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94

COOPERATION, COMPETITION, CONFLICT AND COMMUNICATION

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Cooperation, Competition, Conflict and Communication

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1. What is cooperation?

As we have seen in chapter 1, there have been several attempts to characterize what cooperation is, since John Owen introduced the concept in the beginning of the 19:th century. Some of the most notable of these were Peter Kropotkin's (1902) treatise on mutual aid and Axelrod's notion of "tit for tat" (Axelrod 2001). In the field of language and communication, an important contribution was made by Grice (1975) where an explication of communication as cooperative was made through the proposal of four maxims of rational communication which Grice, inspired by Kant, (Kant 1964), called the maxims of quality, relation, quantity and manner.

Building on sources such as the ones mentioned our point of departure, in this book, is the definition of cooperation given in Allwood (1976). Cooperation is there claimed to be a matter of degree, definable in terms of four requirements that would be needed to achieve ideal cooperation. Thus, two or more parties interact cooperatively to the extent that they in their actions

  (i)   take each other into cognitive consideration
  (ii)   have a joint purpose
  (iii)   take each other into ethical consideration
  (iv)   trust each other to act in accordance with (i) – (iii).

All four requirements need not be met, but as soon as one is met, there is some degree of cooperation and two persons may be said to cooperate to some extent.

2.   How is cooperation related to communication?

Normal communication is cooperative since it requires at least the following two of the conditions to be met:

  (i)   the parties in their actions take each other into cognitive consideration in order to achieve
  (ii)   the joint purpose of understanding

Taking the other person into cognitive consideration is necessary in order to make sure that the information reaches him/her and is shared. Both "cognitive

consideration" and "sharing" can conceptually be further refined in a number of ways. "Cognitive consideration" could, for example, be specified as to which level of awareness and intentionality the reactions and processes which are involved occur. It could also be specified as to whether these processes involve the considering agent's perception, emotion, cognitive attitudes or factual reasoning. Further, the object that is cognitively considered could be specified as to whether it is inanimate or animate, capable of agency. When using cognitive consideration in order to analyze what is involved in cooperation, the object will normally either be an entity capable of agency (like another person) or some property, behavior or object directly connected with such an entity. Thus, we normally do not cooperate with stones, assuming that they are not capable of agency, but with persons.

In a similar way, the concept of "sharing" can also be further specified. This is important since sharing is fundamental to communication which as we have seen can be defined as "sharing of information". In the most general sense, any similarity between two entities with regard to some property P might be described as the two entities sharing the property P; e.g. two cars might share the property of being red. A special case of this occurs when the property involves two or more agents having the same relation to the same object (token). Relations of interest for dialog analysis are primarily perceptual and cognitive attitudes but could also be possession, physical contact, or causal control, e.g. sharing awareness of some information or sharing consumption of some meal. Another aspect concerns the degree of mutual awareness of the sharing. For some purposes, it is not enough that all parties merely have the same relation to the same object, the parties must also have an awareness of the relationship. Thus, we can distinguish different levels of sharing depending on whether one or more participants have this awareness, and whether there is also awareness of this awareness. A third aspect relates to whether the object that is being shared is contributed by one, several or all of the sharing parties. Thus, I can share your beliefs or worries without it necessarily being the case that you share mine. We might now say that "mutual sharing" occurs if and only if all involved parties have contributed to the object of sharing. "Sharing" without the qualification "mutual", can then occur even if only one party has contributed to what is being shared.

Communication can involve "one-way sharing", as in radio broadcasts. It can also be two-way, where both parties cognitively consider each other. However, mutual consideration alone would not be sufficient if both parties made each other understand totally different things. This would be what might be called "double one-way communication". The goals of both parties have to be related to each other. For this, the parties must take each other's purpose into account and manifest this in their response. Two-way communication is thus cooperative in the sense of involving mutual cognitive consideration and the goal of mutually shared understanding of a minimum of at least two related contributions. Two-way communication occurs even if the second responding contribution is negative since a negative reply also shows cognitive consideration of the other party and the goal of mutual understanding and, thus, as we shall see below, provides a starting point for ethical consideration and trust.

