Some Working Notes on

The Cognitive Representation of Attitudes and Prejudice [1]

Teun A. van Dijk

University of Amsterdam

1. Introduction

The aim of these notes is to speculate about the cognitive representation of attitudes. More in particular, I want to know how ethnic attitudes, or prejudices, are organized.

My theoretical point of view is current work on the representation of knowledge in the fields of cognitive psychology and artificial intelligence (AI: see Norman & Rumelhart 1975; Bobrow & Collins 1975; Schank & Abelson 1977). The main point in this research is that our knowledge about the world, as it is stored in long-term memory, is organized in various pre-programmed ways. Thus, our prototypical knowledge about towns, houses, cars, or schools is assumed to be organized in frames. These frames have hierarchical structures, with main propertie higher nodes and variable properties as lower nodes. Similarly, we have knowledge about stereotypical event-structures or episodes, organized in scripts. These too have a hierarchical organization, but at the feature "normal" participants, events, and actions in a particular order. "Taking a bus," "going shopping," and "eating in a restaurant" are examples of such scripts.

Frames and scripts, or similar schematic organizations of cognitive information, have been designed in order to account for various tasks in cognitive processing, such as understanding a

1 These working notes are a part of research going on in Amsterdam on (i) text processing in general--especially the role of scripts in story understanding (see den Uyl & Oostendorp 1980), (ii) the role of opinions, attitudes, and political knowledge in discourse understanding and memory, and (iii) discourse and prejudice about ethnic minorities in the Netherlands. Some of this work is (or will be) sponsored by ZWO (The Netherlands Organization for the Advancement of Pure Research, The Bague). Theoretically this paper is also intended as an extension of my earlier work, partly in collaboration with Walter Kintsch (University of Colorado, Boulder, USA), on discourse comprehension (e.g., see van Dijk 1977a,b, 1979, 1980; Kintsch & van Dijk 1978; and Kintsch & van Dijk, in preparation). The upshot of the extension of the KvD model is to make the model more relevant for actual reading and understanding processes (where beliefs and opinions are involved), and to be able to apply the model in the account of a number of important issues in social psychology and other social sciences, such as the nature and role of prejudice, manipulation, and control in processes of communication.

scene, an episode, or discourse (e.g., stories) about them. They allow us to assign internal structures to such scenes or episodes, even if the input information is not complete, or to derive expectations about properties of the scene or episode which are not (yet) observed. In a story, for instance, a script enables us to predict what kind of "normal" events may happen, usually as the background of the more interesting "new" events of the story (e.g., that X will pay for his meal and will leave the restaurant in a story about something occurring in a restaurant). Theories about frames and scripts are still in their infancy. We know little about the precise organization of such knowledge structures, and we know still less about the exact rules and strategies of their use. Clearly, it would be very ineffective if, during the understanding of an episode or a text, a full script would be activated and processed in short-term (working) memory: what we need is _relevant_ information, depending of the requirements of the (con)text. Similarly, it should be stressed that, although much of our knowledge is about prototypical or stereotypical objects and episodes, most situations require a more flexible, and not a fixed, kind of knowledge representation. These and other problems in the theory of knowledge representation will however not be discussed here.

Against this background of knowledge representation models and their use in cognitve theories of discourse understanding, I will attempt to explore another cognitive domain, namely, that of opinions and attitudes. The basic assumption is that these too must be organized in an effective way. Thus, we not only have knowledge about cars and nuclear energy, but also opinions and attitudes which allow us to quickly evaluate experiences and information regarding such objects or issues.

