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The Pragmatics of Imperative and Declarative Pointing¹

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Bates (1976) is the starting-point for an analysis of pointing that does not involve explicit higher-order intentions. It is claimed that declarative pointing is essentially intersubjective, while imperative pointing is based on behaviourally motivated regularities. Declarative pointing has an indicating function. Other behaviours associated with it pertain either to its preparatory and enabling conditions or to its perlocutionary effects.

Keywords: Pointing, declarative, imperative, basic communication, intersubjectivity, reference, shared reference, symbol use

1. Conflicting interpretations of pointing

Pointing is a central topic in studies of basic intentional communication. In developmental psychology and related areas of research such as language development and the evolution of language, it is common to make a distinction between imperative and declarative pointing. The distinction, which was first introduced in Bates, Camaioni, & Volterra (1975) and further developed in Bates (1976), is based on behavioural and cognitive criteria. An act of pointing is usually taken as a sign of certain cognitive capacities in the individual who is pointing, capacities such as being an intentional agent, having a theory of mind, or being able to conceive of an object independently of its context. Declarative pointing is held to require more sophisticated cognitive capacities than imperative pointing does.

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Povinelli & O'Neill (2000) bring up some of the difficulties connected to the distinction between imperative and declarative pointing. They observe that the application of the distinction is not uniform and that different researchers explain it in different ways, for instance, as depending on the kind of gesture that is made, or on whether gaze alternation accompanies the pointing or not. Povinelli & O'Neill mention several problems with determining the function and meaning of pointing gestures. First, the function of an act of pointing may depend on the context in which it is performed and thus not be inherent to the pointing gesture itself. Second, any kind of pointing gesture may occur without alternating gaze. Third, gaze monitoring may be a separately functioning system from the one that produces pointing, and thus not be a defining feature of declarative pointing, although it may co vary with it.

Yet, the notion of imperative pointing is fairly straightforward. Imperative pointing is performed in order to make the addressee do something for the subject. The subject uses the addressee as a tool in order to reach a goal. The notion of declarative pointing is more problematic. Different authors characterise declarative pointing in different ways, while referring to it as if they were talking about the same phenomenon.

For instance, Wellman & Lagattuta (2000) as well as Franco & Butterworth (1996) describe declarative pointing as a means for the subject to achieve joint reference with the addressee. Baron-Cohen (1993) suggests that it entails manipulating the addressee's attention for its own sake, not, as in imperative pointing, in order to request or obtain an object. Tomasello (1999) claims that it is an attention-seeking device that aims to share emotions and experiences with the addressee. Gómez, Sarrià, & Tamarit (1993) maintain that its function is to monitor those attentional and emotional reactions of the addressee that are overtly manifested in facial expressions and behaviour.

The different characterisations are linked to claims about which particular cognitive capacities are necessary for declarative pointing. A common suggestion is that having some kind of theory of mind is crucial for performing and understanding acts of declarative pointing. But it is not clear what this suggestion implies. For instance, the sharing of reference does not necessarily entail having a full-blown theory of mind. Whether a theory of mind is deemed necessary depends on, among other things, how one conceives of attention (as primarily a bodily or mental state) and joint attention (as involving meta-representation of states of attention or not).

Which cognitive capacities declarative pointing in fact presupposes is far from obvious. The question is if it is the same pointing behaviour at all that is given different characterisations in the various cases, or if the descriptions are of slightly different behaviours. The issue can only be settled experimentally, it seems, if there is a way of describing declarative pointing which is neutral between its more elaborated characterisations in terms of higher order cognitive capacities. Such a description should moreover not presuppose any of those cognitive capacities whose role for pointing is disputed.

The aim of this article is to give an account of pointing that from a cognitive point of view is seen as neutral in important respects. The present use of the terms "imperative pointing" and "declarative pointing" goes back to the definitions once put forward by Bates and her colleagues (1975). Contrary to Bates et al. it is claimed that there is a fundamental difference between imperative and declarative acts of pointing. Imperative pointing is based on behaviourally motivated regularities, while declarative pointing is intrinsically intersubjective. Only declarative pointing is, in Bates' sense, a fully fledged illocutionary act. It is furthermore co-operative: sender and addressee take part in the act as agents of equal value and with a common goal.