Also the notion of a "joint purpose" like that of "cognitive consideration" can be subjected to further analysis. The type of joint purpose we are dealing with depends, for example, on the following dimensions:

1.   Degree of mutual contribution to shared purpose: Has the shared purpose been contributed by one, several or all involved parties?

2.   Degree of mutual awareness of shared purpose: Have all concerned parties perceived and understood that other parties have the same purpose, i.e. one might well have the same purpose as another person without being aware of this fact.

3.   Degree of agreement reached concerning the purpose: Have the parties entered into an agreement concerning working toward the purpose.

4.   Degree of dependence between purposes: Does the achievement of one party's purpose depend on another party also achieving their purpose.

5.   Degree of antagonism between the purposes: Are the purposes of the parties antagonistic.

Variation in what we can be meant by a joint purpose can occur along all 5 dimensions. We will consider the cases one by one. If A gives B an order to help him and B decides to comply, the two parties share a unilaterally contributed purpose and could be said to engage in one-way cooperation. In cases of this type, it is not uncommon to say that B is being cooperative, i.e. complying with the purpose contributed by A. This use of "cooperative" might even be extended to inanimate objects so that we might say, for example, that a car is being uncooperative, if it will not start. It is worth noting that the term "compliance", in many studies is equated with the term "cooperation" and that it is not uncommon in the business world to use the term "team player" for someone who quickly agrees with given directions and moves toward completing the task. We will discuss this relationship a little more in detail in chapter 5.

Secondly, variation might also occur according to how aware we are of sharing a purpose with other people. Having the same purpose as another person does not mean that we automatically are aware of this fact. In line with this, one of the ways to achieve a successful negotiation is to have a discussion between the negotiating parties concerning what they have in common, specifically concerning what common goals they want to reach (Fisher and Ury 1983). Since they may discover that they have goals or preferences in common that they were unaware of, all parties gain without giving in or making any concessions.

Thirdly, there is a distinction to be made between being mutually aware of having the same purpose and having agreed to have the same purpose. You and I might both be aware that we both want to terminate a discussion without having agreed to this. Such tacit understandings are common, but they are also a potential source of problems when people assume a commonality that later proves to be only weakly present or not present at all.

Fourthly, we can distinguish cases where we can both achieve the same purpose independently of the other person (e.g. you and I can independently leave a meeting) from cases where my achieving my purpose is dependent on you achieving the same

purpose, (e.g. two-way communication is only possible if both parties share this purpose).

Finally, purposes can be more or less antagonistic. For example, if A and B share the abstract purpose of wanting to hurt the other person ("I want to hurt you"), the deictically anchored versions of this purpose will be antagonistic, even if the abstract formulation is shared,

When "cognitive consideration", "sharing" and "joint purpose" are used below, we will, when necessary, make use of these various possible ways of specifying the concepts that we have pointed to.

If communication is used for conflict, at least cognitive consideration will always be involved. This is required in order to effectively hurt the other party. Without shared understanding and a relevant response, we would, however, have one-way conflictual communication. In order to have conflictual two-way communication, as shown for example, in the analysis of a quarrel (in chapter 8, below), joint understanding and a relevant response must also be involved. In this type of conflict, the purpose seems to be that both parties should understand that (and how) the other party has been hurt.

3. Ethics and cooperation

Even though communication can sometimes be used to pursue conflicts, at other times communication can also be cooperative in the sense of involving ethical consideration and trust. When it involves ethical consideration, this means that the parties act according to the following maxims (cf. Allwood 1976 and 1995a). Each maxim is first formulated negatively and then followed by a positive and stronger formulation in brackets. The difference between the two formulations corresponds to a negative and a positive formulation of the "Golden rule", i.e. "do not do to others what you would not like them to do to you" versus " do to others what you would like them to do to ".

