the time of the utterance itself. This suggestion has been overlooked by both Kaplan’s and Perry’s discussions of Frege. See Künne (1992) and Mulligan and Smith (1986).
Frege uses the notion of designation or reference (Bedeutung, in German) to capture that which can vary across contexts of utterance. In the context of a particular utterance, the complex demonstrative “this man” can refer to a particular man, but the very same expression can be used to refer to any other man. Intuitively at least, this demonstrative behaves in a quite different way from proper names, like “Peter” or “Mary”, whose reference is much more stable across contexts of utterances, even if we take homonyms into account.

As a further illustration of the phenomenon of indexicality, consider the following dialogue:

(1) Mary: “I’m right, you’re wrong.”
   Peter: “No, I’m right, you’re wrong.”

Mary and Peter use the very same type of sentence, individuated by syntax and vocabulary, but what they say in uttering this sentence is quite different. Mary says that she herself is right and Peter is wrong, while Peter says that he himself is right and Mary is wrong. This is why they have a genuine disagreement. So the indexicals “I” and “you” can hardly be assimilated to proper names, as they refer to different persons in different contexts of utterance.

Perry (2001b, §3.4) says that in the case of indexicals, context is used semantically. Roughly, context is used semantically only if it needs to be consulted even after the language, words and linguistic meanings relevant to the interpretation of the utterance have already been determined. Consider the following exchange:

(2) Mary: “The bank is finally open.”
   Peter: “You are wrong: the bank is not open.”

Suppose that Mary intends to refer to her financial institution, where she wants to make a withdrawal, whereas Peter has in mind the border of the river, which has been closed to pedestrians as the result of a recent flooding. Clearly, Mary and Peter talk at cross-purposes. They do not even disagree. They are simply misunderstanding each other. In such a case, Perry says that context must be used pre-semantically in order to disambiguate the vocable “bank”, which in fact corresponds to two different English words.
Indexicals do not work like that. In English at least, the vocable “I” corresponds to the same word, as it figures in any standard dictionary. Context is needed to determine what is said by an utterance involving “I” (which person is referred to), but only after the word itself has been properly identified as the first-person pronoun.

Perry also contrasts the case of indexicals with what he calls “post-semantic” or “content-supplemental” ways of using context. Consider this dialogue:

(3) Mary: It’s raining.
    Peter: No, it’s not raining.

Do Mary and Peter have a genuine disagreement? Well, it depends on the situation. If their utterances both concern the same place, they disagree. On the other hand, if they talk over the phone from different cities so that Mary’s utterance concerns London, while Peter’s utterance concerns Paris, they do not really disagree; perhaps they are both right. In order to know what Mary and Peter say, we have to look at the broader context of their utterances and determine a relevant place. As Perry puts it, we have to make a content-supplemental use of context.

Why is the latter example a case of post-semantic use of context? Well, the sentence “It’s raining” does not involve any indication as to the relevant place where it is supposed to rain. As interpreters, we have to exploit other aspects of the context of utterance. In contrast, the indexical sentence “It’s raining here” does involve an indication as to a relevant place. As Perry puts it, indexicals have linguistic meanings that “direct” us to certain aspects of the context; in the case in point, where the speaker is located. However, the sort of meaning indexicals have is a difficult issue, to which we now turn.

3. Divide and conquer

Perry does not share Frege’s view that indexicality is a mere inconvenience of ordinary language. On the contrary, he has shown it to constitute a serious challenge to Frege’s conception of language and its significance. More specifically, Perry argues in “Frege on Demonstratives” that Frege’s notion of sense is either inconsistent or leads to insuperable problems.
In Frege’s system, any (simple or complex) significant part of language has a reference. For the sake of simplicity, we can draw a distinction between singular terms, which refer to objects (individuals), and general terms, which refer to properties. Now Frege insisted that any referring expression is related to the world by way of its sense (Sinn in German). The sense of an expression involves a specific way in which the reference is given, what we now call a “mode of presentation” of the reference.\(^5\) On the one hand, the sense of an expression determines the expression’s reference, so that a given sense cannot determine more than one reference. On the other hand, two expressions can have the same reference but different senses. A sense leads us to unique reference but, as Russell once put it, there is no road back from reference to sense. Frege’s most famous example involves the expressions “The Morning Star” and “the Evening Star”, which both refer to the planet Venus by way of different senses or modes of presentation.