Most classical work in cognitive psychology assumed some principies of cognitive organization (e.g., see Stotland and Canon 1972; Himmelfarb and Eagly 1974; Fishbein and Ajzen 1975). However the cognitive theories involved were rather primitive. The central notion, phrased in different ways, was some kind of consistency (balance, congruence, consonance, etc.). Both formally and experimentally it has been difficult to make such notions explicit. The prevailing behavioristic perspective did not favor the development of a more sophisticated cognitive theory of opinions and attitudes. Instead of complex theories, most research was experimental and/or focused on the conditions and consequences of attitude formation and change. A full-fledged theory about the internal organization of opinions and attitudes was not developed. It seems obvious, though, that any serious model of the formation and transformation of opinions and attitudes presupposes insight into their cognitive organization. In a similar way as scripts are necessary in processes of understanding, complex opinion and attitude structures determine the ways we interpret episodes and texts and form "new" opinions. The same holds for the complex planning process for our (inter)actions, usually called "behavior" in the classical literature: only a sophisticated theory about the structures of

both attitudes and the planning and execution of action allows us to speculate about "behavioral effect" of attitudes.

This, then, is a brief sketch of some of the principies underlying this kind of cognitive model for the representation of opinions and attitudes. We will see that this model is not a straightforward extension of work in cognitive psychology and AI on knowledge representation. Actually, social psychology has neglected the results in her sister discipline of cognitive psychology, and the latter has hardly paid attention to the issues being dealt with in social psychology. And it is not simply a question of division of labor. It should be realized that our knowledge of the world is essentially a socially dependent cognitive structure: it is formed and used in processes of interaction and communication in social situations. This is not a trivial statement. Most work in this area is about cognitive constraints on understanding, such as memory limitations, fast strategies of production and retrieval, and so on, but not on the social constraints on the use of knowledge--such as pragmatic and interactional relevance. Exceptions are very recent (see below).

Instead of talking about attitudes in general, I will concentrate on a specific kind of attitudes, namely, ethnic attitudes or prejudices. These are chosen, first, because it makes sense to distinguish between different kinds of opinions and attitudes--which may have different organizational principles--and second, to provide a theoretical basis for my actual research about discourse and prejudices in relation to ethnic minorities in the Netherlands ("Surinamers," Moluccans, and immigrant workers from Turkey and Morocco). My examples will be drawn mainly from interview data (e.g., Esmeijer and Luning 1978) and other social research about racial discrimination in the Netherlands (e.g., Bovenkerk 1978). Other examples will be intuitively constructed in analogy to these and other data from the literatura on prejudice (Allport 1958; Simpson and Yinger 1972; Ehrlich 1973; Katz 1976, and work mentioned therein).

2. Knowledge and beliefs

The first step towards an adequate treatment of such reputedly vague notions as opinions and attitudes is to bridge the gap with the notion of knowledge. Thus, we not only have knowledge about the world, but also beliefs. In philosophy and logic there has been some formal work on the similarities and differences between these two notions (e.g., see Hintikka 1962; Phillips Griffiths 1967), but these attempts did not have psychological plausibility as their major aim. The major axiomatic difference between knowledge and belief, in this perspective, is that objects of knowledge are true and objects of beliefs need not be true (from an "objective" point of view). Another look at the difference stresses that beliefs are forms of subjective, individual knowledge, whereas knowledge is a form of justified, socially warranted belief, subject to a number of truth criteria--which may be variable for different groups, cultures, or periods.

In psychology and AI, it is mainly the work of Abelson (1973, 1979; Abelson and Carroll 1965) that has paid attention to such individual belief systems. In fact, the notion of "script" as used in Schank and Abelson (1977) derives from this work on beliefs (Abelson 1973). In a similar vein the recent work of Carbonell (1978) attempts to represent political beliefs and the inferences that may be derived from them. Abelson (1979) lists a number of features that distinguish beliefs from knowledge: (i) there is no consensus about beliefs, (ii) beliefs are often about the existence of entities (such as God), (iii) beliefs often involve "alternative worlds" (e.g., an ideal world), (iv) beliefs involve affective or evaluative components, (v) belief systems are more open, including more personal experiences, and (vi) beliefs can be held with varying degrees of certitude. This list is, as Abelson admits, more or less intuitive and incomplete. It does not derive from a systematic theory about belief structures: no specific model of such belief systems is given (see, however, Abelson, 1973). For instance, no distinction is made between personal and social beliefs. I personally may believe that John is ill
I will be rich some day, and on the other hand there are millions of people who believe in God. Similarly, one could distinguish between incidental beliefs (e.g., about John's being ill now) and more general beliefs. In fact, general social beliefs may be close to what we usually call knowledge. The cognitive system should allow, for instance, that we may derive incidental and/or personal beliefs from these more general and/or social beliefs.