(i)   They try not to force each other (make it possible for the other party to act freely).

(ii   They try not to prevent each other from pursuing their own motives (help each other to achieve their motives). Since the urge to escape pain and to seek pleasure is perhaps the strongest of all human motives, this means that they should try not to hurt each other (make it possible for the other party to seek pleasure).

(ii   They try not to prevent each other from exercising rationality successfully (make it possible for the other party to exercise rationality successfully). Since correct information, at least in the long run, is a precondition of successful rational action they should not lie but give each other adequate and correct information.

Ethical consideration involves having ethical goals, making ethical decisions and acting ethically but it can also be seen as connected with general *obligations* to act in this manner. Even if the desire to behave in this manner changes, the obligations may

persist, sometimes bringing with them social sanctions for failure to comply, cf. Allwood (1994).

Let us now examine the properties of ethical communication in some more detail. In order to make it possible for others to be agents, we should refrain from imposing on them too much, instead leaving them the freedom to act according to their own will and intention. This is one of the sources of politeness. It is usually more polite to make an indirect request such as *could you pass me the salt* than a direct request as *pass me the salt* since the former in its formulation, even if not always in actual usage, gives the interlocutor somewhat greater degrees of freedom than the latter.

Making it possible for others to be agents is also what allows us to claim that "brainwashing" and many kinds of propaganda are unethical. They are unethical since they remove the recipient's possibilities to exercise his/her own critical judgement and in this way reduce the recipient's possibilities of being an agent.

Secondly, ethical communication implies that we should make it possible for others to pursue their own motives. A very fundamental type of motive is related to pain and pleasure. Another is related to power, cf. Allwood (1980). People generally want to escape pain and seek pleasure. Thus, in our communicating, we should not unnecessarily hurt people but, if possible, rather give them joy. Here we have another source of politeness strategies. It is usually more polite to compliment people than to insult them. We also see one of the reasons for why so much of communication has a consensus orientation. We do not wish to hurt others, especially if they have more power than we do and even if they do not have power, they might have it in the future, so one way of understanding ethical communication is to treat another as if they might someday be your boss. The implementation of ethics is in this case and in others, strongly aided by the reliance on a principle of reciprocity of which the golden rule is an example but also by extending it to a principle of negative reciprocity introducing such things as revenge and what might happen if you don't follow the golden rule. In other words, if you hurt others they might hurt you later on, whereas if you treat them well, they might treat you well.

Thirdly, ethical communication in the analysis proposed here, involves making it possible for others to be rational, i.e. they should be able to act adequately and competently. In order successfully to act adequately and competently, we must have correct information, otherwise we cannot judge if the appropriate preconditions for a certain course of action are present. This directly implies that we should not lie or mislead. If we do this, the other person's possibilities of obtaining the desired outcomes through the exercise of his/her rationality are radically diminished. This does not mean that rational action has to be based on correct information. Rational action can be based on both correct and incorrect information. It only means that the likelihood of successfully achieving one's goal, in the long run, is greater if action is based on correct rather than incorrect information.

4. Trust

If the parties, in addition to having ethical consideration for each other also trust each other, this means that they believe that the other communicators are cognitively and

ethically considering them as well in trying to achieve common understanding or other joint purposes. Just like the concepts of "cognitive consideration" and "joint purpose" discussed earlier, the concept of "trust" can be specified in several ways. Two of these are the scope of trust and the motives for trust.

Concerning the scope of trust we might distinguish partial trust from more holistic trust. We can trust B as a carpenter without trusting him more holistically as a human being. We might trust him to renovate a room properly without trusting him to carry a large cash deposit that we haven't counted to the bank. It is this latter holistic sense we have in mind in the definition of "ideal cooperation", even though the partial sense will also be involved in many cases.