Frege applied the tripartite distinction word/sense/reference to both singular and general terms. In a famous letter to Husserl dated 24\(^{th}\) May 1891, he offers the following summary of his view of language:\(^6\)

<table>
<thead>
<tr>
<th>sentence</th>
<th>singular term</th>
<th>general term (= concept-word)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sense (Sinn)</td>
<td>thought (Gedanke)</td>
<td>sense of the singular term</td>
</tr>
<tr>
<td>reference (Bedeutung)</td>
<td>truth-value</td>
<td>object</td>
</tr>
</tbody>
</table>

Table 1

\(^5\) The German phrase used by Frege is “Art des Gegebenseins”, which literally means “way of being given”. In the context of contemporary discussions of Frege, senses and modes of presentation are often considered as the same. However, Frege made clear (at the beginning of “On Sense and Reference”) that senses involve or contain modes of presentation of the references. It is not clear that this distinction is of any relevance to Perry’s criticism of Frege.

\(^6\) Table 1 is a variation on Frege’s own diagram, which is reproduced in Frege (1976).

\(^7\) Frege’s use of the term “concept” (Begriff) is notoriously non-standard. What most contemporary philosophers call “concepts” correspond to the senses of general terms or predicates, rather than their references. Fregean concepts are extensional entities, namely functions from objects to truth-values.
In “On Sense and Reference”, Frege introduced the notion of sense to deal with epistemological problems involving identity sentences. Frege observed that a true identity statement can be *a posteriori*, in the sense that it can convey a substantial piece of information to the rational man. This is puzzling, for after all, what is said by a true identity statement is just that an object is identical with itself, which is hardly informative. For instance, the French writer Romain Gary wrote novels under the pseudonym “Émile Ajar”, so that it is true that Romain Gary is Émile Ajar. We now know that this is true, but the committee of the Prix Goncourt in France did not possess the relevant information when they unknowingly gave the prize twice to the same writer.

It is not entirely clear how Frege actually solved the problem of informative true identity statements, but he certainly thought that his notion of sense could do the trick. The names “Romain Gary” and “Émile Ajar” are co-referential (in the relevant context of use), but they express different senses, and the fact that those senses determine the same reference is not something that can be known *a priori*, i.e. by merely understanding the names or, as Frege put it, by grasping their respective senses.

Perry realized that Frege was trying to put his notion of sense to two theoretical roles that are at least *prima facie* quite different. On the one hand, the sense of an expression plays a *semantic* role; it determines the reference. As Perry observes (1993, p. 5), this generates a criterion of difference for thoughts, conceived as the senses of complete (true or false) sentences:

*Frege’s Semantic Criterion*: If sentence S is true and sentence S’ is not, S and S’ must express different thoughts.

Two sentences can have the same truth-value while expressing different thoughts (i.e. having different senses), like “Socrates is a philosopher” and “Grass is green”, which are both true. However, two sentences that have different truth-values must express different thoughts. For instance, “Grass is green” and “Grass is blue” cannot have the same sense, since one is true but the other is false.
On the other hand, the sense of an expression plays an *epistemic* role; it is supposed to capture what the subject knows when she understands the expression. This yields another criterion of difference for thoughts:\(^8\)

*Frege’s Epistemic Criterion:* If subject A is rational, understands both S and S’, and accepts S as true without accepting S’ as true (at the same time), S and S’ must express different thoughts.\(^9\)

The gist of Perry’s criticism of Frege is that nothing can play both a semantic and an epistemic role. Perry’s positive contribution is to split Fregean senses into two distinct theoretical entities.

In colloquial English, we may say that a descriptive thought can be “about” an object in the world. For instance, the thought expressed by the sentence “The shortest man on earth is bald” is about a particular person, namely the shortest man on earth (assuming that there is one; see below). The object of the descriptive thought is the entity, whatever it is, that satisfies the definite description “the shortest man on earth”. The thought is true if that man is bald; it is false otherwise. So we have a general model of how a thought can be about an object. The thought is associated with a condition (e.g. being the shortest man on earth) and the thought’s object is whatever meets the condition.

Notably, Frege himself balked at such a model. To begin with, when we entertain a thought about some object, there is a sense in which we have that object “in mind”, as we say. However, it is not clear that we have in mind a particular person, say an inhabitant of an inaccessible valley in Sumatra, when we entertain the thought that the shortest man on earth is bald. The problem here is that our thought does not seem to be intrinsically, indeed magically related to any particular person. The epistemic relation between a descriptive thought and its “object” is at best indirect, in the sense that the thought’s content is not affected by whether there is anything meeting the relevant condition. Perhaps there is no shortest man on earth, because at least two men happen to have exactly the same size. This would not deprive us from the possibility of entertaining the thought that the shortest man on earth is bald, although it is not clear whether our thought is false or rather neither true nor false. In Frege’s own

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\(^8\) In “Frege on Demonstratives”, Perry introduces a third criterion of difference, which is connected to Frege’s doctrine that the reference of expression in so-called “indirect contexts” is their ordinary sense, but for the sake of simplicity I shall leave this criterion aside here.

