Common ground beyond the grave

As recently described by Geurts (2023), the study of the notion of 'common ground' in pragmatics takes face-to-face conversations as a model for communication. In face-to-face settings, interlocutors typically have (more or less) *simultaneous* attitudes concerning conversational updates: the moment that the speaker states that p, the addressee will immediately also come to believe/accept that p (or at least that p was stated). Likewise, formal characterizations of common ground on offer, (e.g., in terms of common belief/acceptance/knowledge/commitment, see e.g., Stalnaker (2014); Clark and Marshall (1981); Geurts (2019)) typically assume *simultaneous* attitudes. At best, these definitions do not say anything about *when* interlocutors have the relevant attitudes.

However, the concept of common ground has, without much hesitation, (except by Harris (2020); Semeijn (2024)) been extended to asynchronous non-face-to-face conversations in which speaker and addressee do *not* have simultaneous attitudes. For instance, several authors in philosophy/semantics of fiction (e.g., Zucchi (2021); Eckardt (2014); Maier and Semeijn (2021)) use the notion of common ground between an author (e.g., Austen) and her audience (e.g., myself) to analyze fictional discourse and/or truth in fiction.

The intuitive justification for this move is simple: Non-face-to-face conversations work in essentially the same way as face-to-face conversations. Consider a simple case of asynchronous communication: A man on his deathbed writes a letter to his daughter that states "The medallion is in Nouvion" (p) and dies. The daughter reads her father's 'letter from beyond the grave' and comes to believe that p. Similar to cases of face-to-face communication, the notion of 'common ground' has a dual function (see Geurts (2023)) to play in our explanation of this communicative act: First, in writing his letter, father proposed to update the common ground between him and his daughter with p. Second, father was able to felicitously phrase his contribution in this way (i.e., using the definite description "the medallion") because it was already common ground between him and his daughter that there was some specific medallion.

As natural as that may sound, if we assume straightforward time-indexing (i.e., the kind of time-indexing that makes perfect sense for face-to-face settings) for standard 'mentalistic' characterizations of common ground (e.g., in terms of common belief), then p is *never* actually common ground between father and daughter. Below $\mathbf{B}_x^{t_t}\phi$ means x believes that ϕ at t:

p is common ground at t_1 between speaker a and hearer b iff

$$\begin{array}{cc} \mathbf{B}_a^{t_1}p & \mathbf{B}_b^{t_1}p \\ \mathbf{B}_b^{t_1}\mathbf{B}_a^{t_1}p & \mathbf{B}_a^{t_1}\mathbf{B}_b^{t_1}p \\ \mathbf{B}_a^{t_1}\mathbf{B}_b^{t_1}\mathbf{B}_a^{t_1}p & \mathbf{B}_b^{t_1}\mathbf{B}_a^{t_1}\mathbf{B}_b^{t_1}p \\ \vdots & \vdots \end{array}$$

By the time that the daughter comes to believe that p, the father has already passed away.

Multi-agent system logics may aid philosophers of language here: Loosely following Halpern and Moses's (1990) concept of 'eventual common knowledge', we might propose the following definition of 'eventual common ground':

p is common ground between speaker a and hearer b iff:

$$\begin{array}{cc}
\exists t\mathbf{B}_a^t p & \exists t\mathbf{B}_b^t p \\
\exists t\mathbf{B}_b^t\exists t'\mathbf{B}_a^{t'} p & \exists t\mathbf{B}_a^t\exists t'\mathbf{B}_b^{t'} p \\
\exists t\mathbf{B}_a^t\exists t'\mathbf{B}_b^{t'}\exists t''\mathbf{B}_a^{t''} p & \exists t\mathbf{B}_b^t\exists t'\mathbf{B}_a^{t'}\exists t''\mathbf{B}_b^{t''} p \\
\vdots & \vdots
\end{array}$$

Now p *is* common ground between father and daughter: They both believe that p at some point in time, both believe at some point in time that the other believes that p at some (possibly other) point in time, etc.). However, this notion also will not do. On this definition it is *always* common ground between father and daughter that p. However, we require a notion of common ground that is *dynamic*: Common ground is something that can grow as communication progresses. Intuitively, p *became* common ground at some point thanks to father's letter.

I propose that we require a shift from defining 'common ground between agents' at a certain time to defining common ground between 'agents at a certain time':

p is common ground between speaker a at t_1 and hearer b at t_2 iff:

$$\begin{array}{cc}
\mathbf{B}_a^{t_1} p & \mathbf{B}_b^{t_2} p \\
\mathbf{B}_b^{t_2}\exists t(t \leq t_2 \wedge \mathbf{B}_a^t p) & \mathbf{B}_a^{t_1}\exists t(t \geq t_1 \wedge \mathbf{B}_b^t p) \\
\mathbf{B}_a^{t_1}\exists t(t \geq t_1 \wedge \mathbf{B}_b^t\exists t'(t' \leq t \wedge \mathbf{B}_a^{t'} p)) & \mathbf{B}_b^{t_2}\exists t(t \leq t_2 \wedge \mathbf{B}_a^t\exists t'(t' \geq t \wedge \mathbf{B}_b^{t'} p)) \\
\vdots & \vdots
\end{array}$$

The basic idea is that in case father had the relevant beliefs in *his time* (e.g., at t_1 father believes that p and that his daughter would come to believe that p, etc.) and the daughter had the relevant beliefs in *her time* (e.g., at t_2 daughter believes that p and that her father used to believe that p), then it is common ground that p between father *in his time* and daughter *in her time*. I explore predictions of and potential issues with this definition (e.g., this definition allows us to specify what is common ground between speaker at t_2 and hearer at some *earlier* time t_1, a situation arguably only possible in fiction).

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