The Interpretation of the Reference of "Now" in Written Messages: An Experimental View

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The semantics of pure indexicals "I," "here," and "now" has been discussed in the area of philosophy of language. According to David Kaplan, in face-to-face communication, "I," "here," and "now" refer respectively to the agent, the place, and the time of the context of utterance. In recorded and written messages, however, the identification of pure indexical references is nontrivial, given that there is a gap between the time of utterance and that of interpretation. In the literature, four major views are proposed from a philosophical perspective. While these are theoretically competing, no empirical data or pragmatic analyses have been provided. How is the reference of "now" in written messages interpreted? Which views proposed in the literature are supported empirically? This paper investigates these questions from experimental and pragmatic perspectives.

Keywords: reference, pure indexicals, now, written messages, experimental pragmatics

1. Introduction

This paper aims to shed new light on a philosophical issue from an experimental perspective.

The semantics of pure indexicals "I," "here," and "now" has been discussed in the area of philosophy of language. According to Kaplan (1989), in face-to-face communication, "I," "here," and "now" refer respectively to the agent, the place, and the time of the context of utterance.

In recorded and written messages, however, the identification of pure indexical references (henceforth, PIRs) is nontrivial, given that there is a gap between the time of utterance and that of interpretation. Recorded and written messages are beyond the scope of Kaplan's (1989) theory, which limits itself to the analysis of "proper utterances," where the agent is located at the place and the time of utterance (509). In the literature, four major views, which will be introduced in the next section, are proposed from a philosophical perspective. While these are theoretically competing, no empirical data or pragmatic analyses have been provided.

In this paper, I will focus on "now" in written messages. How is the reference of "now" in written messages interpreted? Which views proposed in the literature are supported empirically? This paper investigates these questions from experimental and pragmatic perspectives.

After introducing previous work, I will talk about the method of the experiment, results, discussion, and conclusion.

2. Previous Work

Concerning the reference of PIRs in written messages, the following four major views are proposed in the literature.

The "intentionalist view" (henceforth, the "I-view"), proposed by Predelli (1998; 2002; 2011), the "conventionalist view" (henceforth, the "C-view"), proposed by Corazza, Fish, and Gorvet (2002), the "context of tokening view" (henceforth, the "CT-view"), proposed by Cohen (2013), and the "shifty characters view" (henceforth, the "SC-view"), proposed by Michaelson (2014).

I will summarize these views in the following.

2.1. The I-view

The I-view argues that PIRs are to be determined relative to the context intended by the speaker. Predelli introduces the notion of the (intended) context of interpretation:

(1) It is then natural to suggest that an adequate explanation of written and recorded messages must take into consideration the co-ordinates intended by the speaker as relevant for the semantic evaluation of his message. I shall refer to the context containing these parameters as the "*(intended) context of interpretation*" (112, Original italics and parentheses).

Let us consider a concrete example.

(2) John has an appointment with his student Mike at three. But he came up with an urgent business. Therefore, he puts a note on his office door: "Dear Mike, I am busy now. Please come at four."

In the note in (2), the context of interpretation intended by John is that Mike reads the note at three at John's office door. Therefore, in the I-view, "I" and "now" refer to John and three o'clock, respectively, as intended by John.

Let us consider another example, taken from Sidelle (1991).

(3) … consider grabbing a note from the kitchen table as one heads out to the car. Once out on the road, one reads "I'm not here: out playing pool. Bob." The location of the utterance is one's car, surely the referent of "here" is the house (537).

Concerning the reference of "here," the I-view takes the same position as above, taking Bob's intention into consideration. That is, "here" refers to the house.

2.2. The C-view

The C-view argues that PIRs are to be determined by conventions. Corazza et al. (2002) focus on "I" and argue as follows:

(4) Our proposal is that, for any use of the personal indexical, the contextual parameter of the agent is *conventionally given*—given by the *social or conventional setting* in which the utterance takes place (11, Original italics).

Corazza et al. illustrate this point by an example. Let us suppose that we find a post-it note on someone's office door. We would intuitively understand that "I" refers to the user of that office. Corazza et al. attribute our understanding like this to a convention. They argue:

(5) When Ben sticks his own post-it note saying "I am not here today" to Joe's office door with the intent to inform the eventual readers that the usual occupier of the office is not in, Ben can be seen to be exploiting the conventional setting of using notices in this way. The convention is that "I" on a notice on someone's office door refers to the office's usual incumbent (13).

Corazza et al. continue and eventually argue against the I-view:

(6) … Moreover, even if Ben intended the note to refer to himself (say he left in a hurry and attached the note to the wrong door by mistake), the conventions would override the intentions thus ensuring that the note still referred to Joe (13).