An analysis of declarative pointing is presented that agrees with Bates' overall view of declarative pointing as an illocutionary act. It shows that declarative pointing has an indicating function, and that an act of declarative pointing constitutes an indexical act of reference. It is claimed that any other functions that are associated or identified with declarative pointing either pertain to the preparatory and enabling conditions of acts of declarative pointing, or relate to the perlocutionary effects of such acts. These functions are consequently not inherent to the act of declarative pointing itself.

2. Bates' performative theory of pointing

Bates and her colleagues focused on the pragmatic structures that underlie language and their relation to cognitive development. Bates et al. (1975) and Bates (1976) conceive of pointing as a performative, or communicative act, in line with Austin's (1962) theory of speech acts (further developed in Searle, 1969). Performatives consist in the intention to communicate in order to have some effect on the listener (Bates, 1976, p. 36).

Austin made a distinction between locutionary, illocutionary, and perlocutionary speech acts. Bates and her colleagues describe these acts by stating what is required of the subject in order to perform the act. They describe language from the

perspective of the speaker and do not focus on the act as such.

Bates (1976, p. 14f.) defines the three types of acts in the following manner. A locution requires the uttering of sounds and construction of propositions. An illocution requires the intentional use of a conventional signal to carry out some socially recognised function. Finally, a perlocution requires that a signal issued by a subject have some effect on the addressee, be it intentional or unintentional. Of the three acts, the perlocution requires the least concerning the cognitive capacities of the sender. It occurs first and the locution occurs last in ontogenesis.

Bates (1976) maintains that pointing is a conventional signal and the act of pointing an illocution. She also holds that imperative and declarative pointing have a similar pragmatic structure, analysing them as "embedded causal structures" in which a signal is "used to cause some event in the listener" (p. 50). The meaning of the two kinds of pointing is described in terms of their different functions.

Bates (1976, p. 277) defines imperative pointing as the child's preverbal, intentional use of the adult as an agent or tool in achieving some end. Imperative pointing involves a conception of the other as a (self-propelling) causal agent that one can influence to do something for oneself by gesturing. Declarative pointing is defined as the preverbal effort to direct the adult's attention to some event or object in the world (p. 57, p. 277). Bates asserts that in declarative pointing the object is used as a means to obtain attention from the adult (1976, p. 51). This use stands in contrast to how the object is used in imperative pointing. In imperative pointing, the adult is treated as the means and the object as the goal to be attained by pointing. In declarative pointing, the roles are reversed. The object is the means, and interaction with the adult the goal (p. 58).

The intuition behind Bates' account of pointing is that imperatives and declaratives basically have the same function irrespective of being expressed in language or by gestures. The definitions of non-linguistic imperative and declarative communicative acts should capture about the same content as the definitions of their linguistic counterparts. Bates describes the acts in the following manner. A linguistic imperative is an exhortation directed at the listener. A linguistic declarative is an announcement of something that the speaker holds true. In declaring something, the speaker is committed to the truth of her utterance.

It is not obvious how the non-linguistic account of pointing mirrors the linguistic one. According to Bates, imperative pointing signals that the child wants the adult to do something, while declarative pointing signals that the child wants the adult to direct his or her attention to some object. The parallel between linguistic and non-linguistic imperative acts is rather straightforward, stressing that the aim of these acts is to make the addressee do something for the sender. It is less clear in what sense directing somebody's attention correspond to making an utterance that one holds true. Bates avoids the problem by making use of Parisi & Antinucci's (1976) definition of declaratives. She contends that their definition subsumes the one given above. Parisi and Antinucci hold that the declarative is a command for the listener to assume some piece of information. Bates then exchanges 'assume' for 'attend to', since to assume demands cognitive capacities that cannot be presupposed in non-linguistic communication.

The discussion of Bates' theory continues in the following section, where it is argued that there is a crucial difference between imperative and declarative pointing. Only declarative pointing is intersubjective. Imperative pointing does not require recognition of the intentions of other individuals and is based in behaviourally motivated regularities.

3. The difference between imperative and declarative pointing

The meaning of imperative and declarative acts of pointing is derived from their respective functions. In pointing imperatively, the child uses the adult as a means. In acts of declarative pointing the object is the means and the adult the end. One way of making the function of pointing explicit is to ask for its satisfaction conditions, that is, the conditions under which an act of pointing would be satisfied, or successful. Using this strategy, and in line with Bates' original definitions, it seems plausible to say the following.