\(^9\) The qualification “at the same time” is needed to exclude cases in which the subject *changes her mind* between the time at which she accepts S as true and the time at which she accepts S’ as true. For if we do not exclude such cases, the criterion could posit differences in thought content where there are none.
terms, the sense of the definite description “the shortest man on earth” does not seem to determine a particular reference.

Still, the model of descriptive thought remains quite powerful when we think about how our thoughts are related to their objects. First, Frege himself did not really give any substantial alternative account of what sense is. The thesis that sense determines reference is really nothing but a formal constraint on such an account; it merely forbids the assignment of more than one reference to any given sense.

Second, one might raise the question of whether demonstrative thoughts belong to the class of descriptive thoughts. This is a question that Perry carefully examines in “Frege on Demonstratives”. Suppose that Leo utters the following sentence, involving the first-person indexical “I”:

(4) I am rich.

In uttering this sentence, Leo entertains the demonstrative thought that he himself is rich. Now the suggestion is that the thought grasped by Leo is identical with the thought expressed by a descriptive thought of the following form:

(5) The D is rich.

In (5), “the D” is a definite description. The suggestion is then that Leo thinks about a more or less specific condition D that he applies to himself when he uses the first-person pronoun “I”.

As Perry observes, this suggestion faces serious problems. First, a rational subject can use the indexical “I” to talk and think about himself without possessing any definite self-description. For instance, Leo might be an amnesic in a sensory deprivation tank, and literally not know anything about his biography or current environment. He might rationally accept (4) while remaining agnostic about (5). Thus, by Frege’s Epistemic Criterion, the thoughts expressed by (4) and (5) cannot be identical.

Second, even if Leo uses some self-description, there is no guarantee that he actually satisfies the description. For instance, poor Leo might think of himself as the tallest man on earth, while in fact wealthy Pierre is such a person. If “the D” in (5) is “the tallest man on

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At this point, Perry acknowledges his debt to Castañeda’s seminal work, which dates back to the 1960’s. Many of Castañeda’s insights can be found in his later (1989) book.
earth”, (5) is true while (4) is false. Thus, by Frege’s Semantic Criterion, the thoughts expressed by (4) and (5) cannot be identical.

Of course, these problems generalize. For any condition D, we can construe cases in which the subject accepts (4) but not (5), and/or cases in which (4) and (5) have different truth-values. By Frege’s own criteria, no sentence of the form “The D is rich” (at least when “the D” does not involve indexicals) can express the same thought as the thought expressed by Leo when he utters (4). It follows that we do not know what completes the predicative sense expressed by “__ is rich” in (4). In Perry’s terms, we do not know what the completing senses expressed by indexicals are. Nothing seems to fit Frege’s bill.

4. Linguistic meanings and psychological roles

Even though indexical expressions can refer to different things from one utterance to another, they seem to have a stable linguistic meaning. There are not several dictionary entries for a given indexical, corresponding to each possible reference that the indexical can have in some context of utterance. For instance, when someone we meet for the first time introduces herself with the words “I am Angelina”, we understand what she is saying, although the indexical “I” as uttered in this context has (for us) a new reference.

In fact, the linguistic meaning of indexicals can often be specified in the form of a unique rule of reference, which quantifies over contexts of utterance:

Any utterance of “I” refers to the speaker of the utterance.

Any utterance of “now” refers to the time of utterance.

Any utterance of “here” refers to the place of utterance.

Any utterance of “today” refers to the day of utterance.

Etc.

Linguistic meanings are very different from Fregean senses. The linguistic meaning of an indexical does not determine its reference absolutely, but only relative to a context of utterance. Slightly more formally, it can be modeled as a function from contexts of utterances
to references: persons, times, places, etc.\textsuperscript{11} Depending on the context of utterance, the very same function can yield different values. For instance, when Hume and Heimson (who holds the delusive belief that he is David Hume; see Perry’s “Frege on Demonstrative”) both utter the sentence “I wrote the Treatise”, they follow the same rule of reference, but refer to two distinct persons, and of course only one is right.

