

When Shapes and Sounds Become Words: Indexicals and the Metaphysics of Semantic Tokens

1. The Trouble with Indexicals

Kaplan (1979) proposed that the meaning of indexicals like 'I', 'here' and 'now' is fixed by rules he called their 'character'. When coupled with a 'context', which is a set of indices picking out an agent, time and place, the character identifies a 'content' for an indexical, which is what the indexical refers to. The content of 'I' is the agent at the context, the content of 'here' is the place of the context, and the content of 'now' is the time of the context. Kaplan then proposes that admissible or 'proper' contexts are restricted to those in which the agent is at the time and place of the context. As a result, the following string will always be true:

1) I am here now

Where indexicals are produced in token utterances, Kaplan's schema is generally taken to imply that 'I' will refer to the agent that produces the token, 'here' to the place of production, and 'now' to the time of production. This makes sense of many typical uses of indexicals. If Superman, standing on Krypton on the 1st of April 1938 says 'I'm here now', the token 'I' picks out Superman, 'here' picks out Krypton, and 'now' picks out the 1st of April 1938 – the producer, place of production, and time of

production. However, many other cases where indexicals are produced have been identified that do not follow this pattern. One can, for example, record the following message on an answering machine:

2) I am not here now

When this message is played back to a caller, the token 'now' appears to refer not to the time the token is produced by the agent, but to the time when the message is played back (Sidelle 1991). Similarly, recall the tour-guide in Jurassic Park, who conducts his tour remotely. His voice is projected over a loudspeaker on the tour-bus, while he remains safe in a central office. As the tour-bus is passing the Tyrannosaurus Rex enclosure, he can say:

3) Here you can see T-Rex

But in this case the token 'here' refers not to the location of the tour-guide, but to the location of the bus where his voice is broadcast. Again, the location of production is not the location picked out by 'here'.

As a result of cases like these, many have argued that a speaker's intentions must play a role in deciding the meaning a token indexical has. It has been argued that intentions fix, from one case to the next, either the character that governs a token indexical (Smith 1989); the context in which a token indexical is supposed to be evaluated (Predelli 1998, 2002, 2008, Akerman 2009); or the content of a

demonstrative component that may belong to indexicals, supposing 'I', 'here' and 'now' are equivalent to 'this person', 'this place' and 'this time' (Krasner 2006, Mount 2009, Recanati 2001, 2010¹). According to these views, the reference of a token indexical is determined by its producer's intentions, and not just who produces it or when. This allows that a token of 'now' can refer to the time of playback of an answering machine message, for example, just in case the person who records the token intends either the character, context of interpretation, or demonstrative content of the indexical to deliver the time of hearing as the reference of the token, and similarly for the Jurassic Park and other cases.

The difficulty faced by the intentionalist strategy is that it makes it hard to explain how uses of indexicals are easily understood. We have no trouble understanding utterances of 1), 2) or 3). But if a producer's intentions can adjust the character, context or content of a token indexical so that it picks out whatever person, place or time they like, then it is unclear how hearers confidently know what uses of these indexicals refer to. If nothing stops a speaker from intending a token of 'now' she records into her answering machine to refer to a thousand years past, why is it that hearers always know that the token picks out the time of hearing? And if nothing stops the tour-guide in the case above from intending 'here' to refer to the moon, why does his audience immediately know which location he is referring to? This has become the standard objection to the intentionalist approach.

To avoid this problem, others argue that the meaning of indexicals must be constrained by conventional rules to a greater degree than the intentionalist allows.

¹ Recanati endorses this approach for 'here' and 'now' only.

Some of these proposals appeal to *multiple* rules, and hold that the rule that applies is determined not by a producer's intentions, but by non-intentional features of the context (Corazza et al 2002, Gorvette 2005, Parsons 2011, Michaelson 2013). On an answering-machine, the rule will fix the time of hearing as the time picked out by a token of 'now', but in face-to-face discourse, the rule fixes the time of speaking. But this view has implausible implications too. If indexicals were governed by many rules, they should be hard for users to learn, and to use, and yet they don't seem to be (Predelli 2002: 313, Corazza 2004: 306). The multiple-rule approach also suggests that indexicals are ambiguous, something that we have independent reasons to doubt (Cohen and Michaelson, 2013: 585).