An act of imperative pointing is satisfied when the sender has made the addressee successfully perform some action for her. An act of declarative pointing is satisfied when the addressee focuses her attention on an object as a result of the sender's pointing to the object. Consequently, the function of imperative pointing is to make the addressee perform some action for the sender, while the function of declarative pointing is to make the addressee attend to the indicated object.

Somewhat surprisingly, Bates asserts that while acts of imperative and declarative pointing have different meanings, they are similar kinds of communicative acts with a similar structure. Imperative and declarative acts of pointing are both illocutions: they are conventional and socially, or intersubjectively, recognised (Bates, Benigni, Bretherton, Camaioni &

Volterra, 1979, p. 36f.). That a signal is conventional means that there is a regularity in the way it is used, which makes it predictable. Except for being stable, conventions are also agreed upon, implicitly or explicitly. They have an intersubjective basis; the speaker intends the regular purpose of the act, and this intention is recognised by the hearer. Thus, the adult should respond to the child's pointing as a consequence of recognising the communicative intention of the act.

However, *pace* Bates, there is a major difference between imperative and declarative acts of pointing regarding how they convey their content. While acts of declarative pointing are essentially intersubjective, acts of imperative pointing are not necessarily so. Imperative pointing can emerge from mere regularities that arise from ritualised behaviour. Such regularities do not necessarily depend on any agreement, whether implicit or explicit, between child and adult. That imperative pointing rests on behaviourally motivated regularities means that acts of imperative pointing can be successful without involving recognition of the other subject's intentional states. Yet it is important to stress that imperative pointing does not reduce to sheer ritualised behaviour.

Virtually all gestures that arise from so-called ontogenetic ritualisation are contextual (Tomasello & Call, 1997, pp. 299-392). Ontogenetic ritualisation emerges from interaction between individuals and results in an idiosyncratic form of communication. According to Tomasello & Call, it occurs when two organisms shape one another's behaviour in repeated instances of a social interaction (p. 299). It starts from natural ways of behaving, such as a small child raising her arms to be carried when her mother reaches down for her, or the baby's moving for her mother's nipple. The next time the child makes these movements, her mother will anticipate what she wants, and subsequently the child will understand her own movements as ways of making her mother respond appropriately. In ritualised behaviour, adult and child are assigned fixed roles, which they do not change with each other.

Examples of acts of ritualised pointing are reaching, giving, and showing. These acts gain their meaning from being constituents of particular behaviour patterns. In ritualised behaviour, the objects are proximal and integrated into the behavioural routines. But as imperative pointing develops, the objects become increasingly distal. They are situated at an increasing distance from the child, and may change with the context of use.

Bruner (1978, p. 71) compares the child's original, instrumental reach, "reach-for-real", with imperative pointing, and names the latter "reach-to-signal". Imperative pointing is intended to signal the reach to the addressee, while instrumental reach is only intended to get hold of the object. In contrast to the case of declarative pointing, imperative pointing is still related to the intention of getting the object. The object is part of the pointing act and not external to it.

Using distal objects in pointing involves having another conception of the object than the one that is active in instrumental reach. Imperative pointing presupposes an understanding of objects as, first, existing independently of the sender in an external world, one that the sender shares with the addressee, and, second, being such that both sender and addressee can perceive the numerically same object.

Yet the fact that imperative pointing is to distal objects, or so-called external referents, does not suffice to make acts of imperative pointing genuinely communicative. An additional feature is necessary for that. It concerns the manner in which the sender directs herself to the addressee. In a communicative act, the sender conceives of the addressee as somebody with whom she can exchange information by mutual interaction, not – as in acts of imperative pointing – as a means to reach a given end.

Communication is an action that is done jointly (Reddy, 1999, p. 34). It emerges in a relational process and demands the co-operation of both sender and addressee. Reddy describes it as a "continual elaboration of actions and intentions in response to the other's action" (p. 39).

