



**COMMON GROUND,  
COORDINATION, AND  
COOPERATION**

**Bart Geurts**


**Barcelona Lectures — Days 2 & 3**

1. If  $C_{x,y}p$ , then  $\neg C_{x,y}\neg p$       “If you are committed to  $p$ , you are not committed to not- $p$ ”
  2. If  $C_{x,y}p$ , then  $C_{x,y}C_{x,y}p$       “If you are committed to  $p$ , you are committed to being committed to  $p$ ”
  3. If  $p \Rightarrow q$  and  $C_{x,y}p$ , then  $C_{x,y}q$       “If  $p$  entails  $q$  and you are committed to  $p$ , then you are committed to  $q$ ”
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## ACCEPTANCE

- 4 If  $C_{x,y}p$ , then  $C_{y,x}C_{x,y}p$       “You cannot have a commitment to you unless I accept that you have that commitment”

## COMMON GROUND

- SHARED KNOWLEDGE: Unbeknownst to each other, A and B are looking at the same cake.
  - COMMON GROUND: A and B are looking at the same cake, and it is mutually given between them that they are doing so.
-  What's the difference?  
What is the mutuality that defines common ground?
- mutual ~ common, joint, public, open, ...

- Common ground is key to social interaction in general, and communication in particular.
- Social interaction builds on common ground and changes it.

Example: “The president is gay.”

- There is a lot of common ground:  
information, attention, opinions, goals, ...
- Two main questions:
  1. What is common ground?
  2. How do we establish that we have it?

- Common ground is standardly analysed in psychological terms, notably knowledge and belief.
- For example:

$p$  is common ground between  $a$  and  $b$  iff

1.  $K_a p$  and  $K_b p$  and
2. it is common ground between  $a$  and  $b$  that 1.

- This entails that:

$$\begin{array}{ccc}
 K_a p & \text{and} & K_b p \\
 K_a K_b p & \text{and} & K_b K_a p \\
 K_a K_b K_a p & \text{and} & K_b K_a K_b p \\
 & & \vdots
 \end{array}$$

- This iterative structure is the fingerprint of common ground.
- ☹ But it is problematic if  $K$  is a psychological state.

“The recursive spiral is not infinite but only indefinite; we compute it as far as we need to or are able to, which is typically only several levels up.” (Tomasello 2008)

- This argument is somewhat unclear, but it can't be right:

“The series of natural numbers is not infinitely long, but only indefinitely long; we compute it only as far as we need to or are able to.”

- Tomasello conflates common ground with its representation:

We can be **wrong** about the common ground

- This already suggests that common ground is normative.

- Schiffer (1972): most of the CG is implicit: we know it in the same way that an Oxford don knows that his maternal grandmother was never married to Benito Mussolini.
- This analogy is questionable.



- Alternative: CG is a normative condition. (Lewis 1969, Brandom 1994)

$p$  is common ground between  $a$  and  $b$  iff

$$\begin{array}{l}
 C_{a,b}p \quad \text{and} \quad C_{b,a}p \\
 C_{a,b}C_{b,a}p \quad \text{and} \quad C_{b,a}C_{a,b}p \\
 C_{a,b}C_{b,a}C_{a,b}p \quad \text{and} \quad C_{b,a}C_{a,b}C_{b,a}p \\
 \vdots
 \end{array}$$

- General picture:
  - Our social interactions (from which CG emerges) are pervasively normative.
  - CG **constrains** our actions and thoughts.
  - In our actions and thoughts we try to **track** the CG (but may fail to do so).
- The problem that the standard view runs into doesn't arise.
- To be explained: How do we achieve common ground?

1. If  $C_{x,y}p$ , then  $C_{y,x}C_{x,y}p$  (Acceptance)
  2. If  $C_{x,y}p$ , then  $C_{x,y}C_{x,y}p$  (Reflexivity)
- 

From these axioms it follows that, if  $C_{a,b}p$ , then it must be common ground between  $a$  and  $b$  that  $C_{a,b}p$ :

$$\begin{array}{l}
 C_{a,b}p \\
 C_{a,b}C_{a,b}p \quad C_{b,a}C_{a,b}p \\
 C_{a,b}C_{b,a}C_{a,b}p \quad C_{b,a}C_{a,b}C_{a,b}p \\
 C_{a,b}C_{b,a}C_{a,b}C_{a,b}p \quad C_{b,a}C_{a,b}C_{b,a}C_{a,b}p \\
 \vdots
 \end{array}$$

Put otherwise: you have a commitment iff it is common ground that you have that commitment.

$a$  and  $b$  SHARE a commitment to act on  $p$  iff  $C_{a,b}p$  and  $C_{b,a}p$ .