As I mentioned above, Corazza et al. focus on "I." As for "now," they only mention the cases of an answering machine and a postcard, as below.

(7) In the case of an answering machine, "now" refers to the time at which it is heard. In the case of a postcard (as in the sentence "the weather is beautiful now"), the change in context or setting determines that the message refers differently. … we take the relevant time to be the time at which the words were written. So, in the postcard case, "now" refers to the encoding time (11).

In the case of "now" written on something other than a postcard, how would we identify its reference? Corazza et al. leave this problem open.

Concerning this point, let us consider our example (2), repeated here as (8).

(8) John has an appointment with his student Mike at three. But he came up with an urgent business. Therefore, he puts a note on his office door: "Dear Mike, I am busy now. Please come at four."

According to Corazza et al., the reference of "I" is regarded as John, by virtue of a convention as mentioned in (5). To be concrete, there is a metonymical relation between John and his office door. The reference of "now" is, however, controversial. Corazza et al. do not discuss examples like this, and thus we need to guess how they would think. One possibility is that "now" refers to three o'clock. Because Mike has an appointment with John at three, there may be a convention that Mike interprets "now" as referring to the appointment time. Mike would think that John expects Mike to see the note at three and therefore that "now" refers to three. I will come back to this point in the discussion section.

2.3. The CT-view

The CT-view argues that PIRs are to be determined in the context where they are tokened. In our example (2), "I" refers to John, and "now" refers to the time when the note was actually read. Thus, if Mike comes to John's office at 2:45 p.m., for example, then "now" refers to 2:45 p.m., rather than 3 p.m.

What about Sidelle's example (3)? Since the note was read in the car, the CT-view argues that the reference of "here" is the car. Remember that the I-view argues that the reference of "here" is the house. If the note in (3) contained "now" (i.e., "I am not here now"), then the CT-view holds that "now" refers to the time when the note was actually read in the car (such as 11 p.m.), whereas the I-view holds that "now" refers to the time when the note was supposed to be read in the kitchen (such as 3 p.m.). Thus, there is an essential difference between the CT-view and the I-view.

2.4. The SC-view

Lastly, I introduce the SC-view. Michaelson (2014) classifies communication into three types, which are the face-to-face, answering machine, and postcard types. In these types, PIRs are determined as follows (528):

(9) Face-to-face: "I" refers to the speaker, "here" refers to the location of production, "now" refers to the time of production.

Answering machine: "I" refers to the owner of the line, "here" refers to the location of playback, "now" refers to the time of playback.

Postcard: "I" refers to the author, "here" refers to the location of production, "now" refers to the time of production.

Written messages to our concern are most relevant to the postcard type. Thus, in the case of written messages, the SC-view argues that PIRs are to be determined relative to the encoding context. For example, in the sentence "the weather is beautiful here now" written in a postcard, "here" and "now" refer respectively to the encoding place and time. This is intuitive.

However, there seems to be a problem with the SC-view when we consider our example (2) (=(8)). First, "I" refers to John, who wrote the note. This is fine. But if the note was written at two o'clock, for example, then "now" refers to two o'clock, which is the encoding time. This is counter-intuitive. Therefore, we cannot reduce all kinds of written messages to the postcard type. PIRs in written messages other than those on a postcard are beyond the scope of the SC-view.

In this section, I briefly introduced the four major views proposed in the literature. Now, we will examine these views from experimental and pragmatic perspectives.

3. Method

This section explains the method of the experiment.

A survey of sixty-six college students was conducted. Using the background information provided, informants were asked to choose the reference of "now" appearing in the given note in the given context.

The informants were students taking some course in linguistics at International Christian University in autumn 2016. The majority of the informants were native speakers of Japanese, and there were only a few, if any, native speakers of English. Although the experiment concerns the reference of "now," I found no crucial problem with the native language of the informants, because "now" is a very basic word in English.

The background information provided was the following. Nancy usually comes home at six and her husband Fred usually comes home earlier. One day, Fred had to go out at four. He left a note for Nancy, expecting that she will be back at six.

Two contexts (i.e., context I and context II) were considered. Context I is that Nancy comes home at eight o'clock, rather than six o'clock. Context II is that Nancy comes home at five o'clock, rather than six o'clock.

Two notes (i.e., note A and note B) were considered.

(10) Note A: "Dear Nancy, I am not here now. Fred."

Note B: "Dear Nancy, I am not here now. I will be back three hours from now. Fred."