Recognising the general communicative intention as well as the intention to indicate is necessary for engaging in declarative pointing and being able to both produce and understand it. But this recognition does not have to be explicit in the sense of involving a conceptual representation of the intention or of being self-conscious (cf. Dienes & Perner, 1999). Intentions can be behaviourally manifest and registered by observation, allowing for the observer to directly attend to them. For instance, gaze direction, gestures, and body posture serve as cues to reference. Sensitivity to the intentional, referential behaviour of others can lead to a replication of the behaviour in the observing subject, as in imitation, without involving an explicit understanding of the intention to refer. A robust understanding of referential intent seems to emerge only by 24 months (Moore, Angelopoulos & Bennett, 1999).

The fact that solely declarative, and not imperative, pointing is intersubjective can easily be overlooked, since normally the adult performs the act that the child intends her to do, because she does recognise this intention. The present claim is that an act of imperative pointing *can be* successful in the absence of such recognition. It can rely on interactive behavioural patterns only. That does not exclude that imperative pointing may occur also in its presence. The necessary and

sufficient conditions of an act must not be confused with the additional, contingent ones with which the former conditions sometimes co-vary.

It is possible to question whether imperative pointing at all is referential. Tomasello (1996a) contrasts dyadic uses of gestures with triadic ones. Dyadic gestures constitute a way of requesting behaviour of others towards oneself, while triadic ones are used to draw the attention of others to something in the external environment (p. 280). One kind of dyadic gesture is so-called intention movements that serve to initiate interactive sequences. Dyadic gestures are characteristically not used reciprocally. That means that even if an agent can produce such a gesture, it does not imply that she would understand somebody else's use of it. According to Tomasello, agents who produce these gestures intentionally may not be able to understand them intentionally (p. 283).

Dyadic gestures as Tomasello describes them have affinities to imperative pointing, although they do not involve an external object. Learning by ritualisation does not automatically result in a reciprocal or bi-directional use of gestures. Learning by imitation, on the other hand, most certainly does, because it requires understanding the imitated subject's perspective (Tomasello, 1996a, p. 282; Tomasello, 1996b).

I have suggested that imperative pointing emerges from ritualisation, while declarative pointing is learnt by imitation. The former is at bottom behavioural, while the other is inherently intersubjective. Only declarative pointing is co-operative: sender and addressee take part in the act as agents of equal value and with a common goal. In the next section, the co-operative nature of declarative pointing is further examined. It is claimed that declarative pointing may serve to evaluate the indicated object in the light of emotional information gained through interaction with the other subject. In addition, an exchange of information about the attitudes that the subjects have to the shared object can lead to a joint evaluation and constitute a startingpoint for further cooperation centred on the object.

4. Intersubjectivity and evaluation

In response to an act of declarative pointing, the addressee will choose the action that appears to be most appropriate or relevant one in that situation. When the addressee recognises the communicative intention behind the sender's behaviour, she is thereby provided with a motivation for responding to the sender in a particular way (cf. Grice, 1957). She is in control of her response, and may either refrain from responding or respond in another way than expected by the sender. Notice that the addressee's response may result from her attending to the sender's behaviour, as described in section 3, without exploiting explicit higher-order intentions.

In contrast, an appropriate response to imperative pointing can be triggered simply by the pointing gesture, which then functions as a cue. There are no alternatives, but the appropriate response is determined by the act that triggers it. Intersubjectivity does not have any role to play in this.

It might be argued that intersubjectivity and a mutual recognition of intentions would enhance acts of imperative pointing. As a consequence, it might be reasonable to assume that pointing imperatively does involve recognising the intentions of the other subject. But this assumption is wrong. On the contrary, taking the other subject's intentions into account would make the act more of an effort to process and thus make it more costly (cf. Sperber & Wilson, 1995). Since the message of an act of imperative pointing usually is quite manifest, this cost would not increase the act's overall efficiency, or maximize its cognitive effects. The cost would not be worth processing.

Imperative pointing is a strategy for reaching a personal goal in relation to which the other individual is used merely as a tool. It mainly serves to satisfy the subject's own desire. To perform the act successfully a particular kind of understanding of other subjects and of the attention mechanism is required (Brinck, 2001). The sender should recognise, first, that the other subject is a causal agent whose behaviour and orientation signal the direction of her attention, second, that she can influence the attention of the other subject, and third, that attention as such is related to action readiness. The gaze that occurs during acts of imperative pointing reflects this understanding.

