Intersubjectivity and control in dyadic dialogic communication

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Abstract

This paper is conceptually motivated by the Vygotskian sociocultural theory. It argues that interlocutors in dyadic conversations do much more than transfer or exchange information; they create states of intersubjectivity and control. The discussion focuses on a discourse analysis of the varying use of personal pronouns in task-based conversations of dyads involving native and non-native speakers of English.

1. INTRODUCTION

Conversational interaction has been a significant area in second language research (SLR) since the 1980s. A main focus of this research has been on the interactional feature of what is called negotiation of meaning. Theoretically, negotiation of meaning entails the notion of communication as transfer or exchange of information between interlocutors. In other words, it is assumed that when two individuals enter into a dialog they send and receive messages. Negotiation of meaning is viewed as an attempt on the part of interlocutors to not only exchange information but to clarify each other's messages. In this context, task is seen as an important variable. Tasks which require obligatory exchange of information are supposed to provide more opportunities for negotiation of meaning than tasks in which information is merely transferred from one interlocutor to another. Such negotiation of meaning makes input comprehensible which facilitates language acquisition.

The discussion in this paper focuses on task-based conversational interactions involving native and non-native speakers of English. However, it is motivated by an alternative theoretical approach to conversational interaction which views such interaction as more complex than transfer or exchange of information. This paper is conceptually rooted in Vygotskian sociocultural theory, [1] which provides a different perspective on communication, task, and the use of language. In terms of specific data and discussion, it analyses the use of the linguistic feature of personal pronouns in dyadic discussions based on specific tasks.

2. CONCEPTUAL FRAMEWORK

In Vygotskian perspective, communication involves intersubjectivity, task is embedded in activity, and language has regulatory functions. The notion of intersubjectivity has been discussed by Rommetveit (1985). Rommetveit makes some important assumptions

about human discourse in general. As he puts it, "human discourse takes place and deals with a pluralistic, only fragmentarily known, and only partially shared world" (p. 183). Hence, as pointed out by Wertsch, a foremost Vygotskian scholar in the West in line with Rommetveit's view, it is incorrect to assume that when two interlocutors begin a dialog, they already have an "agreed-upon foundation for communication" in terms of "background knowledge" (Wertsch 1985: 160). In fact, the interlocutors may begin with "different perspectives" or only a "vague interpretation" of each other's utterances; they do not simply negotiate meaning in terms of information transfer/exchange, but engage in "semiotically mediated negotiation" by which they create a "temporarily shared world" (Wertsch 1985: 161). This shared world is what Rommetveit refers to as intersubjectivity. "Communication aims at transcendence of the private worlds of the participants" (Rommetveit 1979: 94). Hence, in any investigation of verbal communication, researchers should focus on such social-interactional features of communication as "states of intersubjectivity" (Rommetveit 1985: 183).

Furthermore, the relationship between the two interlocutors in dyadic communication is not to be seen in terms of the sender and the receiver of messages but in terms of "patterns of dyadic communication control" (Rommetveit 1985:184). These patterns of control may be symmetric or asymmetric. In the symmetric pattern, the interlocutors are able to present each other's private worlds freely based on their respective situation definitions. Situation definition is in itself a key concept. It means "the way in which a setting or context is represented—that is, defined—by those who are operating in that setting" (Wertsch 1984: 8). Simply put, two interlocutors communicating in the same context and apparently doing the same task may have different perspectives and goals. In fact, the task may be understood by the interlocutors differently from what the researcher has in mind. The very use of the word "definition" in Wertsch's (1979) "situation definition" means the participants engaged in communicating with each other do not passively receive instructions from the researcher but create their own instructions while defining the task for themselves.

Coming back to patterns of control in dyadic communication, in maximally symmetric dyadic communication, there is "unlimited inter-changeability" of each other's private world. It is a communicative situation in which both the participants feel equally powerful. However, conditions for such "pure intersubjectivity" rarely exist. In fact, in the real world (a pluralistic social world), "due to unequal distribution of knowledge, power," dyadic communication is mostly characterized by asymmetric patterns (Rommetveit 1985:

184). In short, individual interlocutors, depending on their respective situation definitions, experience variable power-relationships between each other.