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Courtesy of the Acceptance principle, it follows that:

- Shared commitment = common ground
- That is:  $C_{a,b}p$  and  $C_{b,a}p$  iff


$$\begin{array}{ll}
 C_{a,b}p & C_{b,a}p \\
 C_{a,b}C_{b,a}p & C_{b,a}C_{a,b}p \\
 C_{a,b}C_{b,a}C_{a,b}p & C_{b,a}C_{a,b}C_{b,a}p \\
 C_{a,b}C_{b,a}C_{a,b}C_{b,a}p & C_{b,a}C_{a,b}C_{b,a}C_{a,b}p \\
 \vdots &
 \end{array}$$

Commitment and common ground are closely related in two ways:

1. You have a commitment iff it is common ground that you have that commitment.
2. Shared commitment = common ground

So, we can now **define** common ground as follows:

$p$  is common ground between  $a$  and  $b$  iff  $C_{a,b}p$  and  $C_{b,a}p$

 This definition is not restricted to pragmatics.

This notion of common ground can do the same explanatory work as the standard ones, but furthermore:

1. It doesn't suffer from the problem of psychological implausibility.
2. It is more general:
  - It is not intrinsically epistemic or psychological.
  - It accommodates all sorts of speech acts.
3. It establishes simple and very close connections between speech acts, commitments, and common ground.

# THE PSYCHOLOGY OF COMMON GROUND

- We try to **track** our common ground, but only up to a point.
- The tracking process is driven by heuristics. (Clark 1996)
  - Low effort, high gain (e.g. language)
  - Common ground contains facts, preferences, goals, conventions, procedures, ...
  - Communal common ground: based on nationality, residence, occupation, hobbies, language, religion, politics, folk psychology, gender, ...
  - Personal common ground: based on joint actions, joint perceptual experiences, ...





JA has spawned a cottage industry of philosophers arguing:

- against “intellectualist” theories based on common ground and
- in favour of “direct perceptual” accounts.

However:

- JA is not restricted to (visual) perception.
- Common ground is not necessarily intellectualist.
- JA is very much contingent on common ground.

Moreover: Is JA a psychological or a folk-psychological concept?

Tentative analysis:  $a$  and  $b$  are jointly attending to  $x$  iff it is common ground between them that each is attending to  $x$ .

(Here “attending” is a normative, folk-psychological notion.)

- It is common ground between the two people in the picture that they are attending to the same fork.
- Each expects the other to be committed to this assumption.
- This is essential for them to coordinate their actions.
- This assumption is justified solely on heuristic grounds.

If two normal people with normal vision and normal cognitive capacities are facing each other and ... and ..., then they will take it to be common ground between them that each is attending to ...

## SELF TALK AND PRIVATE COMMITMENTS

Socrates: And do you mean by thinking the same which I mean?

Theaetetus: What is that?

Socrates: I mean the conversation which the soul holds with herself in considering of anything. [...] The soul when thinking appears to me to be just talking — asking questions of herself and answering them, affirming and denying.

(Plato, *Theaetetus*, ca 369 BC)

Athena (2 years):

“What am I doing? I’m going to make a train track and put some cars on it... I need some cars on it... I make a train track and put some cars on it. *Two* cars... This piece is hard... There!... One more piece...”

(Fernyhough 2016)



Washoe was often seen “moving stealthily to a forbidden part of the yard signing QUIET to herself, or running pell-mell for the potty chair while signing HURRY.”

(Gardner & Gardner 1974)

- Self talk can be fully overt (“private speech”), covert (“inner speech”), or anything in between.
- Rates of overt self talk peak during years 5-6.
- All of us talk to ourselves, but are not always aware of doing so.
- Self talk is associated with reasoning, problem solving, planning and plan execution, attention, and motivation, among other things.
- Self talk is problematic if linguistic communication is defined as a form of information exchange.

- Vygotsky on “internalisation”:

Children master the social forms of behavior and transfer these forms to themselves. [...] I shall relate to myself as people relate to me. [...] This is equally true with regard to voluntary attention, logical memory, the formation of concepts, and the development of volition. [...] **All higher mental functions are internalized social relationships.** (Vygotsky 1960)

- When I talk to myself, I’m making (or trying to make) commitments to myself: private commitments.
- General form of a private commitment:  $C_{x,x}p$
- The purpose of private commitments is self-coordination. (Cf. Bratman 1987)



- Telic private commitments are **INTENTIONS**:  
If Bruce is privately committed to act on [[Bruce will do the dishes]], then he **intends** to do the dishes.
  - Atelic private commitments are **BELIEFS**:  
If Bruce is privately committed to act on [[Clyde did the dishes]], then he **believes** that Clyde did the dishes.
- ☞ Here, “intention” and “belief” are normative, folk-psychological notions (and “normativity” is a style of behaviour).