None of these conditions concern the particular intentional states of other individuals. Attention reading is based on observational and behavioural evidence gathered from, for instance, the head orientation, gaze, or body posture of the other. An awareness of intentional states is clearly not required for imperative pointing.

Seen from a causal point of view, acts of imperative and declarative pointing are, as Bates asserts, signals used to cause some event in the adult. But seen as intentional, other-directed acts, they do not have much in common. To the subject who points imperatively it does not matter much whether the addressee responds as a result of picking up external cues or recognising communicative intentions, as long as the response is the right one. However, an act of declarative pointing will

not be successful unless the addressee responds as a consequence of being sensitive to the sender's intention to indicate, and thereby share, the object. In pointing declaratively, the sender directs herself to the addressee as a being with similar communicative and intentional capacities to herself. The focus is on an exchange of information, driven by the perception of a target of interest (Reddy, 1999, p. 44).

In contrast to the differences discussed above, there is a superficial similarity between imperative and declarative pointing (Brinck, 2001). Both acts can be described as ways of regulating and co-ordinating action (Brinck & Gärdenfors, 2003). In imperative pointing the sender manipulates the other subject and does not, as in co-operation, direct herself to the other as an individual with similar capacities to herself. The behaviour of the other subject is regulated within the scope of the sender's action. In declarative pointing, sender and addressee mutually co-ordinate their actions in order to reach the common goal of sharing the object.

Gómez, Sarría & Tamarit (1993) give imperative pointing the function of co-ordinating action, while describing the goal of declarative pointing as a means to monitor the other subjects' reactions to shared referents. But monitoring the reactions of another individual also serves to co-ordinate behaviour and action, although in a more indirect fashion, by leading to an evaluation of the shared object (Brinck, 2001). While the co-ordination of action that occurs within the scope of acts of pointing is immediate, declarative pointing may also serve to co-ordinate more remote actions, such that will succeed the act of pointing.

Evaluation underlies taking proper action, both individually and jointly. When joint attention to an object has been attained, sender and addressee are able to observe their respective reactions to the object and can exchange information about it. This information will constitute the basis for a more exhaustive evaluation of the object. The sender's evaluation will then be based not only on her own reaction to the object, but also on the observations that she makes of the reactions of other subjects.

The exchange of information about the evaluative attitudes that concern a particular object may result in an implicit agreement between sender and addressee as to how the object should be evaluated. Consequently, declarative pointing has an important role to play for learning about evaluation. By allowing for joint evaluation, it also provides a starting-point for cooperation centred on the shared object.

The capacity to learn about objects by monitoring the reactions of others is known as social referencing. The child seeks emotional information from other individuals and uses it for evaluation. Social referencing comprises several kinds of behaviour: gaze following, reading emotional reactions, observing the response that follows a particular reaction, and a regulation of behaviour based on the information that has been obtained.

When social referencing is paired with declarative pointing, the child acquires a powerful device for learning about novel objects on her own terms. The child can choose by herself which object the interaction will concern instead of being dependent on the adult's choice of object, and she can learn about it vicariously, by watching other people deal with it.

In imperative pointing, the object of attention is taken in together with the actions and values that it directly affords to the individual. In the case of declarative pointing, the object is perceived together with the values that emerge in interaction with other subjects. The interaction builds on monitoring and occasionally adjusting to the evaluative attitudes that the other subjects are displaying towards the object through bodily behaviour, vocalisation, facial expression, et cetera. It is possible that this interaction involves an understanding of the mental states of other individuals. The issue is far from being determined. In any case, a theory of mind is not in principle necessary for interaction of this kind.

5. Reference without symbols

In this section, a potential problem for the interpretation of the function of declarative pointing in terms of indication will be discussed. The problem concerns Bates' claim that referential acts do not occur before the locutionary stage in ontogenesis. According to Bates, reference cannot emerge before language. Reference is by definition an element of locutions (cf. Austin, 1962). But if this is the case, it seems that since an act of declarative pointing is an illocution, its function cannot be to indicate. At least this is correct granted that indication is the same thing as linguistic reference. Nevertheless, it will be argued that declarative pointing is used to refer.

