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The normative aspect of signalling and the distinction between performative and constative

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Abstract

The paper outlines an approach to the formal representation of signalling conventions, emphasising the prominent role played therein by a particular type of normative modality. It is then argued that, in terms of inferencing related to this modality, a solution can be given to the task J.L. Austin set but failed to resolve: finding a criterion for distinguishing between what Austin called *constatives* and *performatives*. The remainder of the paper indicates the importance of the normative modality in understanding a closely related issue: reasoning about trust in communication scenarios; this, in turn, facilitates a clear formal articulation of the role of a *Trusted Third Party* in trade communication.
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1. Introduction

The approach to the analysis of communicative acts taken in this paper differs from those currently most in vogue, in that its focus is neither on the intentions of communicators (FIPA: http://www.fipa.org/, and in particular http://www.fipa.org/repository/bysubject.html and http://www.fipa.org/repository/aclspecs.html[1]) nor on their supposed commitments [1,2]. By contrast, the focus here is on the conventions that—as we shall say—*constitute* any given communication system s. These conventions make possible the performance of meaningful communicative acts by the agents, human or electronic, who have adopted s as a means of communicating with each other. We begin by summarising some of the main features of the approach.

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2. Signalling conventions

A convention-based system that defines a framework for agent interaction may appropriately be called an *institution*.[2] In common with other institutions, communication systems exist to serve a purpose; specifically, their purpose, or point, obviously, is to facilitate the transmission of information of various kinds.

In order to develop these intuitions, and to begin to move towards a formal model, we look first at the communicative act of *asserting* (or *stating*, or *saying*) *that such-and-such is the case*. The key question is this: in the constitution of communication system/institution s, what is it that makes it possible for an agent, if he so wishes, to make an assertion? Our answer is that s contains conventions according to which the performance of particular acts *count as* assertions, and which also specify what those acts mean. Consider, by way of illustration, the institution that was once operative for sea-going vessels, in virtue of which they were able to send signals indicating aspects of the state of a vessel by hoisting sequences of flags. Raising flag sequence $q1$ would count (by convention) as a means of saying that the vessel was carrying explosives, raising flag-sequence $q2$ would conventionally count as indicating that the vessel carried injured crew members... and so on. Note the general form of the conventions themselves: they each associate a particular type of act with a particular state of affairs, and because they are conventions for *asserting* (i.e., for *that* type of communicative act) they each count as a means of *saying that* the associated state of affairs holds.

For present purposes, it matters not at all which sorts of acts are used in a given communication system; the account of communication conventions we offer is entirely neutral on that issue.[3]

Suppose now that in communication system/institution s, the act of bringing it about that A counts as a means of asserting that the state of affairs described by B obtains (abbreviating: by convention in s, doing A counts as an assertion that B). And suppose further that agent j, who is an s-user, does A in circumstances in which B does not hold.[4] Then it is appropriate to say that, from the point of view of the institution s, something has gone wrong, *in as much as the purpose or function within institution s of acts of asserting is to facilitate the transmission of reliable information*. The point of asserting, as an institutionalised act, is to be able to show how things stand in a given state of affairs. Given that this *is* the point of asserting, the doing of A in circumstances where B does not hold is a form of *abuse* of the system. Relative to the purpose of asserting, as an institutionalised act, A *ought* to be done *only* when B is the case, and so the doing of A in non-B circumstances amounts to a deviation from the ideal that the system is supposed to achieve.[5]

The conventions for asserting make it possible for acts of assertion to be performed, and they do so by indicating what *would* be the case in circumstances in which the purpose of asserting, qua institutionalised act, is fulfilled. If, by convention in s, doing A counts as an assertion that B, then in ideal circumstances (with respect to s) B holds whenever A is done. These observations are the key to understanding the intuitions on which is grounded the general logical form we assign to communication conventions of the assertoric type.[6]

Following the theory developed in [3] and [4], the form of the signalling convention (sc) according to which, in s, agent j's seeing to it that A counts as an assertion that B, is given by

(sc-assert) $E_j A \Rightarrow_s I_s^* B$

where expressions of the form $E_j A$ are read 'j sees to it that A', $\Rightarrow_s$ is the 'counts as' connective of [9], and I_s^* is a normative operator, intended to capture the sense of 'ought', or ideality, alluded to above. Details of the logics

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[2] This section offers merely a summary of the approach to signalling conventions described in [3] and [4], and the reader is referred to those sources—particularly to [4]—for a more detailed account, including details of the component modalities. The focus of the present paper is on the *normative* aspect of signalling conventions, and its relation to *trust* and to Austin's distinction between *performative* and *constative*.

[3] By 'communication system' we here mean the set of conventions that constitute the system, together with the set of agents who make use of those conventions.

[4] It is irrelevant to the present point whether or not j believes that B does not hold.

[5] One of the reviewers helpfully pointed out that this way of characterising the purpose of asserting strongly suggests an analysis of 'ought' along Andersonian lines, relating failure to violation. In fact, in the first-order simplification of our account outlined in [5]—see below Section 5—a reduction of a similar kind is indeed proposed.

[6] [6] is the source from which we take the idea that, in order to understand the communicative act of asserting, one must understand in what sense of 'ought' that which is asserted *ought to be true*. Stenius's much neglected paper is in our opinion one of the most insightful essays written on the analysis of different types of communicative acts. The idea that the 'counts as' notion figures crucially in the convention constituting asserting appears for the first time, to our knowledge, in [7]. For further discussion of the philosophical roots of our approach, see [8].