The asymmetric patterns of control emerge in a variable manner in, what is called, the features of object-regulation, other-regulation, and self-regulation in the interlocutors' behavior in a particular task. The concept of regulation or control in relation to language needs to be briefly explained. In other words, as Frawley (1987:147) puts it: the function of language is "the regulation of self, others, and objects in the social world." In other words, as Frawley explains it, we use language to control objects in the external world (e.g., naming an object is the most elemental function of language. In social interactions, we use language to control others; conversely, others may control us. Speech acts are typical examples. The most critical function of the language is self-regulation, i.e, we use language to regulate our self. "All self-directed, monological utterances have this function." In this context, private speech, which is self-directed speech, may be seen even is an individual is talking to another individual may come up, depending on the nature of the activity they are engaged in. In this context, the important research concerns are whether the individual interlocutors are regulating or controlling or being regulated or controlled in a task-situation, whether an individual interlocutor is able to maintain self-regulation in the presence of the other interlocutor, whether an individual interlocutor becomes object-regulated by the non-human facts of the task. The element of task itself is embedded within an interlocutor's situation definition.

In short, in Vygotskian psycholinguistic theory, communication is not seen as a channel consisting of two discrete points, a speaker and a listener, which are connected by a communicative line, i.e., the transfer of messages through words wrapped as packages. The interlocutors as individual beings with their own situation definitions become the focus of investigation. Further, their communication with each other is viewed in terms of the dyadic states of intersubjectivity. And, finally, the relationship is analyzed in terms of the dynamics of control.

Given these theoretical foci, a particular notion of speaking as an activity emerges. While speaking, humans do not understand each other's messages, "but, instead, *believe*, that they understand each other" (Frawley and Lantolf 1984: 143). The act of speaking is not to provide information but to control a non-human object, another human, or oneself in the task situation (Frawley and Lantolf 1984: 143).

In this perspective, task is seen as embedded in activity. A basic Vygotskian notion is that an object is significant not it its external existence but the subject's "act" towards it (stated by Leontiev, as quoted in Asmolov, 1982: 79). In other words, an object gains significance only when it enters a particular context of human activity. Hence, is simple terms, a task assigned by a researcher is not significant in terms of its own features but in relation to the activity interlocutors engage in, and any activity at its operational level is goal driven, linked to interlocutor's motives in the end. The implication is that how the interlocutors view an assigned task is more important than what the researcher expects them to do in the task.

In fact, the concept of activity as a general explanatory principle underlies Vygotkian psycholinguistic theory. It also provides an analytical framework in which there are three distinct levels: activity, action, and operation, corresponding to motive, goal, and conditions of psychological behavior (Leontiev, 1982; Wertsch 1985; Lantolf & Thorne, 2006).

In Vygotskian perspective, linguistic expressions of an individual provide insights into these regulatory functions of language. In a task-based conversational interaction, they show the cognitive states of an individual when dealing with the task in relation to another individual.

This paper focuses on discussing the use of personal pronouns (a form of deixis in linguistically-based communication). As Rommetveit (1974: 36) points out, personal pronouns—**I, you, we**—constitute the interpersonal coordinates of dialogic communication. They reveal the personal dynamics between the interlocutors in task-based activity. In Vygotskyan terms, their use reveals an interlocutor's regulatory behavior in relation to the other interlocutor in a conversation. While tense/aspect marking may show an interlocutor's variable regulatory behavior in relation to task stimuli (discussed in Ahmed, 1994), general pronouns reveal the same phenomenon but with reference to the interpersonal relationship established or not established by the interlocutors during the activity of dialogic communication.

In simple terms, in dialogic speech, the use of **I** by a speaker is a means of establishing his own identity vis-à-vis that of the other interlocutor, while the use of personal **you** indicates the speaker's location and identification of the other interlocutor. In this context, the use of **we** indicates the simultaneous presence of both interlocutors in the mind of

speaker in relation to a specific task. It may show a sense of joint activity in task performance on the part of the speaker.

This paper next describes data and methodology. In the discussion section, it analyzes the varying occurrences of personal pronouns in the conversation data involving dyads doing Task I and Task II. The paper concludes with some remarks.