The concept of trust is also dependent on what motives lie behind the expected behavior of the trustee. Is he/she motivated by fear of sanctions, by self-interest or by a wish to behave cooperatively for ethical reasons? In the case of ideal cooperation it is this latter motive which is the focus, even though in cases of less ideal cooperation the other motives might well be involved.

Thus, it might be very reasonable to trust (in the partial sense) even an enemy or neutral party to act in a certain way, to the degree that it is in that party's own interest (assuming the party is rational). However, such trust would most rationally dissolve in the case of a change in that party's interests. One might also trust in some agent behaving in a socially acceptable or ethically considerate way, even against that agent's own desire, given a fear of sanctions or a sense of moral responsibility. Trust in the more holistic ethically ideal sense, would be involved if we trust another person to further our goals out of a sense that the person is truly cooperative, even in the absence of self interest or fear of sanctions.

We may now consider the question of whether the conditions we have associated with trust could be achieved (e.g. by cognitive consideration alone) without adding an explicit requirement of trust on ideal cooperation. To discuss this let us again consider the relationship between trust and the first three levels of cooperation (cognitive consideration, joint purpose and ethical consideration). "Trust" requires not only that the parties themselves meet conditions (i) – (iii) but also that they expect and rely on other parties to do the same. This requirement, for example, excludes a situation where A and B by cognitively considering each other arrive at the conclusion that the other party is not cognitively considering them. This situation would, however, be allowed without the requirement of "trust". Similarly, it excludes a situation in which A and B are both working for the same purpose while believing that the other party is not, or a situation where both parties are ethically considering each other while believing that the other party is not doing so. Thus, if these possibilities are to be excluded as incompatible with ideal cooperation and/or ideal communication, a requirement of trust is needed.

On the other hand it is also true that A through cognitive consideration *could* arrive at the conclusion that B considers him/her cognitively or ethically or shares the same purpose. But this conclusion is not necessary. It only follows given a number of extra assumptions about the nature of B's actions (e.g. that he is ethical or has the same purpose as A). If A is able to make these assumptions, he/she probably also will trust B and meet condition (iv) of ideal cooperation.

More in general, the four requirements on cooperation are related to each other in the following way:

Cognitive consideration is basic and requires no other requirement to be met. Similarly, the parties can have the same purpose without being aware of this, i.e., without cognitively considering each other. Ethical consideration, however, requires cognitive consideration but ads attitudes and behavior not given by cognitive consideration alone. Similarly, trust requires a certain amount of cognitive consideration but, as discussed above, adds expectations not necessarily given by cognitive consideration alone.

5. Cooperation, collaboration and working together

From a historical point of view the word (and the concept) " cooperation " comes from the Latin "co-operare " (to work together). So from the point of view of origin " cooperating ", " collaborating " and " working together " more or less express the same idea. However, over time the three expressions have become differentiated. Because of their Latin origin, the words " cooperate " and " collaborate " have become slightly more specialized and abstract then the expression " working together" which is in keeping with the Anglo-Saxon origin of the latter expression and gives it a more concrete, "down-to-earth" sense.

Let us now discuss in somewhat more detail the relationship between "cooperate", "collaborate" and "coordinate". First, it should be said that the use of the three terms overlaps in ordinary language, especially between the two terms *cooperation* and *collaboration*. This means that any attempt to distinguish them must be partly stipulative.

