While Bratman does indicate that "each of us has the ability to pick out the other participants," [p. 41], I think he leaves out a crucial step: the act of group formation. My sense is that if we make this explicit, we can actually make better headway. The following set of conditions for group formation is incomplete:

1. In s_0^*, the individuals in B jointly intend to bring a group k into existence to go to NYC. This requires several sub-conditions:

    (a) A profile of intentions such that, for all $i \in B$, i intends to join k ($\sigma_i(s_0^*) = a_i^{k+}$) and, for all $j \notin B$, j does not intend to join k: $\sigma_j(s_0^*) \neq k^+$.

    (b) Group existence conditions are now required, such as that the individuals each prefer states in which k contains exactly the individuals B to any other state: for all $s, s' \in S$ such that $c(k, s) = B$ and $c(k, s') \neq B$, $s' \preceq_i s$. The idea is that, since the existence of this kind of group simply requires everyone's assent, i won't remain in the group if the composition is not to her liking. But, to be complete, this needs another condition because we don't know what happens when individuals outside of B also decide to join k. For example, although s is preferred to s', s' may be preferred to any other state. In that case, $c(k, s')$ could, presumably, come to exist.

2. $E_{B \to k}$ (the joint intentions of B to form k) is common knowledge in state s_0^*.

3. Following the intended acts, a new state of the world s occurs in which B forms K: $c(k, s) = B$.

4. In state s, the existence and composition of k is common knowledge.

5. Once the group forms, there must be a plan to get the group to NYC. This is where the idea of group awareness may prove helpful. We may also need to add in structure for planning within groups. This end must be joined to the intentions, beliefs and preferences at play in s_0^* to make everything hang together.

Once the preceding is sorted out, we can start talking about individuals intending and acting from a state of group existence. Thinking about this second part is the next challenge.

6.1 Group Awareness

Example: awareness of corporate culture" Let us illustrate the difference between zero-probability events and unawareness in a group context. Suppose we pick up the action at $t = 1$.

Amee is the customer service manager who reports directly to Bob, who is the owner of Intentional Products, Inc. a business-to-consumer firm. Amee conceives of a state of world in $t = 2$ in which her group develops a "culture of customer-service excellence." Label this state s_1^*. The other possibility is a state in which IPI delivers a level of customer service consistent with industry standard practices, state s_1. Assume $S_2^0 = \{s_2^*, s_2\}$.

If Amee is successful, the firm is more profitable: $\pi(s_2^*) = 80$, whereas $\pi(s_2) = 60$. Suppose Amee incurs a personal cost of effort if she attempts to establish the culture of excellence of $c = 15$. Furthermore, if she does attempt it, state s_2^* actualizes with certainty. If Amee does not attempt it, then she incurs no personal cost and s_1 (the status quo) actualizes with certainty. Clearly, Amee will not attempt it unless she receives some bonus payment $B \geq c$ in the event of success.

Suppose that Bob, being a member of IPI, is aware of the possibility of a "culture of customer-service excellence." Thus, both Amee and Bob are aware of reality fully elaborated: $S_2^A = S_2^B = S_2^0$. Although Bob is aware of s_2^*, he believes the actualization of this state is impossible (zero probability). Amee believes the two states happen with equal probability.

Suppose Amee proposes a bonus of $B = 35$ if successful and nothing otherwise. Under this deal, Amee's expected payoff is

$$Pr_A(s = s_2^*) \times (B - c) + Pr_A(s = s_2) \times (0) = 0.5 \times (35 - 15) + 0.5 \times (0)$$

$$= 10$$

since she gets nothing under the status quo state s_2. Bob's expected payoff is

$$Pr_B(s = s_2^*) \times (\pi(s_2^*) - B) + Pr_A(s = s_2) \times \pi(s_2) = 0 \times (80 - 35) + 1 \times 60$$

$$= 60.$$

It is worth pointing out that there is no feasible deal (i.e., one constrained by the funds available under each state) that makes either individual strictly better off. Bob is happy to agree to give Amee all the surplus in s_2^* because he believes it is impossible.

Now, switch things up and assume that Bob is outside the organization – say, Bob is a venture capitalist dealing with Amee the entrepreneur. Furthermore, assume that, exactly because Bob is outside the organization, Bob is unable to conceive of what a "culture of customer-service excellence" might look like in IPI. Alternatively, Bob may be able to conceive of it, but realize that

there is no way he could verify it as an outsider – either way, a problem arises.

Then, from Bob's perspective, s_2 is the *only* possibility. Thus, Bob expects to earn $\pi(s_2) = 60$ with certainty. He will not agree to a deal in which Amee is paid a bonus. First, he cannot conceive of (or, alternatively, verify) what Amee is talking about – which precludes any contractual agreement around this idea since, presumably, he will not agree to put clauses in a contract the meaning of which he does not understand. Second, even if one could get past the first problem, from his perspective, any payment to Amee (should conditions arise that he would have to make one, even though he does not grasp Amee's idea) would come out of his 60 which, sans any deal with Amee, he is fully guaranteed.

The point of the example, then, is that awareness within an organization permits a wide range of state-contingent arrangements – even when individuals disagree on the probabilities. Indeed, divergent beliefs may be the *source* of internal organizational opportunities such as exemplified here. Moreover, awareness may span a wide range of state-cintingent organizational phenomena, such as organizational intentions, plans, conditions, etc. Those outside the organization do not share in this awareness. This limits the sorts of state-contingent arrangements outsiders can make with an organization. It also limits the extent to which the inner workings can be understood by outsiders (e.g., competitors). In this example, a "culture of customer-service excellence" may be viewed by outsiders as the "secret sauce" that allows IPI to outperform the industry

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