Beliefs, like knowledge, are organized. We have higher-order and lower-order beliefs; some beliefs presuppose others or have specific consequent beliefs. Rokeach (1972) discussed some of the differences between "central" and "peripheral" beliefs. Roughly speaking, central beliefs have larger derivation or consequence sets: if someone believes in God, he will believe many other things (e.g., about properties and actions of God, etc.); but someone believing in the effectiveness of reducing car speed will have only a few further beliefs derived from that one (fewer accidents, less pollution). Beliefs themselves may have frame-like structure: our beliefs about God may be similar to our knowledge structure about the president. Typically, knowledge and beliefs often mingle. We have certain knowledge about nuclear energy, but at the same time hold certain beliefs (e.g., that it is difficult to control, that it is dangerous, pollutive, etc.). Since, as Abelson (1979) suggested, beliefs are often of an ontological nature or pertain to properties of cognitively relevant entities, they do not seem to organize in a script-like way, since scripts are essentially about episodes. Yet, here again, the distinctions are vague. Some episodes are based on beliefs and not only on knowledge, e.g., rituals (church services, initiation rites) and ritual-like episodes (parties, dinners, or lectures). In these cases participante engage in actions which they believe are necessary, wanted, preferable, good, acceptable, and so on, and which are to be performed in a certain, conventional order. Whereas, in general, beliefs may involve evaluations, such scriptal belief-

based episodes may involve norms (about what *should* be done).

3. *Opinions*

As the boundary between knowledge and beliefs appears to be fuzzy, so does the distinction between beliefs and opinions. For the sake of theoretical clarity--which need not correspond to everyday use--we might maintain that only opinions involve evaluations. In other words, beliefs are about the existence and nonevaluative properties of entities (e.g., "The Hague is the capital of the Netherlands," a false belief, or "Yogurt is made of milk," a correct belief).

Again, we may entertain personal and social opinions, specific and general ones. That I don't like John or beer, is a personal opinion; that traitors are despicable and that capitalism is bad, are examples of more general, social beliefs.

Evaluations of objects and events are given with respect to sets of (personal or more social) values. These sets are also (hierarchically) organized. Our opinions about the power of the president, thus, are subordinated to our opinions about the constitutionally established structure of out society. Just as in logical semantics, we may take the evaluations to yield two or three outcomes, e.g., "good," "bad," or "neutral." So, if the general proposition has a fixed value, its instantiations will be assigned the same value, ideally speaking (context free): if E(Nuclear energy may be used to solve our enery crisis)= BAD, then also E(The use of the Harrisburg plant is inevitable)= BAD, E being the evaluation function rather than a belief proposition. Of course, the first, general, proposition again depends on our general opinions about pollution and socially acceptable dangers. It is important, though, that the opinion system, thus based on general values and evaluation functions, allow us to handle incoming experiences and information and their resulting beliefs: reading about Harrisburg in the paper, forming a belief that the nuclear plant was dangerous, and then forming an opinion about the plant and the people responsible for its very existence and/or control.

Opinions are not only derived from general values but also from general *norms.* Whereas values are about good and bad properties in general, norms are more particularly about good and bad action, i.e., about what *should* and what should not be done, relative, of course, to a given culture and society   a type of social situation. That the Americans should have interfered in Afghanistan is such a norm-based opinion. It is derived from the more general opinion that the Americans should (always) interfere as soon as some outside power (e.g., the Soviet Union) threatens a national interest, which again may be a more specific case of the proposition that any person or state may defend itself against attacks by others. In other words, we here have a politically oriented system of *permissions* and *obligations,* yielding specific norm-evaluations: E (Americans intertere in Afghanistan)= P, where P is the valué "permitted" of the norm-evaluation function.