Bates uses Austin's theory of speech acts to distinguish between pre symbolic communicative acts and linguistic acts. She holds that performative structures, such as pointing, have a developmental history that is prior to speech itself. Performatives are first constructed on the plane of action using objects instead of propositions. Piaget's sensorimotor stage 5 (10 to 12 months) is required for having the capacity to perform illocutionary acts. Uses of locutions emerge gradually within the performative schemes. Performatives begin to carry both locutionary and illocutionary force when the child is

between 12 and 16 months (Bates, 1976, p. 79). Then the symbolic capacity starts to develop, and the child can refer to objects with words. Locutions do not occur until the child has entered the symbolic stage and begun learning a language.

Bates (1976, pp. 72-79; Bates et al., 1979, pp. 42ff.) makes a strong connection between reference and symbols. She declares that reference demands that the act of naming can be used to depict an object in a variety of contexts, and, moreover, that it can be used to talk about objects that are not present in the context of utterance. She relates reference to symbolic play, which is characterised by the use of one object to stand for another object. Furthermore, she groups the use of general terms together with naming, and asserts that reference demands that the subject can generalise naming. An example would be generalising from naming one dog 'dog' to naming other dogs 'dog'.

Bates' position can be compared to Clark's (1978). Clark is somewhat clearer in her formulations. Clark focuses on the cognitive requirements on reference. She claims that these are that the sender know three things about objects: that objects have an independent existence, that they can be individuated, that is, have a numerical identity, and that they belong to classes, that is, have a qualitative identity (p. 91). The first two requirements match the ones for imperative pointing to distal objects put forward in section 4. The third requirement is crucial for the ability to re-identify objects, for categorisation, and for understanding how one object is related to other objects of the same kind. It seems that Bates' and Clark's views on the cognitive requirements on reference essentially overlap. However, Bates' view is more complex.

Bates' basic criterion of reference appears to be that the behaviour (a sound, an act of pointing, et cetera) is used to stand for an object and does not only have a functional value of, for instance, expressing a need or desire. Formulated in this way, the criterion has both a weak and a strong reading. According to the weak reading, the criterion underlines the fact that referential acts are not about the sender. It separates the kind of communicative act that conveys information about the sender from the kind that conveys information about something else than the sender. Animal communication has often been described as relying on dyadic acts that convey information about the sender only. The distinction between these two kinds of communicative act is basic to many theories of communication (Brinck, 1999). Yet, although declarative pointing is in this weak sense referential, it does not amount to symbol use, that is, reference by proxy. The reason why it does not do so will be explained below.

The strong reading of Bates' criterion of reference emphasises that in a referential act, the referring sign is a symbol, that is, a sign used to "stand for an object" which is substitutable for the object (Bates et al., 1979, p. 43). But it cannot be necessary for reference that it takes place by way of a proxy, or symbol. Referring by way of a symbol is only one of several ways in which reference can be made.

Searle (1969, pp. 26f.) describes a referring expression as one that serves to identify by pointing to particular things. It answers questions like Who? What? and Which? He adds that it is by their function that referring expressions are to be known. By ostension, description, or otherwise, a referential act identifies a particular object or event uniquely in the context of utterance. Reference can be made by using a name as a substitute for an object that is not present in the context of utterance. But pointing to an object can also constitute an act of reference, in identifying the object by ostension. The pointing gesture guides the attention of the addressee to the object.

The indicating function as it occurs in declarative pointing is not a case of symbol use. Declarative pointing is directed at objects and events in the external world, but without involving the use of symbols, or substitutes. It constitutes an indexical referential act. That means that it refers by standing in a direct causal relation to its object by being contiguous to it in time and space. Since an act of declarative pointing does not have subject-predicate form, it cannot constitute a propositional act, or locution.

Declarative pointing is comparable to the exophoric use of demonstratives. The existence of an exophoric use of demonstratives implies that reference by pointing is basic (Diessel, 1999). The exophoric use serves a language-external function. This function stands in contrast to the common, grammatical one of organising the lexical material in discourse that is performed by, for instance, anaphoric demonstratives. The exophoric use contributes to language acquisition by preparing for language entry. Its role is to highlight and perceptually identify entities in the external world. Reference is fixed by gestures like pointing and by non-linguistic, contextual factors, such as the saliency of the referent, or the interaction between sender and addressee that leads to joint attention.