## COOPERATION AND IMPLICATURES

- Grice's idea: Communication is cooperative behaviour governed by maxims of rationality.
  - Speaker and hearer expect each other to be cooperative.
  - This assumption helps to license inferences:

CONVERSATIONAL IMPLICATURES.

- Example:

A: I am out of petrol.

B: There is a garage round the corner.

↪ For all B knows, the garage is open and has petrol to sell.

## Conversational maxims

1. **Quality:** Try to make your contribution one that is true:
  - 1 Do not say what you believe to be false.
  - 2 Do not say that for which you lack adequate evidence.
2. **Quantity**
  - 1 Make your contribution as informative as is required (for the current purposes of the exchange).
  - 2 Do not make your contribution more informative than is required.
3. **Relation:** Be relevant.
4. **Manner:** Be perspicuous.

- QUALITY<sub>1</sub> is the only maxim that refers to mental states.
  - QUALITY<sub>1</sub> yields sincerity inferences for assertions:
    - a* tells *b*: “Napoleon is Greek.”
    - ∼ *a* believes Napoleon is Greek.
  - This doesn’t generalise to other speech-act types.
  - Cf. Searle’s “sincerity conditions”.
  
- Grice’s style of **pragmatic reasoning** is thoroughly mentalistic:
 

[The speaker] has said that *p*; ... he could not be doing this unless he thought that *q*; he knows (and knows that I know that he knows) that I can see that the supposition that he thinks that *q* is required; ... he intends me to think, or is at least willing to allow me to think, that *q*; and so he has implicated that *q*.

It is common ground that:

1. the speaker has said that  $p$ ;
2. he observes the maxims;
3. he could not be doing this unless he was committed to  $q$ ;
4. he has done nothing to prevent  $q$  from becoming common ground;
5. he is committed to the goal that  $q$  become common ground.

And so he has implicated that  $q$ .

(i) Alice: “Clyde took some of the cookies.”

It is common ground that:

1. Instead of saying (i), Alice could have made a stronger statement:

(ii) Clyde took all the cookies.

Why did Alice say (i) rather than (ii)?

2. The most likely explanation is that Alice doesn't have sufficient evidence to commit herself to act on (ii).
3. Alice has sufficient evidence to commit herself to act on either (ii) or  $\neg(ii)$ .
4. Between them, 2 and 3 entail that Alice has sufficient evidence to commit herself to act on  $\neg(ii)$ .
5. Therefore, Alice is committed to act on  $\neg(ii)$ .

And so Alice has implicated that Clyde didn't take all the cookies.

- INTEGRITY MAXIM : If  $C_{a,b}p$  then  $\neg C_{a,c}\neg p$ .  
“Don’t undertake conflicting commitments.”

Two special cases:

- CONSISTENCY : If  $C_{a,b}p$  then  $\neg C_{a,b}\neg p$ .
- SINCERITY : If  $C_{a,b}p$  then  $\neg C_{a,a}\neg p$ .

A stronger version of SINCERITY:

- SINCERITY\* : If  $C_{a,b}p$  then  $C_{a,a}p$ .  
“If your commitment is telic, you must intend  $p$ ;  
if your commitment is atelic, you must believe  $p$ .”



SINCERITY\* yields implicatures like these:

1. *a* tells *b*: “Napoleon is Greek.”  
     $\leadsto$  *a* believes Napoleon is Greek.
2. *a* promises *b*: “I’ll mow the lawn.”  
     $\leadsto$  *a* intends to mow the lawn.
3. *a* asks *b*: “Are you gay?”  
     $\leadsto$  *a* intends *b* to commit himself to act on  $\llbracket b$  is gay  $\rrbracket$   
        or to commit himself to act on  $\llbracket b$  is not gay  $\rrbracket$ .

Cf. Grice’s “quality implicatures” and Searle’s “sincerity conditions”.

SINCERITY yields weaker implicatures than SINCERITY\* :

1. *a* tells *b*: “Napoleon is Greek.”  
     $\rightsquigarrow$  *a* doesn't believe Napoleon is not Greek.
2. *a* promises *b*: “I'll mow the lawn.”  
     $\rightsquigarrow$  *a* doesn't intend not to mow the lawn.

These can be strengthened in the same way weak quantity implicatures are strengthened.

Normative pragmatics offers:

- analyses of all major speech act types
- a theory of common ground
- a theory of conversational implicatures
- a general treatment of sincerity
- an account of self talk

What more could you want?