3. DATA AND METHODOLOGY

Data in this discussion are selected excerpts of conversations extracted from a larger study. Dyadic interactions involved both native and non-native speakers of English. Dyads talked to each other while doing specific tasks. In this discussion, two different tasks are referred to: "finding a safe route" task (Task 1) and "solving math problems" task (Task II). In task 1, interlocutors were given two similar, though not identical maps. They were instructed to discuss and exchange information to find a safe route by which one of the interlocutors could move from one specified position to another on the map. The route would be safe if they could avoid certain areas and follow certain recommended paths on their maps. They were instructed to discuss and exchange information on how to find the safe route. They were asked not to see each other's maps during the discussion. In Task II, dyads (different from the task 1 dyads) were asked to solve math problems jointly. They were classmates in a math course, and the math problems related to what they were doing in their math course. The discussion activity was seen as a preparation activity for their final examination in their math course.

The conversations had been videotaped and later transcribed. Some non-verbal gestures, such as eye gaze, hand movements, and facial expressions, were also noted. Any expressions which remained unintelligible were not included in the analysis.

The analysis of personal pronouns in this paper is first based on data drawn from the conversations on Task I ("Finding a safe route"). Later, the discussion turns to data from the math conversations. The analysis does not focus on the frequency of the occurrences of these pronouns. It focuses, instead, on the discursive environment in which they occur, and what their occurrence means in terms of the status of the interpersonal relationship established by the interlocutors.

4. DISCUSSION

In the following excerpt—based on Task I ("finding a safe route"), the NS participant (a female) and the NNS participant are discussing what a safe route would be given the constraints imposed by the written instructions and the maps they have received from the researcher:

[1]   A.   NS (X):   ...so we have to stay...where there are none of these things
       B.   NNS (Y): uh.um
       C.   X: OK?/.../so now...we have to/.../Oh, I see
       D.   Y: OK...so
       E.   X: do we start at X?
       F.   Y: yes...and first
       G.   X: OK...below my camp X

As can be seen, the NS' utterances (C, E, and G) form an interesting line of speech in which the shift from **We** to **I**, and vice versa, is significant. In (C), the NS' **OK?** indicates the speaker is mentally getting ready to take the next step in solving the task-specific problem, which in this case is finding a safe route from one point to another on a given map. The subsequent **so now** (in C) indicates that she begins her attempt to find the route. The use of we indicates that in her mind she assumes joint responsibility for the attempt by including the other interlocutors, at least minimally. However, the noticeable pause following the use of we indicates some cognitive interruption. The subsequent **Oh** indicates she realizes some problem and resolves it, when she says **I see** after a momentary hesitation. At this point, the use of I is functional in keeping with the cognitive interruption. It shows that as a result of some interruption the speaker abandons her sense of joint responsibility and expresses her own private self. Thus, **Oh...I see** is self-directed speech in that it reveals the speaker's attempt to regain control for herself over what she has been doing, i.e., coming up with some suggestion to the other interlocutor in finding the safe route. The return to **we** (E) shows that the speaker has already gained control and reassured joint-responsibility for the task. In short, the shifting use of **we** and **I** on the part of the NS in this brief exchange reveals the changing cognitive states of the speaker in dealing with the task in the presence of the other interlocutor. In this sense, the dynamic use of personal pronouns provides insights into the regulatory functions of language. It is an instance of private speech in which the speaker engages self-dialog. At that moment, the speaker does not intend to transfer any information to her conversational partner but instead attempts to understand the task stimuli for herself.

The discussion below continues further the analysis of this linguistic feature in the same conversation. Excerpts [2] through [5] provide additional data from the same conversation. They show a continuous stretch of the conversation from the beginning. An analysis of these excerpts reveals the significance of the use of personal pronouns in regulatory terms.

The following excerpt [2] presents the beginning of the conversation:

[2] A. NS(X): you understand?
  B. NNS(Y): ok...yes
  C. X: now...now..our maps are not the same/
      But they...they're almost the same
  D. Y: almost same.../
      And...there are some...uh...there isn't something...
      In...in...my map...which
  E. X: is in my map
  F. Y: which doesn't show
  G. X: OK...OK...now...you are...where are you?
  H. Y: camp X?
  I. X: OK.../I'm in camp Y
      We need to bring you
  J. Y: yes
  K. X: to camp Y
  L. Y: yes
  M. X: OK

As the opening shows, both speakers seemingly understand the task. Speaker X takes the initiative to solve the problem by being the first to sent the task goal (I). At the very beginning, her use of our with reference to map comparison indicates a tendency to assume joint responsibility. This tendency becomes more explicit in utterance (I), in which the use of **we**, in fact, violates the instructions. Had speaker X intended to follow strictly the instructions, she should have said something like **you need to come to camp Y**. The use of **we** coupled with the speaker-oriented directionality of the verb **bring** makes explicit the sense of assuming joint responsibility in the NS' perspective.