A philosopher sympathetic to the Fregean framework can welcome linguistic meanings along with senses and references. However, Perry makes the following suggestion, which constitutes a fairly important departure from Frege. According to Perry, the linguistic meaning of an indexical is the key to the individuation or classification of our psychological states. More precisely, it helps us to determine whether two token thoughts belong to the same psychological type. On this view, two English speakers uttering the same indexical sentence “I am rich” thereby express the same psychological state, although of course they say different things (one utterance might be true and the other false). If the speakers believe what they say, their utterances result from the same belief state.\textsuperscript{12}

What is Perry’s argument for the claim that indexical thoughts should be classified by means of context-invariant linguistic meanings? In general, thoughts are ascribed to subjects in the context of psychological explanations, including explanations of the subject’s behavior. For instance, if Peter is thirsty and believes that there is something in the fridge that will quench his thirst, we expect him (\textit{ceteris paribus}, as philosophers say, i.e. given assumptions about Peter’s other propositional attitudes) to walk to the fridge and look there for something to drink. Now Perry observes that two speakers, say Peter and Mary, uttering the sentence “I’m about to be attacked by a bear” might \textit{behave in the same way \textit{(ceteris paribus)}, even though the thoughts they express are different. Indeed, these thoughts are not truth-conditionally equivalent (they are not true in the same conditions), since one is about Peter while the other is about Mary. Given the assumption that Peter and Mary are cognitively alike in other respects (for instance, neither is suicidal), the fact that they both think the same (type of) indexical thought, expressed by the sentence “I’m about to be attacked by a bear”, explains the similarity in their behavior.

\textsuperscript{11} In this respect, linguistic meanings are akin to what David Kaplan calls “characters”.
\textsuperscript{12} Using the terminology introduced in “Belief and Acceptance”, the speakers \textit{accept} the same sentence. In general, one believes something \textit{by} accepting a sentence. In this essay, Perry makes clear that even non-linguistic animals can have beliefs by accepting sentences in his sense, even though they cannot express the latter. Similarly, the fact that we theorists classify thoughts with the help of linguistic meanings does not entail that the subjects of these thoughts do possess the faculty of language.

Perry’s claim that indexical sentences should be used to individuate or classify the corresponding psychological states does not entail that we generally think of things under the descriptions provided by the corresponding rules of reference. For instance, when Peter thinks the thought expressed by his utterance of “I am thirsty”, he probably does not think of himself as the speaker of this utterance. Indeed, in extraordinary circumstances, he might not even believe that he himself is the speaker of what is in fact his own utterance. It is not very plausible either that Peter thinks of himself as the speaker of a particular thought, namely the very thought that occupies his current thinking. This would entail that sophisticated concepts such as the concept of a particular thought are involved whenever one uses the first-person pronouns, or thinks about oneself.

On Perry’s more recent view (see Perry 1990a, 2001b), what correspond to indexicals in our minds are what he calls “notions”, namely mental representations of particular entities. These notions are mental files having specific epistemic and pragmatic roles. For instance, what corresponds to the indexical “I” at the level of thought is a self-notion, which contains information the subject gets in “normally self-informative ways” (including proprioception, e.g., I feel a tension in my left leg), and motivates actions that are “normally self-effective” (e.g., I immediately stretch my left leg). I cannot feel a tension in somebody else’s leg, and I can only move immediately my own leg. Of course my self-notion also contains information (or misinformation) about myself that I have acquired in other ways, such as by reading my birth certificate.

5. The varieties of indexicals

For the sake of simplicity, I assumed in the previous section that there is a one-to-one correspondence between indexical sentences, individuated in terms of their linguistic meanings, and the psychological profiles of the thoughts expressed by these sentences in each context of utterance. Even if this assumption is arguably true in some cases (such as those involving the indexical “I”), it cannot be maintained in full generality. The problem is that in other cases, the linguistic meaning of the indexical does not fully determine the cognitive significance of the corresponding thought-element. Suppose that Peter is seeing what, unbeknownst to him, is the stern and the bow of the same ship, whose middle is occluded by a big wall. He can intelligibly say something like “This ship [pointing to the stern] is not the
same as this ship [pointing to the bow]”. Of course, what he says is false, but it is so only *a posteriori*. So the thought-constituents expressed by the two occurrences of “this ship” cannot have the same cognitive significance (see Wettstein 1986).