Note A means that Fred is not at home, rather than that Fred is not at the place where the note was read. (If note A is interpreted in the latter way, it sounds trivial and does not make sense. In that case, the reader would modify her interpretation in such a way that "here" refers to "at home" or "in the house" to make the message meaningful.) Note B has the second sentence, and we are concerned with the effect that this second sentence may have on the reference of "now" in the first sentence.

Questions asked were: What time would Nancy think "now" (underlined) in note A and note B refers to?

Four questions were asked, based on different combinations of the context and the note. Question 1 concerns context I and note A. Question 2 concerns context I and note B. Question 3 concerns context II and note A. Question 4 concerns context II and note B.

The assumptions were the following.

(11) The I-view and the C-view expect 6 o'clock in Questions 1 through 4.

The CT-view expects 8 o'clock in Questions 1 and 2, and 5 o'clock in Questions 3 and 4.

The SC-view expects "the encoding time" (which is shortly before 4 o'clock) in Questions 1 through 4.

As I discussed earlier, the SC-view limits itself to the three types mentioned in (9) and does not accommodate cases like those considered in our questions. However, I applied their "postcard type," which is relevant to written messages, to our questions.

Informants had no knowledge of the proposed views. Nor did they know the relation between their answer and the views. They only answered the reference of "now" in each question on an intuitive basis, without knowing which view their answer would support.

4. Results

4.1. Questions 1 and 2

Table 1 shows the results of Questions 1 and 2.

Table 1

The Results of Questions 1 and 2

Question \ Answer	4 o'clock (Cf. SC-view)	6 o'clock (Cf. I- and C-views)	8 o'clock (Cf. CT-view)	Other	Total
1	11 (16.7%)	29 (44.0%)	21 (31.8%)	5 (7.6%)	66 (100%)
2	28 (42.4%)	22 (33.3%)	5 (7.6%)	11 (16.7%)	66 (100%)

The options for the answer were 4 o'clock, 6 o'clock, 8 o'clock, and "Other." According to the assumptions (11), the answers 4 o'clock, 6 o'clock, 8 o'clock support respectively the SC-view, the I- and C-view, and the CT-view.

To be noted, Nancy does not know the encoding time, which was shortly before four, while informants knew it from the background information provided. Now the question asked is the reference of "now" that *Nancy* would think. Thus, to be precise, if the informant wants to choose the encoding time as the answer, then s/he should choose "Other" and write the specific answer "the encoding time." However, for simplicity, I gave the option of 4 o'clock for the answer as the encoding time. Thus, if the informant wanted to answer "the encoding time," s/he could choose either "Other" or "4 o'clock."

Questions 1 and 2 both concern context I. Thus, in these questions, Nancy comes home at 8 o'clock. In Question 1, Nancy reads note A. In Question 2, she reads note B.

The number in the first line in each box indicates the number of informants who chose the corresponding answer, and its percentage is provided in parentheses.

We observe different distributions of the answers in the two questions. In Questions 1, 44% answered "6 o'clock," supporting the I- and the C-views, whereas 31.8% answered "8 o'clock," supporting the CT-view. In Question 2, in contrast, 42.4% answered "4 o'clock," supporting the SC-view, whereas 33.3% answered "6 o'clock," supporting the I- and the C-views.

The difference between Questions 1 and 2 is the absence or presence of the second sentence in the note. Thus, we observe that the second sentence in note B had an effect on the identification of the reference of "now" in the first sentence.

Informants who chose the "Other" category were asked to give a specific answer. Major specific answers for the "Other" category were as follows.

In Question 1, two informants answered "when Nancy comes home." This is 8 o'clock. Thus, we could move these answers to the given option of "8 o'clock." One informant answered "earlier than six o'clock." Perhaps this informant intended to mean the encoding time. If so, this answer could be moved to the given option of "4 o'clock," for simplicity. Another informant answered "seven o'clock." I do not figure out the motivation for this answer.

In Question 2, four informants answered "nine o'clock." This is three hours from six o'clock. It seems that these informants mistakenly answered the time when Fred would come back home, rather than the reference of "now" in the note. Two informants answered "whatever time Fred left" and "when he wrote the note." This means the encoding time. Thus, we could move these answers to the given option of "4 o'clock." Another answer "any time earlier than six" would also mean the encoding time.

4.2. Questions 3 and 4

Table 2 shows the results of Questions 3 and 4.

Table 2

The Results of Questions 3 and 4

Question	Answer 4 o'clock (Cf. SC-view)	5 o'clock (Cf. CT-view)	6 o'clock (Cf. I- and C-views)	Other	Total
3	10 (15.2%)	33 (50.0%)	14 (21.2%)	9 (13.6%)	66 (100%)
4	23 (34.8%)	12 (18.2%)	16 (24.2%)	15 (22.7%)	66 (100%)

The options for the answer were 4 o'clock, 5 o'clock, 6 o'clock, and "Other." According to the assumptions (11), the answers 4 o'clock, 5 o'clock, 6 o'clock support respectively the SC-view, the CT-view, and the I- and C-view.