It seems clear that *coordination* involves the least requirements on mutual relations between the interacting parties. On the scale proposed above, the lowest degree of cooperation, (i) taking each other into cognitive consideration, could therefore be called *coordination.* It is thus *cooperation* in the sense of *coordination* that is presupposed for conflict. Turning to *collaboration*, this term can also be said to pose fewer requirements on the mutual relations between the interacting parties than *cooperation.* People can arguably be "collaborators" without trusting each other, and, without being ethically committed to each other. This can be seen in the use of the term *collaborator* to denote people who are working with an oppressive regime e.g. *Nazi collaborators,* or the use of the term by a boss to designate his employees or business contacts. We therefore suggest that *collaboration* could be used for interaction which combines criteria (i) and (ii), i.e. cognitive consideration and having a joint purpose or mutual goal. We can see this also in some of the proposed explicit definitions of collaboration or proposed in the AI literature, for example, Grosz and Sidner (1990), and Cohen and Levesque (1991). Some, (e.g., Clark and Wilkes-Gibbs 1986, Grosz and Sidner 1990), however, use the term *collaboration* rather than *cooperation* to describe the driving force behind dialog. While some notion of collaboration or *teamwork* (Cohen and Levesque 1990) could be sufficient to account for much of the interaction in task oriented dialogs focused on a joint purpose, a stronger notion, including also ethical commitment and trust, is needed to account for the more general level of coordination and coherence in dialog, which to some extent can be present even in situations of conflict.

The term *cooperation* more naturally than *collaboration* seems to encompass states where the parties are ethically committed to each other, trust each other and have a more or less egalitarian (in terms of social power) relationship to each other. If this suggestion can be accepted, the term *cooperation* would function similarly to adjectives like *long, old* and *big* which cover both a dimension as a whole and a specific part of that dimension. You can ask of a baby how old he/she is and get the answer - 3 days old. But you can also say of a person who has passed middle age that he/she is old. In the same vein, *cooperation* would cover *coordination* and *collaboration* but also be the preferred term for types of interaction involving more demanding aspects of the scale, such as ethical commitments, trust and egalitarian social relationships.

6.   How is cooperation related to competition and conflict?

Cooperation, competition and conflict are usually not pursued for their own sake. We don't cooperate just in order to cooperate. We cooperate in order to achieve some other purpose. Similarly, we usually don't compete just for the sake of competition. We compete in order to gain control of some resource for which there are several contenders. In the same way, we usually don't pursue conflict for the sake of conflict but because we have a conflict with regard to some issue or interest.

Cooperation, competition and conflict are therefore usually not social activities in their own right. Rather they are alternate modes of the interaction in some more basic underlying social activity. For example, if two people are writing a paper together, their interaction might alternate from being truly cooperative to being competitive or, in the worst case, even conflictual. Thus, all three modes of interaction usually presuppose another activity and purpose which they are concerned with.

Let us now try to characterize the three modes of interaction in relation to each other, taking as our point of departure the definition of "cooperation" given above. As we may remember "ideal cooperation" was there defined as interactive activity in the service of a joint goal characterized by cognitive consideration, ethical consideration and trust. Using these four characteristics of "ideal cooperation", let us now try to contrastively characterize "competition" and "conflict".

Competition like cooperation requires " cognitive consideration ". You have to perceive and to some extent understand another person in order to compete with him or her. However, a difference appears when we come to the joint goal which is characteristic of cooperation. Rather than being truly joint, the goal is now individualized and relativized through comparison with another party. The goal no longer is, "we should sell as much as possible for our company" rather it becomes "I should sell more than you for our company" . The company might well benefit from both modes of interaction but it should be intuitively clear that a cooperative and a competitive modal interaction in order to increase sales are different. When it comes to " ethical consideration" , things of not so clear. Competitors may be ethically considerate of each other or they may not. The consequences of competition are not clear in this respect even though there often are rules which will constrain the possibilities for unethical behavior in competition. In same way, "competition" has

no clear relation to "trust". Competitors may trust each other or they may not. Whether there is trust or not depends on many contextual factors, including rules and regulations, which are not directly related to the nature of competition itself.