Furthermore, the use of **our** in (C) and **we** (I) presents a significant framework, a macrostructure, within which the shift to **you** and **I** in utterances (G) and (I) occurs. (G) and (I) illustrate information exchange in the typical ESLAR sense. However, the interlocutors exchange information about specific features of their maps, i.e., their respective locations. On the other hand, the use of **our** (C) is a generalized statement about their maps, focusing on the idea of similarities and differences. Similarly, the use of **we** in (I) stares, more importantly, the task-goal set by the NS. In short, in these instances, the use of **we** occurs as part of meta-

comments in relation to certain macro-level features of the task, while <u>you</u> and <u>I</u> are embedded in information exchange about certain micro-level features. In this context, information exchange is subordinated to the more important subsequent statement of the task goal.

Following the statement of the task goal, as the following excerpt in [3] shows, the interlocutors discuss *strategies* for finding a safe route. <u>We</u> is used in this context of strategies, again as a meta-comment about a macro-level features of the task. In this respect, the shift from <u>you</u> to <u>we</u> is significant in that it is actually you which is the anticipated pronoun, at least according to the instructions. However, the shift is explicable due to the NS's tendency to engage in joint activity.

[3]   A.   NNS(Y): so…is the point…uh…first point…on the river is safe point?
       B.   NS(X):   right
       C.   Y: bridge?
       D.   X: uh.hu…I guess the bridge…/
                     but…you can't…we can't go through…uh…the trees.
       E.   Y: uh.hu
       F.   X: what's that?...forest…or swamp…or hill…
                     or barbed wire…or the ford…/
                     so we've to stay…where there are no…none of these things
       G.   Y: uh.um
       H.   X: OK?/ so now…we have to/ Oh…I see
       I.   Y: OK…so
       J.   X: do we start at X?
       K.   Y: yes…and…first
       L.   X: ok…below my camp X

As pointed out, <u>you</u> and <u>I</u> occur during moments of information exchange. As already mentioned, however, <u>I</u> also occurs as an instance of private speech (as shown above in the analysis of excerpt 1]). Thus, in Vygotskian terms, there is no straightforward form-function fit of a linguistic feature. In this instance, <u>I</u> functions both as self- and other-directed speech. In the former, it is an instance of production to provide information to the other interlocutor. In the latter, it is an instance of private speech, and instance of, or attempt, at comprehension of the task by an individual.

The following excerpt [4] once again shows the use of you to seek information about certain specific features:

[4]   A.   NS(X):   ok…below my camp X
       B.   NNS(Y): uh.um
       C.   X: in…in box A
       D.   Y: box A?

E.	X:	OK...see...the...the box
F.	Y:	uh.hu
G.	X:	OK
H.	Y:	yes...OK...OK
I.	X:	OK...if you go straight down
J.	Y:	down
K.	X:	is there anything in there?/ wait...
L.	Y:	no...no
M.	X:	kind of river partly
N.	Y:	yes
O.	X:	OK
P.	Y:	just part of river
Q.	X:	because (???) you go down
R.	Y:	uh.um
S.	X:	and don't...don't...do...don't go by the river/ Just go straight down
T.	Y:	uh.um
U.	X:	OK...we're in B now
V.	Y:	B

However, at this point, <u>you</u> is also used by the NS to issue a set of directives to the NNS to make certain specific moves, e.g., (Q) and (S). Significantly, <u>we</u> occurs in (U) in a strategic position. It indicates that the moves have been completed. The pronoun <u>we</u> thus occurs as a meta-comment, evaluating the move. Thus, <u>you</u> and <u>we</u> are functionally differentiated in terms of tactical movements and the strategic sense of completion.