Questions 3 and 4 both concern context II. Thus, in these questions, Nancy comes home at 5 o'clock. In Question 1, Nancy reads note A. In Question 2, she reads note B.

Here too, we observe different distributions of the answers in the two questions. In Questions 3, 50% answered "5 o'clock," supporting the CT-view. And 21.2% answered "6 o'clock," supporting the I- and the C-views. In Question4, in contrast, 34.8% answered "4 o'clock," supporting the SC-view, and 24.2% answered "6 o'clock," supporting the I- and the C-views.

The difference between Questions 3 and 4 is the absence or presence of the second sentence in the note. Thus, in context II, just as in context I, we observe that the second sentence in note B had an effect on the identification of the reference of "now" in the first sentence.

Major specific answers for the "Other" category were as follows.

In Question 3, one informant answered "when Nancy comes home." This is 5 o'clock. Thus, we could move this answer to the given option of "5 o'clock." Two informants answered "before five" and "between four and five." Perhaps these informants intended to mean the encoding time. Thus, we could move these answers to the given option of "four o'clock," for simplicity.

In Question 4, two informants answered "eight o'clock" and other two informants answered "nine o'clock." These are three hours from five or six o'clock. It seems that these informants mistakenly answered the time when Fred would come back home, rather than the reference of "now" in the note. Two informants answered "whatever time Fred left" and "when he wrote the note." These informants presumably meant the encoding time, thus we could move these answers to the given option of "4 o'clock" for simplicity.

Putting Table 1 and Table 2 together, we observe the following.

(12)

(a) Although there is no single dominating view, the I-view and the C-view had a stable support in all questions.

(b) The CT-view was significantly supported in Question 3: Half of the informants chose the tokening time, rather than the expected time of Nancy's coming back.

(c) The SC-view was supported in Questions 2 and 4: It is indicated that the linguistic context for the message, that is, the second sentence in the note, had a considerable effect on the identification of the reference of "now" in the first sentence.

5. Discussion

The interpretation of the reference of "now" in the C-view is left unclear. As I mentioned in section 2, Corazza et al. only mention the answering machine case and the postcard case concerning "now," and therefore their analysis of "now" in our questions is left open. My tentative assumption was that there is a convention that we think of our routine (e.g., Nancy usually comes home at 6 o'clock) and the author's intention (e.g., The author Fred expects Nancy to read the note around 6 o'clock) when we interpret a note. Thus, in our questions, the answers in the C-view turned out to be the same as those in the I-view. Accordingly, in our assumptions (11), the I-view and the C-view were grouped together. However, we could have applied Corazza et al.'s postcard case to our questions because it is relevant to written messages. In that case, the C-view and the SC-view would have been grouped together. Thus, the status of the C-view is open at this point.

As for the note, we considered note A and note B. Note B had the second sentence and we observed that the second sentence had an effect on the reference of "now" in the first sentence. We could consider more variations for the second sentence in the note. For example, we could consider the following note:

(13) Note C: "Dear Nancy, I am not here now. Could you eat dinner by yourself? Fred."

It would be worth examining the reference of "now" in the first sentence of note C in context I and context II. I expect major results as follows. In context I, the major answers would be 6 o'clock and 8 o'clock. In context II, the major answer would be 6 o'clock. The triggers for these answers are the consideration of the dinner time as well as the expected time of Nancy's coming home. To see actual results, another experiment needs to be conducted.

6. Summary and Conclusion

This paper aimed to shed new light on a philosophical issue from an experimental perspective. Concerning the identification of PIRs, four major views are proposed in the literature. While these are theoretically competing, no empirical data or pragmatic analyses have been provided. How is the reference of "now" in written messages interpreted? Which view(s) proposed in the literature is/are supported empirically? This paper investigated these questions from experimental and pragmatic perspectives.

There was no single dominating view. Different views were supported in different contexts. The I-view and C-view were stably supported in all questions (i.e., in the two contexts and notes). The CT-view was significantly supported in Question 3 (i.e., in context II and note B). The SC-view was supported in Questions 2 and 4 (i.e., in note B): It is indicated that the linguistic context for the message had a considerable effect on the identification of the reference of "now."

Considering that indexicals are positioned where semantics and pragmatics meet, the study of the semantics of indexicals needs to have a pragmatic perspective as well.

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