Turning to "conflict", conflict like competition usually requires "cognitive consideration". You cannot hurt somebody unless you know and to some extent understand what they're up to. So all three modes cooperation, competition and conflict are coordinated forms of interaction, requiring some form of "cognitive consideration". As with competition, a difference appears with regard to "the goal" of the interaction. In cooperation, the goal is joint. In competition, the goal is similar but incompatible on an individual level. In conflict, the common goal has usually disappeared, diminished in importance or changed into a pursuit of incompatible goals. A clearer difference appears with regard to "ethical consideration". This feature, which is one of the features of ideal cooperation that becomes toned down and unclear in competition loses its importance in conflict. One might almost say that it turns to its opposite - unethical consideration. Persons who are in conflict usually behave unethically to each other by trying to hurt each other, trying to restrict each other's freedom and often tell each other lies. The difference we have observed with regard to ethical consideration persists when we consider "trust". Ideal cooperators trust each other. In competition, things become unclear. In conflict, trust usually turns to its opposite. Conflicting parties usually intensely distrust each other and try to obstruct or avoid the other party.

The figure below summarizes the relationship between cooperation, competition and conflict we have discussed above.

Figure 1: the relationship between cooperation, competition and conflict

Mode of interaction -------------------- Constitutive feature	Cooperation	Competition	Conflict
Cognitive consideration	yes	yes	yes
Joint goal	yes	Similar but individually incompatible	Defocused –often incompatible
Ethical consideration	yes	yes?	No – unethical actions
Trust	yes	no?	no – distrust

Another question that should be addressed in discussing the relationship between cooperation, competition and conflict is the question of whether the three modes of interaction are "one way" or "two-way". All three modes of interaction are primarily interactive, i. e. "two-way". Stretching the concepts, they can perhaps all three be made non-interactive, i.e. "one-way". This stretching is most forced with the concept of cooperation although A can in some sense cooperate with B without it being the case that B is cooperating with A. Turning to competition and conflict, the stretching

is more natural A can compete with B without it being the case that B is competing with A. Similarly, A can be in conflict with B without it being the case that B is in conflict with A. Competition and conflict are both more naturally one-sided than cooperation. The three concepts of "cooperation", "competition" and "conflict" are here different from the concept of "giving" which is primarily one-way but can be extended into two-way or reciprocal giving. (This concept was developed by Boulding (1973).

7.   An activity model of cooperation

In Figure 2 below, we give an overview of the model of cooperation, (competition and conflict) as well of communication, we will be using in this book, In accordance with what has been said above, it is an activity oriented model.

Figure 2. Activity Model of Cooperation
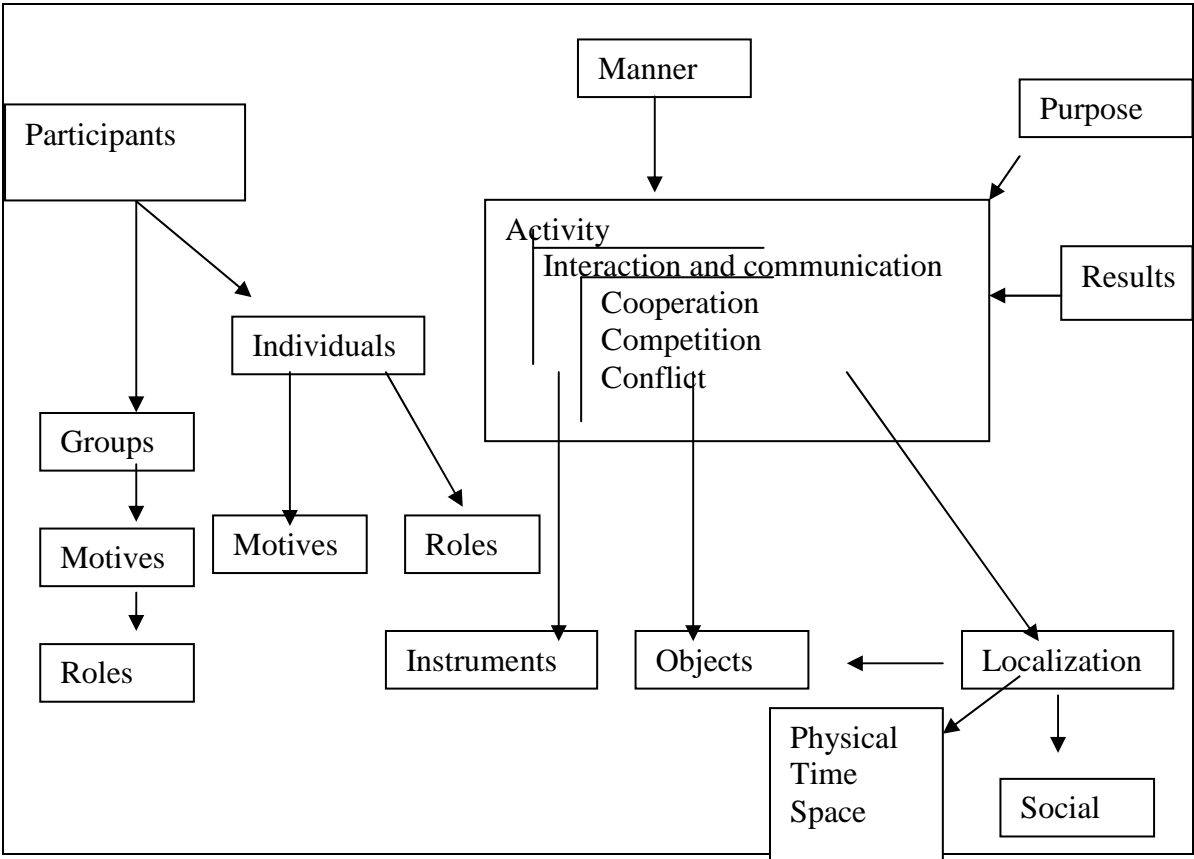
The model is to be understood in the following way.