The following excerpt [5], on the other hand, besides continuing the pattern of the strategic use of <u>we</u> shows some other important features:

[5]	A.	NNS(Y):	on the line...and...the line between...D and E...until
	B.	NS(X):[cuts into]	well, I've a little bit (???)/
	C.	Y:	oh...really?
	D.	X:	yeah...well...we go down between C and D
	E.	Y:	uh.um
	F.	X:	and move over to the right a little bit
	G.	Y:	oh...I see
	H.	X:	and then straight down? does that work?
	I.	Y:	no/...I.../yes...in my map there is no...swamp
	J.	X:	ok
	K.	Y:	um
	L.	X:	so we down...now...between D and E
	M.	Y:	yeah
	N.	X:	ok...now we go down to...where

If <u>we</u> had not occurred in (D), then the utterances in (D), (F), and (H) would have sounded like a series of directives by speaker X to speaker Y. In that case, they would have

been similar to the directives in [4] and would have further illustrated the use of _we_ in the context of specific, tactical moves. However, the use of **does that work?** [5,H] shows that the NS is not actually providing instructions for any actual moves but exploring possibilities for such moves. After the partner confirms positively (I), the possibility is licensed and thus converted into an actual move, as shown in (L). Thus, the use of _we_ in (D) is consistent with its meta-level use. It is used to explore a possibility, i.e., it serves a planning function. In (L), it expresses a sense of completion, relative to the planning function. A sense of joint responsibility in this case serves strategic purposes in relation to task stimuli.

The analysis so far has shown that the use of _we_, indicating a sense of joint responsibility on the part of a speaker, occurs in relation to certain macro-level features of the task. On the other hand, the use of _you_ and _I_ refers to lower-level specific task features. In this context, while _we_ serves the higher function of task-goal statement and a sense of completion in specific movements, _you_ and _I_ are used for information exchange purposes to attain those goals.

So far the paper has discussed the use personal pronouns in the NS-NNS conversation. The other conversations—in the NS-NS and the NNS-NNS dyads—on the same task show very few occurrences of _we_, However, these occurrences provide further evidence of the meta-level use of this form. The following excerpts, [6]-[15], are the only instances of _we_ in the NS-NS and the NNS-NNS conversations respectively.

[6]　A.　NS(Y):We start now?
　　　B.　NS(X):Um...we're supposed to start now?

[7]　NS(X):We're both trying to get to camp Y?

[8]　NS(Y):Right...well...that's what we're supposed to figure out.

[9]　NS(X):we don't have the same maps. [_laughs_]

[10]　NS(X):How about...I was thinking about...
　　　　　　we go backwards from camp Y...

[11]　NS(X):here we go! (pause)
　　　　　　why we can't we just [_laughs_]

[12]　NNS(X): ok...what should we do to get where I am?

[13]　NNS(X): ok...so we take this.

[14]　A.　NNS(Y): ...can I go the...B...four
　　　　B.　NNS(X):　　un.um (negative tone)...because we have a swamp

[15]   NNS(X): [Tells the researcher] we couldn't meet each other [*both X and Y
             laugh*

In short, the use of **we** in the NS-NS conversation shows the following: a task-related meta-comment in [6]; the interlocutor's concerns regarding task goal in [7] and [8]; a comment on a macro-feature of the maps [9]; a radical change in the task goal [10]; and affective expressions showing the interlocutor's desire to complete the task quickly and easily [11]. Similarly, in the NNS-NNS conversation, the use of the pronoun shows a statement concerning a possible strategy for reaching the task goal [12], a sense of completion in a particular move [13]; negation of a possibility of that move [14], and a meta-comment concerning task performance [15]. Thus, all of these instances show strategic/meta-cognitive functions of **we**, the interlocutor's strategy in relation to task stimuli.

The discussion now turns to Task 2 ("solving math problems). The occurrence of **we** turns out to be more complex. The following excerpts, from [16] through [19], show the occurrence of **we** in the NNS-NNS conversation:

[16]   A.   NNS(X): ok...number 2/
                       do...do you have to use...each sheet?
        B.   NNS(Y): pardon?
        C.   X: do we have to use...uh...each problem...
                       each paper...sheet of paper
        D.   Y: I don't know
                       [X laughs]
                       This professor say...we have to use...?/
                       one problem in each paper...
                       or all present in one paper?
        E.   X: that's ok...we have space
        F.   Y: yes...we can write it
        G.   X: ok [*laughs*]...number two

[17]   A.   NNS(Y): can we look at the text book?
        B.   NNS(X): no...I don't think so...no [*laughs*]
                       Um...you have the text?
        C.   Y: I have text
        D.   X: me...too/.../I brought
                       [pause]
                       why don't we skip this one? [*laughs*]