In other words, the belief p now gets the opinion form Pp, meaning "it is permitted that p," or even Op, meaning "it is that p" (for the political belief-system cf. Carbonell 1978).

Again, the norms and their deriving opinions are both personal and social, both specific and general, although we generally use the notion of norm only for more general and social beliefs about action.

Note also that both the value-based and the norm-based opinions may lead to a system of **preferentes.** Usually our values are not absolute, but measured relative to each other. "I do not like pears" may be relative because I may like pears more than bananas. Similarly, I may find it acceptable for the United States to interfere in Afghanistan, so long as such interference does not cause a third world war. (For logical and philosophical analyses of the notions of norm, **action** and **preferente** used here, see von Wright 1963 and Rescher 1967; see also later work inspired by them).

4. Attitudes

In the previous sections I have briefly summarized some properties of beliefs and opinions. The reason for those preliminaries is that I take attitudes to be organizing systems of **beliefs** and **opinions.** Attitudes, hence, are complex cognitive structures, dominating ordered sets of belief and opinion propositions. By definition, then, the proposition I do not like this apple cannot be an attitude, although several classical approaches attitudes allow this kind of possibility. The proposition just mentioned is a personal, specific opinion. Attitudes have a more general and more embracing nature. Traditionally, indeed, they are outfitted with beliefs, opinions, and conations (i.e., action dispositions). In my approach, first of all, I will leave out the conation component. The "underlying" motivations and planning of action should be dealt with separately. It is well known that we may have attitudes without acting upon them--or even act inconsistently with them--so talk about "predispositions," whatever they may be, is spurious. Of course this does not mean that the "action system" does not derive its information from the "attitude system" (henceforth A-system), but regards the use or **operation** of the A-system, not its internal organization.

Secondly, then, attitudes are general, higher-order organization forms for both beliefs and attitudes. Against the background of our definition of beliefs and opinions, this means that they are based on general beliefs, values, and norms. To repeat the example given aboye, we have both beliefs and opinions about nuclear energy, and these may be organized in a complex attitude towards it. In terms of the cognitive model briefly hinted at aboye, this means that our information and experiences in this domain will be matched against the A-system NE, yielding specific beliefs ("Harrisburg nearly exploded") and specific opinions ("Harrisburg is dangerous") in specific situations.

Thirdly, attitudes organize around a core. Intuitively speaking, the core is what the attitude is "about It is the cognitive concept which (itself or instantiations of it) features in the various belief and opinion propositions organized in the attitude. In the representation format, the core is the highest node in the schema. "Nuclear energy," "Communism," or "jogging" may be such core concepts. Yet, it could also be assumed that the core is not a single concept, but a proposition, e.g., "Nuclear energy is bad," "Communism is bad," or "Jogging is fine." In that case, the core, as the highest node, also representa the basic evaluation involved. I wonder, however, whether this is theoretically possible. First of all, the A-system also organizes beliefs, which by definition are nonevaluative. Second, attitudes may well organize "mixed feelings," i.e., both positive and negative evaluations. We may think that nuclear energy is good as a possible way of solving the energy crisis, but bad when we consider its effects on pollution. Hence, we will provisionally take the core to be a concept, not a proposition.

Fourthly, the core should be both cognitively and socially relevant. Although this criterion is difficult to define in a precise way, it means that we have attitudes only about concepts, or the objects/events denoted by them, which organize much of our thinking and social interaction. In other terms, they have important consequence sets, involving basic questions of our life, such as health, food, living, love, work, having friends, and so on. Thus, an apple cannot be the object of an attitude, because it does not organize our life in this way, whereas Fascism, free elections, or racial integration do constitute such possible cores. This may mean that what is an attitude core in one culture may not be in another. In New Guinea a pig may be an attitude core, and in our society a car may be one.