Cooperation, competition and conflict are seen as alternate modes of the communication and interaction in different social activities. Thus, for example, the interaction in a social activity like a negotiation or a discussion could in an extreme case alternate between the three modes. In this way the model captures the fact that the character of cooperation, conflict and competition is likely to vary depending on what type of activity and interaction they are part of. Cooperation in a classroom is probably in some ways different from cooperation in a travel agency.

The model also captures the fact that cooperation, competition and conflict probably should not normally be seen as autonomous activities but rather as aspects of some activity that is engaged in for another purpose. Of the three modes perhaps "conflict" is the mode that could most easily be pursued for its own sake.

The factors of the model are phenomena that the activity involves on order to be pursued. In semantic-pragmatic theory, they have often been referred to as "semantic roles" (cf. Fillmore 1982).

1.   Purpose(s), function(s)
2.   Participants (groups, individuals and their motives and roles)
3.   Instrument
4.   Objects
5.   Localization (physical and social)
6.   Results
7.   Manner

The purpose of an activity is its "raison d'être" - the reason for it to exist. Activities can usually be defined through their purpose, e.g. cooking, gardening or relaxing. Sometimes the purpose is not explicit but rather an implicit effect of the activity. In such cases, we will refer to it as a function. For example, one of the functions of attending a lecture might be to socialize with friends.

Another very important factor influencing an activity are the participants. Any interactive activity needs participants. These participants can be individuals or groups. The participants have motives for their participation in the activity and through their participation acquire "social roles" like negotiator, teacher or travel agent. They employ instruments like telephones, pieces of chalk etc. The activities might have an object like "eating soup", where "soup" is the object being eaten or "negotiating a salary "where" the salary" is the object being negotiated. The activities are usually localized in a social institution and organization, as well as in a physical location.

Activities have purposes like teaching students logarithms and results which might or might not be different from the purpose, i.e. the students might not have learned logarithms. Finally the activity and the interaction is pursued in a particular manner. For example, teaching can be done quickly slowly, carefully or sloppily.

In this book we will be using the model to primarily focus on the nature, preconditions and consequences of cooperation (with some consideration of competition and conflict) in different social activities. In the later chapters we will examine some of the phenomena involved in the different "semantic roles".