Bates et al. mention that the act of naming is used to depict an object in a variety of contexts (1979, p. 43). This means, as I understand it, that naming demands generality in several ways. First, it depends on noticing that the same object can occur in different contexts and be recognised and named independently of any particular context. The name of the object itself must be context-independent as well in order that it can follow its referent from one context to another. Moreover, any competent speaker can in principle use the name of a particular object. The object as well as the name is subject

independent. In addition, naming can occur in the spatiotemporal absence of the object that is being named. Then the name is referent-independent, or detached from its referent (Gärdenfors, 1996; Sjölander, 1995).

Declarative pointing demands generality, if not across the board, at least in some ways. The use of declarative pointing is independent of particular contexts and users. However, declarative pointing can never acquire referent-independence, because it requires the spatiotemporal presence of its object.

To conclude, symbol use is not necessary for reference, although the capacity to use symbols is required to master language. That indicating is a kind of reference does not *prima facie* constitute a problem for giving declarative pointing an indicating function. Declarative pointing is fundamental to language acquisition exactly because it introduces reference into communication.

6. The analysis of declarative pointing

Below it will be argued that the act of declarative pointing so far has not been properly analysed. Two important distinctions are overlooked in Bates' analysis. For one thing, the general function of an act of declarative pointing has not been distinguished from the circumstances that precede the act. Secondly, the relation between that general function and the goals of particular acts of declarative pointing has been misconceived.

The function of acts of declarative pointing should be distinguished from, first, the preparatory and enabling conditions of the acts, and second, the goals and effects of the acts. The function is stable across contexts of use, while the other factors may vary. The diverging interpretations of declarative pointing that do not concern its function to indicate, nor pertain to its enabling and preparatory conditions, instead relate to its perlocutionary effects. Thus, by indicating an object, the sender may provoke an action of, or start interacting with, the addressee.

The preparatory and enabling conditions of communicative acts describe what has to be the case in order for a subject to perform the act successfully. Once performed, an illocutionary act may have different perlocutionary effects on (or consequences for) the actions and thoughts of the addressee depending on the context in which the act occurs. For instance, by informing, a speaker may convince, enlighten, edify, inspire, or get the hearer to realise (Searle, 1969, p. 25).

In the case of declarative pointing, the preparatory and enabling conditions describe the circumstances that make it possible for the sender to direct the addressee's attention to a particular object. The circumstances vary with the context of use, except for one general condition. It is the requirement that both the object and the addressee are present in the context of use.

In some contexts, the object may be salient enough to determine the reference. Then the sender does not have to influence the addressee in any other way to make her focus on the object. In other contexts, the sender's contribution may be crucial for guiding the attention of the addressee. Drawing the attention of the addressee and then directing her attention by gaze and gesture will assist the addressee in focusing on the object.

While declarative pointing has a general indicating function, the motivation or purpose behind a particular act of declarative pointing is often to reach some additional, specific goal. The function of pointing should be distinguished from the sender's motivation for pointing. An act of declarative pointing can be performed in order to seek and obtain attention, observe the addressee's reaction to the object, interact emotionally or share experiences with the addressee, or for yet other reasons. These goals constitute the perlocutionary effects of the act. Attaining them is not necessary for the successful performance of the act. The sender may successfully direct the attention of the addressee to the object, whereas the addressee fails to react in the way anticipated by the sender.

The sender's expectations of what she will accomplish by pointing, in addition to shared reference, concern not the act of pointing itself, but what it eventually may lead to. Her anticipation of the addressee's response also relates to the effect of the act. I cannot see any reason to include either the sender's expectations or the anticipated response in the functional description of the act. On the contrary, expectation and anticipation may vary across contexts, while the kind of act to which they relate remains the same across contexts (Reddy, 1999).

The disagreement concerning the nature of declarative pointing can consequently be traced back to the failure to distinguish the illocutionary aspects of pointing (in doing something) from the perlocutionary ones (by doing something). The term 'declarative pointing' has simultaneously been used to cover both aspects. Conceiving of declarative pointing as a communicative act with distinct illocutionary and perlocutionary properties makes it possible to distinguish between its general function and the several effects it can have. Franco & Butterworth (1996) take a step in this direction. They distinguish between the explicit and the implicit 'meaning' of pointing, claiming that the explicit 'meaning' is to share

attention to an object (p. 309, p. 312). Unfortunately, they do not further analyse the difference.