To handle such cases, in which linguistic meaning does not fully determine cognitive significance, Perry (2001b, p. 59) proposes the following taxonomy of indexical expressions (slightly simplified here):

<table>
<thead>
<tr>
<th>Narrow context</th>
<th>Wide context</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automatic</strong></td>
<td><strong>Yea</strong></td>
</tr>
<tr>
<td>I, now*, here*,</td>
<td>that, this man,</td>
</tr>
<tr>
<td>Today</td>
<td>there, he, she</td>
</tr>
<tr>
<td><strong>Discretionary</strong></td>
<td>now, here</td>
</tr>
</tbody>
</table>

Table 2

The context exploited by an indexical is *narrow* if it includes only the agent, time and position of the utterance. Otherwise, it is *wide*. For instance, an utterance of “It is yea big” exploits a sample of the relevant size as provided by the outstretched hands of the speaker. In order to understand what is said by this utterance, the audience has to *perceive* what the speaker is demonstrating.

The distinction between automatic and discretionary indexicals has to do with the absence or presence of low-level intentions on the speaker’s part. Suppose that, around midnight, Pierre says “Today is your birthday”, while being unsure whether the time is just before or just after. His utterance is still true or false depending on whether midnight has actually passed. Pierre’s intentions seem irrelevant to determine the reference of “today” in this context. In contrast, something like a *directing intention* (Kaplan 1989b) is needed in order to determine the reference of an utterance of “This ship is impressive”. Indexicals such as “now” and “here” can have automatic uses, but most often they are discretionary, since the
extent of space or time to which they can be used to refer has almost no limit; think of “The dinosaurs are now extinct”.

The first-person pronoun seems to be a paradigmatic case of an automatic indexical (an utterance involving “I” refers to the speaker of the utterance), but some philosophers (such as Karl Bühler) have argued that it can refer to different stretches of the speaker’s life according to the context.\(^\text{13}\) I can refer to myself narrowly, to my temporary self, or more widely, to my stable self as it has been for many years. If something like this difference makes sense, then “I” is a discretionary indexical after all.

The fact that linguistic meaning often underdetermines the psychological types to which our thoughts belong leads to a distinction between linguistic and psychological modes of presentation. Consider the following proposal, adapted from Recanati (1993):

<table>
<thead>
<tr>
<th>Level of utterance</th>
<th>Level of thought</th>
</tr>
</thead>
<tbody>
<tr>
<td>linguistic meaning (linguistic mode of presentation)</td>
<td>proposition expressed = objective/referential content</td>
</tr>
<tr>
<td>v($)</td>
<td>v($)</td>
</tr>
<tr>
<td>proposition expressed</td>
<td>cognitive content</td>
</tr>
<tr>
<td></td>
<td>(psychological mode of presentation)</td>
</tr>
</tbody>
</table>

Table 3

According to Recanati’s proposal, the distinction between linguistic and psychological modes of presentation should be maintained even when the former fully determines the latter. For instance, an utterance of the sentence “I’m tired” can express the very same referential

\(^\text{13}\) See Bühler (1934).
content as the thought that I am tired. However, the utterance involves a linguistic mode of presentation, which can be specified by the rule according to which an utterance of “I” refers to the speaker of the utterance. The thought expressed by the utterance does not involve any linguistic mode of presentation (I do not have to think of myself as the speaker of the utterance), but rather a psychological mode of presentation (which in the case in point Recanati calls EGO).

The distinction between linguistic and psychological modes of presentation does not affect Perry’s criticism of Frege. Psychological modes of presentation cannot be equated with Fregean senses. The same psychological mode of presentation can determine more than one reference depending on the context. On Perry’s view, our thoughts can be classified by means of context-invariant psychological modes of presentation, although their referential or objective contents are apt to change across contexts of (real or potential) utterances.

6. Essential indexicality

In “The Problem of the Essential Indexical”, Perry puts forward a claim about the role of indexical beliefs in the explanation of action. There are changes in behaviour, Perry argues, that can only be explained by beliefs whose expression involves indexical terms like “I”, “now, “here” and “this”. As Perry puts it, replacement of them by other terms “destroys the force of the explanation” (1993, p. 35). Here is a now famous illustration of this claim with respect to the first-person pronoun:

I once followed a trail of sugar on a supermarket floor, pushing my cart down the aisle on one side of a tall counter and back the aisle on the other, seeking the shopper with the torn sack to tell him he was making a mess. With each trip around the counter, the trail became thicker. But I seemed unable to catch up. Finally, it dawned on me. I was the shopper I was trying to catch. (1993, p. 33)

Surely, the change in the shopper’s behavior, namely stopping the cart instead of following the trail, is the result of some Gestalt switch in his thought (“Finally, it dawned on me”). What is the nature of this switch? Well, the shopper suddenly realizes that he himself is making a mess. In other words, he forms an indexical belief he could express with the
sentence “I am making a mess”. Why is this belief essentially indexical, relative to the explanation of the shopper’s change in behaviour? We can suppose that when the shopper was following the trail, he already had a belief about a man, namely John Perry, who was making a mess. Perhaps he pointed to a man in the mirror and did not realize that that man was in fact himself. So he formed a true belief he could express with the sentence “That man is making a mess”. However, he failed to move from that belief to the belief that he himself is making a mess. Both beliefs have the same truth-conditions, in the sense that they are about the same objective state of affairs, but only the latter belief reflects the shopper’s Gestalt switch. Thus, the presence of the first-person indexical is essential to the explanation of the shopper’s change in behavior.