8. Modalities of cooperation

The contrast between " what is " and " what ought to be " and contrast between " what is ", " what is possible " and " what is necessary " is sometimes called a contrast of " modality ". For example, in studying cooperation, we will now and then be faced with the with the modal contrast between questions like:

(i) Are people cooperating in this setting (descriptive/actual)?
(ii) Should people cooperate in this setting (normative/deontic)?

Or questions like:

(iii) Are people cooperating here (descriptive/actual)?
(iv) Would it be possible for people to cooperate here (possibility)?
(v) Is cooperation necessary to achieve the purpose at hand (necessity)?

All five questions illustrate different so called modalities. Question (i) and (iii) are both about what is actually happening (descriptive). Are people actually cooperating? Question (ii) is normative – it concerns what people should do or what they ought to do. Even if they are not actually cooperating, maybe they should or ought to. Question (iv) concerns "what is possible". Even if people are actually not cooperating, this question asks whether it would not be possible for them. This question could then be further subdivided into normative and a descriptive variant of the question – "is it possible for you to cooperate?" versus " is it possible that you ought to cooperate?" Another question concerns the relationship between the two - Ought/ should one always try to really cooperate if it is possible to do so?

The fifth question concerns " necessity ". When is it necessary to cooperate in order to achieve a particular purpose and when is it possible but not necessary to do so? Using the modality of " necessity ", you may also ask what features are necessary for cooperation to work well or to take place at all in a particular case. Likewise, using the modality of " possibility", you may ask what features are possible (and perhaps beneficial) but not really necessary.

In what follows below, we will make use of all the modalities we have discussed above. Thus, we will sometimes discuss what people actually do (descriptive, actual modality), some times discuss what they think (or we think) they should/ ought to do, sometimes what they (or we) think is possible and finally, what they (or we) think is necessary.

 9.   **Methods of studying cooperation**

Different modalities require different methods. Basically, most research has been directed toward describing what people actually do when they cooperate. The methods used to achieve this have been many. For example, the following have been used:

(i)   Questionnaires
(ii)   Interviews
(iii)   Ethnographic observation
(iv)   Audio and video recordings + transcription
(v)   Social-psychological experiments

As we can see virtually all social science methods have been used. In what follows, we will make use of them all. However, since our own research often has involved interview data and analysis of transcribed video recorded or audio recorded interaction, there will be an emphasis on data of this type. In general, our attitude

will not be that of " methodological purism", rather it will be one of " methodological combination", making use of the methods which seem to make most sense in a given case. This, for example, entails that while we believe strongly in the importance of
" ecological validity" and " naturalistic data", we do not think that such data is always sufficient. Often interview data or data based on ethnographic observation will supply a background of insight that would not be present in a particular instance of recorded and transcribed data. The triple combination of recorded, transcribed and analyzed data with ethnographic observation and interview is therefore very often desirable. Since this combination frequently is very labor intensive, we often will rely only on one of the mentioned sources.

Turning now to studies which have a more normative perspective on cooperation, we first note that such studies are unusual if they exist at all. Usually such studies are not explicitly pursued but occur as part of a descriptive study. Sometimes they occur without their author noticing that the perspective has switched from a descriptive to a normative stance. When a normative perspective is explicitly assumed, it is usually done in one of the following three ways:

    (i)   Using a questionnaire or interviews to find the normative beliefs of a given group of people(i.e. a sort of descriptive approach to normative issues)

    (ii)   Some sort of conceptual argument by the author for a given normative position, c.f. the ideas of "ideal communication" put forward in Allwood (1976) and Habermas (1984).

    (iii)   Trying to find implicit norms in recordings of behavior or by observing what happens when hypothesized norms are broken, c.f. Garfinkel (1967).

In what follows we will make use of all three of these methods.

When it comes to the remaining two modalities, i.e. "possibility" and "necessity", the situation is same as with regard to normative/deontic studies Questionnaires and interviews can be used and observations of actual behavior can also be used but by far, the most common type of method would be some sort of analysis where the author by conceptual argument would try to convince the reader of what is possible or necessary.

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