Fifthly, attitudes are ego-centered. We do not have attitudes about what others think about a core concept. An attitude typically organizes my beliefs and attitudes, even if these are shared with others. Altitudes may be viewed, therefore, as a partial social model, a naive theory, about my relations to an attitude core. Only in this way may an A-system allow a specific interpretation, perspective, or bias with respect to social objects and events. This is why traditional attitude theories often link such attitudes as "authoritarianism" or "tolerance" with "personality." I will not here discuss these kinds of relations between A-systems and other cognitive organizational principles; nor will I treat the links between attitudes and emotions. Clearly, however, since opinions are based on values and norms, and these may be closely linked to emotions, attitudes will often feature emotions. Thus, for example, we may fear the effects of nuclear energy, or we may love our country. It is unclear, however, what the precise cognitive status of emotions is: are they "simply" a measure or category for the strength of our evaluations, or a distinctive set of cognitive representations (love, fear, anger, etc.) of bodily situations in social contexts?

5. Prejudice

To be more specific, let us focus upon a specific kind of attitude, namely, prejudice. Prejudices have all the properties mentioned aboye for attitudes in general. Hence, they are general organizing systems of beliefs and opinions around a socially relevant core. The core in this case is people or groups of people. Now what are the cognitive specifics of prejudice with repect to attitudes?

A first feature, though a controversial one, is that prejudices are "wrong" from several perspectives. That is, we usually apply the notion only to those attitudes which people should not have. This means that they are, ethically or legally, incoherent with more general norms or laws. It also means that the beliefs involved may be unwarranted (e.g., "blacks are more criminal than whites," etc.), and that the opinions in them may be unfounded ("I just hate them").

A second feature is that the general propositions involved in them are overgeneralizations. In this case, specific, personal beliefs and opinions (warranted or not) are extended to general, social beliefs and opinions about the group as a whole, leading to stereotype. In this respect, then, prejudice is inductively "wrong": categories, rules, and general properties are derived on the basis of insufficient data. Clearly, this kind of feature characterizes much of our everyday, sloppy thinking. In the case of prejudice, since people are involved, this "normal" process may conflict with basic ethical norms.

Third, prejudice involves negative attitudes, meaning that most opinions and crucial opinions about the group are negative, even though single, second order properties may be positive ("Blacks are musical"; "Jews are smart"). It follows that we do not speak about "positive prejudice." (I hereby try to be consistent with the normal usage of the notion in everyday situations.)

Fourthly, prejudices not only have a core concept, just like attitudes, but also a core distinctive feature defining the group, such as features based, for example, on race, sex, age, status, social position, religion, etc.; that is, the system of prejudiced attitudes is organized around the very property of being black or a woman or a nonbeliever. Core features usually are inherent, essential, or more or less permanent. The negative evaluations of the prejudice system are typically linked to this core feature: "he is criminal because he is black," "she cannot think logically because she is a woman." In other words, the core feature has explanatory power: just like an axiom (which is an assumed basic truth needing no proof), it allows "derivation" of theorems.

So far so good. This is in a sense a reformulation in our framework of most classical views on prejudice. Let us, however, try to become more specific. We will thereby take ethnic prejudices as a more particular case. Their attitude core consists of

racial and/or cultural groups, quantitatively often a social minority; their **property** core consists of specific racial features (visible or not) or cultural features (such as a specific religion). (For further details, see Allport 1958.)