[18]   A.   NNS(Y): do we have to keep that?
        B.   NNS(X): oh...yeah/ this is wasting paper [*laughs*]
                       let's do that that/
                       how many years [*reads the next problem*]

[19]   A.   NNS(Y): 24 minutes
        B.   NNS(X): only 24 minutes [*laughs*]

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              Where are we/...number
      Y:      six
      X:      number five
      Y:      no we are going to number six/
              Um...this one is easy
```

As these instances show, **we** does not occur in relation to math problem solving itself. The interlocutors use it for task-related meta-comments. In this sense it seems to serve the same function as it does in the NS-NNS conversation in Task I ("finding a safe route") discussed above.

However, when focus is turned to the NS-NNS and the NS-NS math conversations, a more complex function of **we** is discovered. There are cases in which **we** appears in utterances which are not meta-comments. The following excerpt shows how the NS-NNS conversation begins:

```
[20]   A.      NNS(X): Do you want to talk about it?
       B.      NS(X):  Yeah...I guess
       C.      X:      ok [pause] I guess...like...we have...like this/
                       Y equal...X...plus B...or whatever/
                       you have the beginning.
```

In this case, the exchange in (A) and (B) shows task-related meta-comments, using **I** and **you**. On the other hand, **we** occurs in relation to the actual problem solving itself. As the following examples show, in the speech of NNS(X), there is a tendency to use **we** in relation to specific features of math problem solving:

```
[21]   NNS(X): un...example...maybe we can plug...uh...ten or something.../
               you know what I mean.
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[22]   NNS(X):      I don't know why do we have to change both.
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[23]   NNS(X): why don't we...plug...one...one...just like a number in it.
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[24]   NNS(X): we can solve...solve like...draw like the graph.
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Similar cases of the use of we are found in the speech of both interlocutors in the NS-NS math conversation, as shown in the following instances:

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[25]   NS(X):All right...we need a negative one
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[26]   NS(Y):F...of...G...equals...to the sin  X
              We've sin X/
              So we've to put...G.../.../
              [pause] yeah...I don't understand [laughs]
              Look...you...see...I mean...I see it...I guess/
              Because we want...2...to the sin X/
              We already have sin X
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[27]   NS(X):I don't know what we are doing.

Significantly, in these instances, **I** is typically used for meta-comments in terms of task evaluation or propositional attitude. Thus, in speaker X's utterance in [20,C], **I** occurs in **I guess** that indicated her own attitude towards the evidence presented in the subsequent part of the utterance (**we have...**). In other words, **I** appears as embedded in that part of the utterance which is functionally private speech (**I guess**). Similarly, in [22], the meta-comment portion of the utterance appears with **I**. Similar instances of meta-comments with **I** can be found in the NS-NS conversation, as well, as shown in [26] and [27].

Thus, on the basis of the above data, it may be concluded that **we** shows varied functions. In some cases, it appears as part of meta-comments about the task, and, in some cases, it appears as part of problem activity itself. Similarly, **I** appears both in the context of information exchange about specific micro-features of a task, as well as, in private speech and meta-comments in terms of task evaluation.

The factors accounting for this variability are grounded in the nature of specific person/task interaction. Thus, it may be that in a dyadic conversation, the interlocutors may be familiar with one another, feel rapport between themselves, and perceive the task to be one of joint-activity and, hence, use **we** for the problem cooperatively. This seems to be the case in the NS-NS math conversation in which the interlocutors engage in much dialogic exchange.   In the following excerpt [28], a sense of joint activity on the part of one interlocutor is shown in a significant way:

[28]   A.   NS(Y):   it could be anything/
                          it could be...all the way this way/
                          it could be all the say this way/
                          it could be right in between
       B.   NS(X):   so how do you know
       C.   Y: all reals [*math term*]/.../
                          [*pause*]
                          I don't understand
                          [*looks at the camera*] help!
       D.   X: we got one right
       E.   Y: oh...yeah
       F.   X: greater than...or less than...or equal to two.../
                          I don't know
                          [*At this point Y writes the following on the paper*:
                          What are we trying to do?]

In (F), it is seen that Y write the statement (**What are we trying to do?**) on the paper after the interlocutors are unable to understand the problem itself. The statement may be

considered as a form of private speech expressed in writing. It functions as a meta-comment on the whole problem. The use of _we_ in this instance shows a sense of joint responsibility even in private speech, showing a strong inner sense of such responsibility.