What would avoid all of these problems, of course, is an account that explains our various uses of indexicals by assigning just one rule to each indexical type, but without requiring speaker intentions to arbitrate on what counts as the context or content from one token to the next. Cohen (2013) has recently argued that we can accomplish exactly this. What is required is what Cohen calls a 'token-contextualist' interpretation of Kaplan's model, a proposal he attributes originally to Sidelle (1991). On this view, the content of 'I', 'here', or 'now' is not the agent, place or time in the context of *production*, but the agent, place, or time in the context of *tokening*². Importantly, for typical uses of indexicals, where the producer, place and time of production is referred to with 'I', 'here' and 'now', this model will deliver the same

² Cohen in fact thinks 'I' always refers to its producer, while 'now' and 'here' pick out the time and place of tokening. This can be interpreted to mean that the context for 'I' is the context of production but the context for 'here' and 'now' is the context of tokening, which some find inelegant (Michaelson 2011: fn15). However if we assume that the agent of a context of tokening just is the original producer of the token, then we can eliminate the inelegance so that all variables are fixed by facts about the context of tokening (Cohen 2013: 7).

results as the production-contextual model, since in such cases the context of tokening will be the same as the context of production. But the account promises to deal with the atypical cases considered too. The token 'now' in a message played back by an answering-machine refers to the time the message is played back, not produced – and the token-contextual account predicts this, since the time of playback is the time of tokening (the time the token occurs). And the token 'here' in the tour-guide's message in Jurassic Park refers not to the location of production of the message but to the location of tokening (the place the token occurs), which is on the tour-bus.

Since it avoids the difficulties faced by more elaborate approaches, this account is well worth pursuing. However, there is a set of problem cases for the account that are largely unexplored, and which threaten to entirely upend the view.

2. Travelling tokens, Stray tokens, Extra tokens

Difficulties arise for the token-contextual view when tokens occur in places or at times that they don't seem to refer to. Cases already discussed include the following. Suppose I inscribe a note on a post-card – 'I wish you were here' – and send it from Tahiti to Ireland. We use the token 'here' in such cases to refer to Tahiti. And yet the token ends up, and is read, in Ireland. The token-contextual view seems to imply, as a result, that 'here' refers to Ireland (Michaelson 2013: 17). Cohen (2013: 24) argues that such cases may be understood anaphorically, where the reference of 'here' is anaphorically fixed by a location specified elsewhere on the post-card (such as the

post-mark). It is acknowledged that the details underpinning this kind of anaphora are not clearly understood, but for the sake of argument let's suppose that's a possible solution. Even if we allow it, however, there are more serious problems.

Consider a case discussed by Predelli (1998). A note is written in the morning by Jones for his wife, who he expects to return to the house at 4pm. Jones writes 'As you can see, I'm not here now' on the note. However, his wife returns at 10pm, and reads the note then. The token-contextual account seems to imply that the indexical picks out 10pm, when it is read – and yet Predelli's reasonable intuition is that Jones' wife misunderstands the note if she takes it to refer to 10pm. Cohen replies to this case by simply rejecting Predelli's intuition, and insisting that the token does indeed refer to 10pm. I don't find this convincing, particularly in light of the following analogous case. Suppose a restaurant manager places a sign inside the door of her restaurant reading 'Please wait here to be seated'. The sign seems to refer to its location – just as the token-contextual account predicts. But consider what happens if the sign is thoughtlessly moved by a cleaner from its current position to a broom closet at the rear of the building. A customer looking for the restroom now sees the sign through the open closet door. Just as in Predelli's case, where the note is read at a time other than that intended, in this case the sign is read in a place other than that intended. Since Cohen is committed that Predelli's note refers to the time it is read, he should be committed in this case that customers have been asked to wait in the broom closet. That this is doubtful is even clearer when we think about where the sign in the restaurant came from in the first place. Presumably, somewhere in the world there is a factory that makes these signs. In

the corner of the factory, a stack of 'Please wait here' signs sits ready to be dispatched to restaurants. Do the signs in the stack form a chorus inviting people to wait next to them? Cohen's position seems to commit him to the implausible claim that they do. We could call such cases 'stray tokens', which either end up or start out where nobody intended them to be.

And the difficulties don't end there. Perhaps the most pervasive problem for a token-contextual account is what we could call 'extra tokens'. When my message 'I'm not here now' is played back to someone whose call I miss, the token 'now' refers to the time of tokening. But there is another apparent token in this case that the token-contextualist does not explain. When I originally record the message into my answering-machine, I produce an apparent token of the sentence 'I'm not here now'. The token-contextual account seems to imply that in this event, I refer to the time at which I speak. The account threatens, as a result, to make all answer-phone users liars.