Ethnic attitudes--and sometimes prejudices in general--have a number of characteristic features. First of all, there is a **solidarity** feature. Unlike private beliefs or opinions, the prejudice holder believes that he/she shares the attitude with a group. Hence, prejudice is we-centered. "Not only do I dislike blacks from Surinam, but man white Dutch people do. I that "my" opinions, therefore, are not arbitrary, but at least semiconsensual, and hence justified. In the same way as the generalization from one or a few others leads to overgeneralization about the ethnic group, my beliefs and opinions are identified with those of the we-group. It is the we-group that feels menaced by the other group. The following xamples of typical attitudes are from Esmeijer and Luning (1978):

(1) Surinamers do not adapt themselves.
(2) Surinamers profit from our social system.

A second feature derived from this we-others categorization is the **difference** feature. "They" not on y ook ifferent, but eat and behave differently.

A third feature derived from the **we-others** categorization is an essential one, namely, that the difference is negatively interpreted:

(3) Their cooking stinks.
(4) They drive big cars and have expensive hi-fi sets.

Even more pronounced is the evaluation of their behavior as criminal: "they carry knives," "they act as pimps." This evaluation is purportedly justified with quasi-facts, i.e., beliefs about statistical "proof" of such facts: "we all know that ...," "the newspapers tell us that ...," "statistics show that ...."

Another special case of the difference assumption is inferiority: blacks are less intelligent, lazier, or in other ways "lower" than the (white) we-group. This principle acts as the main justification for discrimination: they have no equal rights because they are not equal to us.

Next, there are a number of features connected to norms regarding the group. The basic norm, both for "them" and for "us," is to keep distance: segregation, apartheid, is considered to be the ideal norm, and if this cannot be effected, they should be kept distant in their social contacts with us (housing, work, family-and-friend relations). More in particular, they should be sent back to where they carne from.

Given these examples of more or less general principies characterizing ethnic attitudes against black Surinamers, the schema allows both **predictive derivations** and **interpretations** of new

information. Having no jobs and yet driving big cars and having hi-fi sets implies that they cheat the social services, or earn their money illegally (as pimps or drug dealers). At the same time, the general beliefs act as premises in __implicit__ argumentations: criminal people may be despised, Surinamers are criminal, hence Surinamers may be despised. This provides the necessary coherence with other general beliefs or norms, e.g., that we should not despise people.

The few features mentioned aboye allow us to speculate about the __organization__ of the ethnic attitude (EA-)system. We have seen that beliefs and opinions, and hence attitude systems, are frame-like rather than scriptal. The hierarchical structure of prejudice against Surinamers may therefore have the following form:

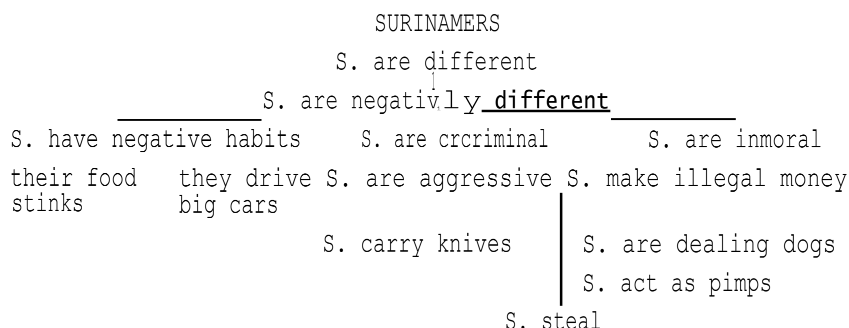

Fig. 1. A hierarchical structure of prejudice.

The hierarchy is, however, as we saw before, not a simple (directed tree-) graph: driving a big car not only instantiates different habits, but at the same time the criminal node of making illegal money. There are mutual internode links which assign more structure and hence more cognitive solidity to the system.