Analogous examples involving other types of indexicals can easily be designed. For instance, even if I know that the meeting starts at 2 PM, I may not rush when the time comes, because I may not know that it is 2 PM now. The indexical “now”, or at least the psychological mode of presentation corresponding to it, seems to be essential to my decision to rush. Similarly, if I know that the meeting takes place in Salle des Actes, and I am in Salle des Actes, I may not sit down, because I may not know that Salle des Actes is here. The indexical “here”, or the psychological mode of presentation corresponding to it, seems to be essential to my decision to stay and sit in the room.

Perry calls “locating beliefs” (p. 35) the beliefs about where one is, when it is, and who one is, which are decisive in shaping one’s everyday behavior. The claim of the essential indexical is that these beliefs are essentially indexical. They must be beliefs whose canonical expression requires the use of some indexical, as in the sentences “Here is the Salle des Actes”, “It’s 2 PM now”, or “I am John Perry”.

Clearly, Perry’s aim in “The Problem of the Essential Indexical” is not just to point out the existence of actions (or action tendencies, since analogous examples can be given with emotions) whose explanation requires indexical beliefs. His main claim is more ambitious, and concerns the essential role of indexicality in mediating one’s conceptual thought and action. As Millikan puts it, “[t]he ability of an agent to project knowledge of the world into relevant action in the world depends on the ability to think indexical thoughts” (1993, p.

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14 Presumably, at least in Perry’s example, the shopper literally changed his mind, since before the Gestalt switch he believed something he could express with “I am not making a mess”.

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Indeed, Perry’s point is that one’s knowledge that the meeting starts at 2 PM in the Salle des Actes cannot project directly into action. It can project into action only in concert with indexical knowledge (or belief) to the effect that the meeting starts *hic et nunc*.

Perry argues that the Fregean framework is unable to explain why indexicality is essential. The difficulty is that “having a self-locating belief does not consist in believing a Fregean thought” (1993, p. 21). Fregean thoughts are classical propositions, in the sense that they are true or false absolutely (not relative to any parameter, other than a possible world). However:

The sentence “I am making a mess” does not identify a proposition. For this sentence is not true or false absolutely, but only as said by one person or another; had another shopper said it when I did, he would have been wrong. So the sentence by which I identify what I came to believe does not identify, by itself, a proposition. There is a missing conceptual ingredient: a sense for which I am the reference, or a complex of properties I alone have, or a singular term that refers to no one but me. (1993, p. 37)

Perry doubts that the missing conceptual ingredient can be found. As we have seen above, I may not have any definite description that I could substitute for the first person pronoun, and even if I had one, it might not be true of myself, so that it might fail to target the appropriate reference. Analogous remarks apply to the other types of indexicals. More generally, what Perry calls “the doctrine of propositions”, according to which beliefs can be fully analysed as relations to propositions, cannot be maintained.

### 7. The reflexive-referential theory

Much of Perry’s early work on indexicality is a sustained attempt to show that an adequate account of the phenomenon of indexicality forces us to split up the notion of Fregean sense into two distinct semantic properties: the linguistic meanings of indexical sentences, considered as properties of expression types, and the Russellian propositions or referential

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15 In fact, Millikan is skeptical about the claim of the essential indexical. For instance, she argues that what corresponds to the indexical “I” in our minds is a non-indexical mental *proper name*, which *can* project directly into action. Millikan assumes that at the level of thought, the special symbol one uses to designate oneself as oneself is not context-sensitive, since its reference is always the same, namely oneself. This assumption has been challenged by Gordon (1995), who suggests that imagining being someone else might involve a use of the mental indexical “I” to refer to another person.
contents expressed by utterances of these sentences. On the one hand, linguistic meanings reflect the projectible roles that belief states play in our cognitive economy, which is why we can appeal to them in order to explain human behavior. On the other hand, Russellian propositions typically capture what is said by utterances.