The same problem arises for the tour-guide: although the sentence 'here you will see T-Rex' is tokened on the tour-bus, another apparent token of the sentence occurs in the office where the tour-guide speaks. Does he lie and tell the truth at the same time? Or consider an ordinary telephone conversation. If I phone you in Alaska and say 'I'm here now' while speaking in Paris, one apparent token of 'here' occurs where I am, and another is produced in Alaska, for you to hear. Do I refer to both locations simultaneously, and contradict myself?

Finally, in a particularly perplexing case, consider a billboard at the side of a motorway that reads 'You are now entering beautiful Poughkeepsie' (cf. Egan 2009).

If we suppose a temporal indexical tokens at a time, and that the inscription on the billboard tokens when it is read by passing drivers, then the token-contextual account predicts, rightly, that the inscription refers to those occasions on which it is passed. But what about the occasions when the sign is not being passed? The token-contextual account does nothing to rule out those occasions, and so implies that what the sign displays the majority of the time is at best nonsense, and at worst a lie. This seems like another bizarre outcome for the token-contextual view.

Can the token-contextualist deal with these cases? As I argue next, she can, by appealing to speaker intentions. However, by making the appeal to speaker-intentions at the level of the metaphysics of tokens rather than in order to decide their meaning, this can be done without reintroducing the difficulties associated with intentionalist approaches that the conventionalist hopes to avoid.

3. A Minimally Intentionalist Metaphysics for Semantic Tokens

Nobody should believe that intentions have no role at all to play in a semantic theory. Intentions, after all, are required to turn a shape or sound into a semantic token in the first place. Suppose a rock trapped in a glacier slowly carves the shape 'I'm not here now' into a wall of granite it passes over (Millikan 2012: 221). Does anyone think that the rock tells a lie? Hopefully not: the rock is obviously incapable of saying anything. Although an inscription of the shape 'I'm not here now' can under some circumstances mean *I'm not here now*, what is at least required for this to happen is that some agent intends it to express this meaning. This is simply to

restate the point made by Grice (1957) that isolates the class of linguistically meaningful events from everything else (including scratches made by glaciers, shapes in the clouds, and noises made by cats that sound like 'hello'). Although Grice's full conditions for a shape or sound to count as an utterance are often considered too strong, this minimal component of his view is widely endorsed (Searle 1969, Kaplan 1990, Richard 1990, Davis 2003, Recanati 2010, Millikan 2012). We could call this view 'minimal intentionalism', which holds that some morphological token φ (a token shape or sound) is a semantic token (an utterance) with the meaning p only if it is intended by its user³ S to express p :

MI: φ is a semantic token meaning $p \rightarrow S$ intends that φ expresses p

To distinguish utterances of 'hello' from the cat's miao, it would seem that any theory of meaning needs to endorse something like MI. Crucially, however, the appeal to intentions in MI is very different to that made on the more liberal intentionalist accounts considered above, on which a speaker's intentions can arbitrate between multiple possible referents a token indexical can have. This is the result the conventionalist wants to block, and replace with a semantic rule that determines just one possible referent for any token indexical, thus minimizing the interpretation work demanded of hearers. But the conventionalist can do this while still endorsing MI. Even if the only reference a token of 'here' can have is its location

³ I say 'user' rather than the more common 'producer' here because, as we shall see, the user of a morphological token needn't always be its producer.

of tokening, for example, it can still be the case that for a morphological token to be a token indexical in the first place, it must be intended to be by its user.

In spite of its modesty, however, MI has quite far-reaching consequences for the metaphysics of token utterances, which can be invoked to resolve the problems raised here for token-contextualism. First consider the ‘extra-tokens’ problem. In the production of an answering machine message, in addition to the sounds produced by the answering machine when someone calls, the recorder produces the sound ‘I’m not here now’ in recording the message – and this creates an apparent problem for the token-contextualist. But MI eliminates the problem. If the producer doesn’t intend the noise that comes out of her mouth at the time of recording the message to express the proposition *I’m not here now*, but intends only the sound subsequently produced by the answering machine to express that proposition, the sound initially produced is not a semantic token at all – it’s just a noise. Note again that speaker intentions are not arbitrating here between many possible meanings for a given semantic token, as they are on more liberal intentionalist accounts. Instead, they are invoked to decide, for a given morphological token, whether it counts as a semantic token in the first place.