Thus, the various characterisations of declarative pointing that can be found in the literature do not really conflict. They concern different matters, that is, either the act itself, the circumstances that precede it, or the additional effects that can be attained by performing it.

7. Declarative pointing as an illocutionary act

It is time to return to Bates' definition of an illocutionary act: an illocution requires the intentional use of a conventional signal to carry out some socially recognised function. In section 3 it was claimed that while declarative pointing is a fully-fledged illocutionary act, imperative pointing is not so. Only declarative pointing is intrinsically intersubjective. How does the account of declarative pointing put forward here conform to Bates' definition of illocutionary acts?

That a signal is conventional means, according to Bates et al. (1979), that it forms a regularity and is intersubjective. No doubt, acts of declarative pointing are conventional, at least in the weak sense of existing within a framework of shared attentional and interpretative behaviours. This framework serves as the basis for both prediction and intersubjectivity. Acts of declarative pointing must comply with and be used within this framework in order to perform their indicating function, since they are not natural signs. The ability to recognise a pointing gesture in its indicating function, as being directed at a distal object, is not innate (although it is species-typical, cf. Leavens & Hopkins, 1999; Tomasello & Camaioni, 1997). Even the general understanding of actions as intentional – as opposed to the understanding of particular actions as goal-directed – is not innate, but apparently develops stepwise (Woodward, Sommerville & Guajardo, 2001). Moreover, the con-text-independence and subject-independence characteristic of declarative pointing cannot be learned merely by ritualisation, but requires imitative learning.

Ritualised gestures are dependent on a particular context, because they constitute parts of an activity from which they cannot be detached. They are subject-dependent as well in that users understand a ritualised gesture from their own perspective only, depending on which role the user performed during the ritualisation of the gesture (Tomasello, 1999, p. 281). As argued above, it seems likely that imperative pointing arises from ritualisation. In contrast, declarative pointing occurs only when the user can take either perspective, that is, can both produce a pointing gesture and comprehend somebody else's use of it. It is bi-directional and learnt by imitation (Tomasello, 1998). To be able to change perspectives and perform as well as understand acts of declarative pointing demand a way of thinking of objects as not merely serving to satisfy one's own desire or being linked to a fixed framework. Bates et al. (1979) refer to the process that issues in this way of thinking as a decontextualisation of the object (p. 40).

The socially recognised function of declarative pointing should be clear by now: it is to indicate an object or event in common space. Declarative pointing is indexical, since it exploits the contiguity in space and time to its object in order to direct the audience's attention to that object. It is rare that the indexical relation alone can determine the object in the context of communication. An act of declarative pointing is often underdetermined by its context. How then can its indicating function be carried out?

In acts of imperative pointing, the action that the child initiates and the proximity of the object to the child may help the adult determine the object. The object is identified by the role that it plays for satisfying the child's need. On the contrary, in acts of declarative pointing the object is identified independently of this role. One way of attaining shared reference to the object is for child and adult to engage in a process leading to joint attention. Joint attention to an object occurs when the subjects focus their perception simultaneously on the object, as a consequence of attending to each others' attentional states, making attention contact, and alternating gaze between each other and the object (Brinck 2001; Bruner, 1998; Tomasello, 1999).

Whether the kind of joint attention that is necessary for sharing reference requires a theory of mind or any other cognitive capacity that is currently under dispute should be settled empirically. Elsewhere I have argued that joint attention in principle does not involve meta-representation, nor presuppose a theory of mind (Brinck, 2001). Since states of attention are manifested behaviourally, it is not necessary to represent the mental states of another subject in order to engage in attention contact with her or to direct her attention. Guiding somebody by gaze and other forms of goal-intended, attentional behaviour are ways of making one's focus of attention accessible to others. In joint attention, it is first and foremost the external target that is shared and made available for others, not the mental states of the attending subjects.

8. Conclusion.

The present account of declarative pointing does not appeal to complex higher-order cognitive capacities, such as explicit higher-order intentions or a theory of mind. Whether the cognitive capacities that are at present under dispute really are necessary for performing acts of declarative pointing is still an open question. Some of the behaviours that have been associated with acts of declarative pointing are better described as belonging to either the contingent preparatory and enabling conditions or the similarly contingent perlocutionary effects that such acts may have.

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