Again, in a dyad an interlocutor may control the discussion and perceive herself as the problem solver for both conversational partners. Hence, the use of _we_ may show her sense of joint responsibility in relation to her self-defined status in the activity. Such seems to be the case in the NS-NNS math dyad, in which the NNS shows an overriding tendency to solve the problems and control the discussion. On the other hand, interlocutors may solve problems independently and may use _we_ to talk to each other about features not related to problem solving. Such seems to be the case in the NNS-NNS math conversation in which the speakers show a tendency to solve problems individually and turn to each other to check their answers. The following excerpts show they have been solving problems independently:

[29] A.   NNS(Y): oooh... a lot of calculations
                 [looks at X's calculations]
      B.   NNS(X): what solution do you have?

[30] A.   NNS(X): I misunderstood the problem/
                 How did you...how did you do that?
                 I...[pause].../ah..ha *[looks at hers]*
      B.   NNS(Y): it's complicated
      C.   X: yeah...it is/
                 I can remember the formula...equation/
                 I guess this one is easy/
                 you remember this one?

[31] A.   NNS(X): How did you do that?
      B.   NNS(Y): use a formula...it's much easier
      C.   X: you think so? *[laughs a little]*
                 I used Pythagoras theories
      D.   Y: yeah...it's also a way to do
      E.   X: yeah...it's also a way to do

The interlocutors in this particular dyad use _we_ to talk to each other about task features not directly related to math problem solving, already shown in excerpts [16]-[19]. The nature of a specific task itself could be an important factor in the occurrence of personal pronouns. Thus in Task I ("finding a safe route") the instructions and the task materials demand that the interlocutors talk to each other and exchange. On the other hand, math tasks do not put such pressures on the interlocutors, i.e., the interlocutors may or may not choose to talk and solve the problems together.

5. CONCLUSION

In short, the occurrence of the personal pronouns could be attributed to various factors in person/talk interaction. However, the above analysis shows that personal pronouns serve cognitive functions. These interpersonal coordinates of dyadic communication are significant are significant in revealing the cognitive states of an individual.

REFERENCES

Ahmed, M. (1994). Speaking a cognitive regulation: A Vygotskian perspective on dialogic communication. In Lantolf, J. & Appel, G. (eds.), *Vygotskian Approaches to Second Language Research*. Norwood, NJ: Ablex.

Asmalov, G. (1982). Basic principles of a psychological analysis in the theory of activity. *Soviet Psychology*, 25: 78-102.

Lantolf, J. & Poehner, M. (2008). *Sociocultural Theory and the Teaching of Second Languages*. London: Equinox.

Lantolf, J. & Thorne, S. (2006). *Sociocultural Theory and the Genesis of Second Language Development*. New York: Oxford University Press.

Rommetveit, R. (1974). *On Message Structure: A Framework for the Study of Language and Communication*. New York: Wiley.

Rommetveit, R. (1979). On the architecture of intersubjectivity. In Rommetveit, R. & Blakar, R. (eds.), *Studies of Language, Thought, and Communication*. New York: Academic Press.

Rommetveit, R. (1985). Language acquisition as increasing linguistic structuring of experience and symbolic behavior control. In Wertsch, J. (ed.), *Culture, Communication, and Cognition: Vygotskian Perspectives*. London: Cambridge University Press.

Wertsch, J. (1979). From social interaction to higher psychological processes: A clarification and application of Vygotsky's theory. *Human Development*, 22: 1-22.

Wertsch, J. (1984). The zone of proximal development: some conceptual issuds. In Rogoff, B. & Wertsch, J. (eds.), *Children's Learning in the "Zone of Proximal Development," 23, New Directions for Child Development*. San Francisco: Jossey Bass.

Wertsch, J. (1985). *Vygotsky and the Social Formation of Mind*. Cambridge, MA: Harvard University Press.

Frawley, W. & Lantolf, J. (1984). Speaking and self-order: A critique of orthodox L2 research. *Studies in Second Language Acquisition*, 6: 143-159.

Frawley, W. (1987). *Text and Epistemology*. Norwood, NJ: ABLEX.

Leontiev, N. (1981). The problem of activity in psychology. In Wertsch, J. (ed.), *The Concept of Activity in Soviet Psychology*. White Plains, NY: M. E. Sharpe.