MI similarly resolves the tour-guide problem. The tour-guide causes two morphological tokens to be produced – one in the tour-bus, and one in his office, which raises a problem for the token-contextualist. But if the guide does not intend the sound he makes in his office to express any meaning, but rather intends only the sound on the bus to, then we can again rule out the former as a non-utterance. And this resolves the puzzle raised by the telephone call too. The sound ‘here’ I produce

in Paris is intended to have semantic content by its user, me, and according to the token-contextual account, it picks out Paris. But if the sound produced by the telephone in Alaska is not intended by me to express anything, then according to MI it simply doesn't count as a semantic token.⁴ The first advantage of MI, then, is that it resolves the extra-tokens problem.

The consequences of MI reach farther still, however. Note that morphological tokens exist at particular places and times. If user-intentions are required for morphological tokens to count as semantic tokens, these intentions must be directed at shapes and sounds in particular places, and at particular times. The consequence of this is that morphological tokens can *change* from being mere shapes and sounds to being semantic tokens, and back again. To see how this works, suppose I inscribe 'this is a wall' on a post-it note, and then affix the note to the wall. Once the note is affixed to the wall, it seems I have said something true. But before I stick the note to the wall, we are not tempted to think that I have lied – even if the note starts out on the table. Why not? The reason is that the inscription only becomes a semantic token when I stick it to the wall, since it is only while it is on the wall that I intend it to express anything. Equally, I am not made a liar if the note later falls off the wall and lands on the floor – because my intention is only for this inscription to express something when it is fixed to the wall. Outside of the time and place at which it is intended by me to express something, it loses its semantic tokenhood.

⁴ This might sound surprising, since by listening to the sound produced in Alaska, you can know what I have said. However, note that if the sound in Alaska is morphologically type-identical to the sound in Paris (they sound the same), it can allow you to know what I have said by allowing you to know what the token I have produced in Paris sounds like. It needn't itself, as a result, be a semantic token.

This consequence of MI resolves the stray-tokens problem. In Predelli's case, Jones writes the note in the morning, expecting it to be read at 4pm, but it isn't read until 10pm. Cohen bites the bullet and concludes that the indexical in the note picks out 10pm. But it follows from MI that this is not necessary. If Jones only intends the inscription on the paper to count as an utterance at 4pm, then MI entails that it only counts as an utterance at that time. On this view, the indexical 'tokens' at 4pm - when it is intended to. But it does not token at the time Jones writes the note (which would make him a liar as he writes); and if Jones intends it only to token at 4pm it will cease to be a semantic token *after* 4pm, when the inscription will return to being simply a shape. We can therefore maintain the token-contextual view without abandoning Predelli's reasonable intuitions about this case: the token indexical picks out 4pm, which is the only time at which it *is* a token indexical. All this follows from MI.

That shapes and sounds can transition in and out of being utterances is made even clearer when we revisit the case of the 'Please wait here' sign. The stack of signs in the factory easily fails MI, since here the signs are not intended by anyone to express anything. Their producers, the factory workers, are making the signs not with the intention that the signs express something, but that they display particular shapes. But now consider what happens when the signs are bought by restaurateurs and positioned intentionally inside the doors of their establishments. What was just a shape on a piece of metal becomes a semantic token, because now the shape is used with the intention that it express a particular meaning.⁵ And this resolves the

⁵ As a result, in this case, the producer of the sign is not its user – see fn. 2.

puzzle that arises when the sign is moved to the closet by the cleaner. In this case, customers are not in fact invited to wait in this absurd location. Rather, since the manager who originally places the sign intends it to express 'Please wait here' only when it is at the location at which she places it, it ceases to be a semantic token when it is removed from that position and unthinkingly placed somewhere else. And of course it can become a semantic token again, if it is repositioned anew with the intention that it express this proposition once again.

The most delicate consequence of MI is found in the case of the billboard reading 'You are Now Entering Beautiful Poughkeepsie'. If the token-contextual account is right, the token 'now' on the sign refers to the time or times at which it tokens. We want those occasions to be those on which drivers pass the sign – and not the indefinitely many occasions on which no one is passing. But again, MI can rule out those occasions. Since the person who erects the sign only intends it to express the proposition in question when it is seen by a passing driver, this means that what hangs indefinitely on the side of the motorway is not a semantic token at all. Rather, what hangs there indefinitely is simply a shape, which becomes a semantic token only on those occasions that it is passed by a driver.