Perry's later work integrates indexicality in a much wider context. For the last decade he has been developing an ambitious theory of communication in which indexicality comes out as a special case of a more general phenomenon. The most salient change is that the older two-tiered approach gives way to a multitiered approach in which a given utterance or thought is associated with many levels of truth-conditions and contents. More precisely, utterances express various kinds of what Perry calls “reflexive contents” along with their referential or “official” contents.

Let us describe the basic tenets of Perry's reflexive-referential theory. Utterances and thoughts, considered as (respectively physical and mental) particulars, are true in certain conditions and false in others. Traditional truth-conditional semantics uses the following schematic biconditional to capture the truth-conditions of a given utterance $u$, where “iff” is the standard abbreviation for “if and only if”:

$$u \text{ is true iff } p.$$ (6)

A potentially misleading feature of this simple schema is that it has an indefinite number of true instances, even when the utterance is fixed. For instance, the shopper’s utterance $u$ of the sentence “I am making a mess” is true iff the speaker of $u$ is making of mess, but (as things are) it is also true iff John Perry is making a mess. It appears that one cannot speak of the truth-conditions of this utterance, since many propositions $p$ can figure at the right-hand side of the relevant biconditional instance.

Now the reflexive-referential theory suggests a more perspicious method for specifying the truth-conditions of utterances (and thoughts). According to this method, the biconditionals used to capture truth-conditions have the following form:

$$\text{Given constraints } c, u \text{ is true iff } p.$$ (7)

Russellian propositions (see Russell 1918) are propositions whose constituents are worldly objects and properties, rather than modes of presentation. For instance, the proposition expressed by “Mont-Blanc is more than 4000 meters high” is constituted by Mont-Blanc itself, along with the property of being more than 4000 meters high.
The proposition that \( p \) is the content of the utterance \( u \) relative to the constraints \( c \). Among these constraints are the conventions of English and what Perry calls “connecting facts”, such as the contingent fact that the speaker of the utterance is John Perry.

So the idea is that the same utterance or thought can be associated with different levels of truth-conditions depending on what is presupposed about the situation in question. Let us see how this new idea works with respect to a particular case. Suppose that Pierre utters the indexical sentence \( s \) “The meeting starts now”. The truth-conditions of Pierre’s utterance \( u_P \) can be specified in many different ways, including the following:

\[(8) \text{ Given facts about the linguistic meaning of } s, u_P \text{ is true iff the meeting starts at the time of } u_P.\]

Note that the proposition expressed by the right-hand side of this biconditional is reflexive, in the sense that it refers to the utterance itself. The notion of reflexive proposition or content is connected to the earlier notion of psychological role, but only indirectly. Competent speakers of English will know (at least tacitly) that any utterance of the English sentence “The meeting starts now” will be true iff the meeting starts at the time of the utterance. What they know are the reflexive truth-conditions of the sentence. Reflexive truth-conditions are what correspond to roles, meanings, or characters. Now it is only when these general conditions are applied to particular utterances, such as Pierre’s, that we get their reflexive contents, such as the right-hand side of the biconditional in (8).

Reflexive content is also what the competent speaker of English knows about an utterance when she does not know when, where, and by whom the utterance has been produced. To give another oft-cited example of Perry (see 1993, p. 134), suppose that you receive a postcard but are unable to read the timestamp or the signature. All that you can read is “I am having a good time here”. Even if you do not know what the author of the postcard said in writing this sentence, you know at least that he or she was having a good time then, i.e. at the time the postcard was written.

Perry makes clear that the reflexive content specified by (8) does not usually correspond to what is said or what is believed by Pierre. Rather, what is said is the referential
content of Pierre’s utterance, which can be specified by fixing further facts about Pierre’s situation:

(9) Given facts about the linguistic meaning of $s$, and the fact that the time of $u_P$ is 2 PM, $u_P$ is true iff the meeting starts at 2 PM.

In contrast to (8), the proposition expressed by the right-hand side of the biconditional is not reflexive, since it does not involve the utterance itself as a constituent. It is called “referential” since it involves only the conditions that are put on the subject matter of Pierre’s utterance, once we have fixed all the facts that determine reference. Perry also calls this content “official”, since it corresponds to the notion of semantic content used by proponents of the direct theory of reference (among others, Ruth Barcan Marcus, Saul Kripke, Keith Donnellan, David Kaplan, and Howard Wettstein). In particular, referential content captures the modal profile of the utterance. For instance, even if all utterances of the sentence “I am here now” are true, what is said by their authors is not a necessary truth. It is a contingent fact that one is located at a given place at a given time.