To all of this, it might be objected that although I have insisted that this appeal to intentions does not introduce the problems for interpretation of earlier accounts, it introduces difficulties of interpretation of its own. For example, a hearer will have to decide which morphological tokens are utterances, and which are simply sounds and shapes – the noise made in recording an answer-phone message, or the noise made at playback. That is true, although the decision will often be

relatively easy. In the answer-phone case, if we assume the message-leaver is honest and sane, only the sound at playback could be intended to express the proposition 'I'm not here now', and hence only that sound could count as a semantic token. But no matter how hard it is to decide which are the semantic tokens, the current account will still leave interpreters with less work to do than more liberal intentionalist accounts. On this account, once it is decided which are the token indexicals, there is only one possible referent for each, while on the more liberal intentionalist accounts there still remain many.

As we can see, the metaphysics of semantic tokens is thus quite complex, allowing shapes and sounds to transition in and out of being semantic tokens, even assuming no more than the modest criterion for semantic token-hood in MI. For all its complexity, however, I wager that it is quite consistent, and that qualifying the token-contextual account with these considerations greatly reinforces this promising approach.⁶

References:

Akerman, J. (2009). A Plea for Pragmatics. *Synthese*, 170: 155-167.

Borg, E. (2004). *Minimal Semantics*. Oxford University Press.

Cohen, J. (2013). Indexicality and the Puzzle of the Answering Machine. *The Journal of Philosophy*, 110 (1): 5-32.

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- Cohen, J. and Eliot Michaelson. (2013). Indexicality and the Answering Machine Paradox. *Philosophy Compass* 8(6): 580-592.
- Corazza, E., Fish, W., and Gorvett, J., (2001). Who is 'I'? *Philosophical Studies*, 107: 1-21.
- Corazza, E. (2004). On the Alleged Ambiguity of 'now' and 'here'. *Synthese*. 138: 289-313.
- Davis, M. (2003). *Meaning, Expression, and Thought*. Oxford: Oxford University Press.
- Dodd, D. and Sweeney, P. (2010). Indexicals and Utterance Production. *Philosophical Studies*, 150:331–348.
- Egan, A. (2009). Billboards, Bombs and Shotgun Weddings. *Synthese* 166 (2): 251-279.
- Gauker, C. (2008). Zero Tolerance for Pragmatics. *Synthese*, 165: 359-371.
- Gorvett, J. (2005). Back Through the Looking Glass: On the Relationship between Intentions and Indexicals. *Philosophical Studies*, 124: 295-312.
- Grice, P. (1957). Meaning. *The Philosophical Review*, 66: 377-88.
- Kaplan, D. (1977/1989). Demonstratives. In Almog, Perry and Wettstein, *Themes from Kaplan* (Oxford: Oxford University Press): 481-564.
- Kaplan, D. (1990). Words. *Proceedings of the Aristotelian Society Supp* Vol LXIV: 93-121.
- Krasner, D. A. (2006). Smith on indexicals. *Synthese*, 153, 49–67.
- Michaelson, E. (2011). Shifty Characters. Ms., UCLA.
- Millikan, R. (2012). Are there Mental Indexicals and Demonstratives? *Philosophical Perspectives*, 26: 217-234.

- Mount, A. (2009). The Impurity of Pure Indexicals. *Philosophical Studies* 138: 193-209.
- Parsons, J. (2011). Assessment-Contextual Indexicals. *Australasian Journal of Philosophy*, 89: 1, 1-17.
- Perry, J. (2003). Predelli's Threatening Note. *Journal of Pragmatics* 35: 373-87.
- Predelli, S. (1998). I am not here now. *Analysis* 58: 107-15.
- Predelli, S. (2002). Intentions, Indexicals and Communication. *Analysis*, 62: 310-316.
- Recanati, F. (2001). Are 'Here' and 'Now' Indexicals? *Texte*: 127/8.
- Recanati, F. (2010). *Truth Conditional Pragmatics*. Oxford: Oxford University Press.
- Searle, J. (1969). *Speech Acts*. Oxford: Blackwell.
- Smith, Q. (1989). The Multiple Uses of Indexicals. *Synthese* 78: 167-191.
- Sidelle, A. (1991). The Answering Machine Paradox. *Canadian Journal of Philosophy*, 81:4: 525-539.