The reflexive-referential theory is much more flexible than the earlier, two-tiered theory since it allows the semanticist to exploit several levels of truth-conditions and contents depending on her explanatory goals. Another advantage of the theory is that indexicality comes out as a special case of reflexivity, which concerns non-indexical expressions as well. Suppose for instance that $u$ is my utterance of the sentence “Eros is trilingual”. Even though “Eros” is not an indexical but a proper name, $u$ has both reflexive and referential truth-conditions, as specified respectively in (10) and (11):

(10) Given facts about linguistic meaning, $u$ is true iff the person one may designate with “Eros” in the convention $u$ exploits is trilingual.

(11) Given facts about linguistic meaning plus the fact that the person one may designate with “Eros” in the convention $u$ exploits is Eros Corazza, $u$ is true iff Eros Corazza is trilingual.

Even is the hearer of $u$ does not know that “Eros” designates Eros Corazza, the famous expert on indexicality, she can recover at least the reflexive truth-conditions of $u$ as stated in (10). Note that linguistic meaning plays a quite different role in the case of indexicals and

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17 Referential content is also called “incremental content” in Perry’s (1990b) “Individuals in Informational and Intentional Content”.
names. Indexicals are tied by their linguistic meanings to different relationships to the utterance, such as being its speaker or producer (in the case of “I”). In contrast, the linguistic meaning of names at best narrows down the set of permissive conventions exploited by the utterance. Since many persons may be called “Eros”, which convention is actually at play cannot be determined merely at the level of meaning.

8. Less is more: Radical minimalism

The reflexive-referential theory is also more flexible than most versions of the orthodox theory of direct reference. In particular, the latter theory makes two assumptions that Perry both rejects.

A1. What is said by an utterance is always its referential content.

A2. The semantic content of an utterance is always its referential content.

Against the first assumption, Perry occasionally allows for what is said to diverge from referential content. Suppose for instance that Perry introduces himself to a stranger by uttering the sentence “I am John Perry”. The referential content of Perry’s utterance is as trivial and necessary as the proposition that John Perry is John Perry. But surely the stranger learns something interesting when John Perry said to him “I am John Perry”. On the reflexive-referential theory, she learns that a certain reflexive proposition is true, namely that the speaker of this utterance is John Perry (or more precisely that one may call the speaker of this utterance “John Perry”). In this context, it is best to construe what is said as being determined by the reflexive content of the utterance rather than its referential content.

Someone can reject the first assumption and still adhere to the second one. For instance, one might think that semantics is primarily concerned with the determination of referential content, and that what is said by an utterance is a pragmatic matter. In rejecting A2, Perry defends a quite different conception of the interface between semantics and pragmatics. On his view, recently developed in concert with Kepa Korta, the semantic content of an utterance is its reflexive content, given the meaning of the uttered sentence. This view might seem to give more justice to the intuitions that semantics has to do with general

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18 This is the view of Cappelen and Lepore (2005).
knowledge of language, while pragmatics concerns idiosyncratic features of the context of utterance, including speakers’ intentions. As Perry says “semantics can give us *utterance-bound descriptions* of what is said, but cannot usually provide *utterance-free* descriptions of what is said” (2007, p. 534). In other words, semantics is concerned with reflexive contents and not with referential contents. Reflexive contents are what we need to construct a truth-conditional and compositional theory of meaning.

In this respect, Perry and Korta’s view about the natural dividing point between semantics and pragmatics is more minimalist than Cappelen and Lepore (2005)’s self-proclaimed semantic minimalism. Cappelen and Lepore argued that semantics proper is concerned with the resolution of the reference of indexical expressions, but should stop there. Perry and Korta deplore that we have already gone too far:

What Kepa Korta and I propose is that the reflexive content, with meaning fixed, be taken as the semantic content […] for [the] purposes [of] constructing a compositional, truth conditional theory of meaning. On the issue of “pragmatic intrusion” into semantic content, then, I am more radical, more minimal, than those, like Cappelen and Lepore (2005), who factor in contextually determined values for indexicals, and a number of other things (resolution of reference for demonstratives and names, resolution of ambiguity and vagueness) that, as far as I can see, would have to be based on speaker’s intentions. (2007, p. 529)

On their view, the semanticist is not particularly interested in the fact that John Perry is the referent of “I” in the context of the shopper’s utterance of “I am making a mess”. What she is interested in is the fact that this utterance is true iff the speaker is making a mess, whoever he or she is. The rest is only pragmatics, where referential content still plays an important role.

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