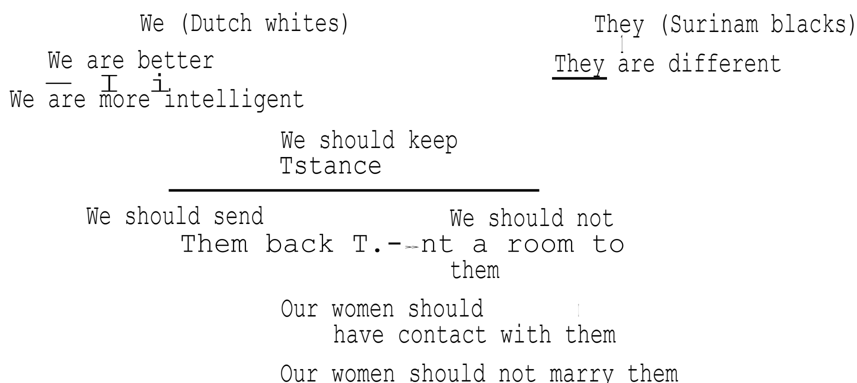

Fig. 2. Prejudice and social relations.

There is a qualitative lack in the representation of figure 1. It considers only feature properties of Surinamers, not "our" social relations to "them," and the norms about these relations. Hence, we should at least use the form illustrated by figure 2. Note that this figure is only a prototypical representation of our ethnic attitude. It does not feature the <u>processes</u> in which this information is used, e.g., in the understanding of events or discourse about events or in the planning of actions.

6. The <u>problem</u> of <u>representation format</u>

Although we now have a first, very modest idea about both the typical contents and the organization of ethnic attitudes, the representation model is still highly primitive. The heirarchical structure is defined in terms of generality vs. instantiation (specificity), and cross-links may exist between nodes of different branches. Yet, the relational properties (e. g., between we and they) do not come out well in this way (they are either below the we or below the they node). If we would, however, simply use a <u>labeled</u> network, with a fragment like the following one, we loose the hierarchical structure which permits the derivation of more specific facts.

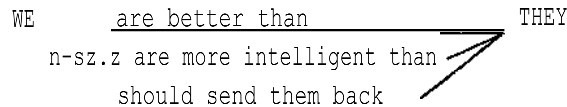

Fig. 3. An alternative representation of relational properties.

What other models of representation are available that would allow us to have an effective and psychologically plausible organization and use of ethnic attitudes? Since we are not dealing with episodes (although there may be episodes with ethnic participants), a scriptal representation does not seem appropriate. Another possibility would be the use of a logical metaphor; we already mentioned that we have certain axiomatic beliefs and opinions (values, norms) from which more specific ones may be derived, namely, as theorems of the system. Interesting would be the semantic interpretation of such a system. In terms of formal model theory (e.g., see Hughes and Cresswell 1968) such a semantics may be formalized as follows: (interpretations are given with respect to an ethnic model structure, featuring the following items as examples):

(i) a set of people P, (T for target) (i.e., they)
(ii) a set of people n (S for source) (i.e., 1.7E)
(iii) a special element of P_S, <u>I</u> (viz., the actual holder of the attitude system)
(iv) a set of properties of P_T, G
(v) a special element of G: h, Tviz., the core property of G)
(vi) a set of social situations, S
(vii) a special element of <u>S</u>, s_o (viz., the actual interactional situation)

Relations between P and P may be defined as a set of pairs of the two sets. The same for the actions of we or they in the social situations. Note that this model structure is special case of a more general model structure as it is used in formal semantics. Instead of possible worlds we have social situations, and the set of individuals is limited to (two) groups of individuals. The model structure, as we said, is, so to speak, an abstract picture of states of affairs in ethnic situations. Together with a specific evaluation function, E, which we discussed earlier, it yields an ethnic model, which allows interpretations of all kinds of viz., sentences or scenes and their meanings (propositions). Thus if some individual x, is an element of P_T, and if the core property g of G is being a Surinamer (or black), and if x "drives in a big car," then E(x drives in a big car, s ,I)= BAD holds if--when the propositio s true, or rather is béliéved to be true by I--this property of x, is an element of G, and if there is a thé orem specifying that Tall of) this property of G is bad.

Although this formal system may still be refined, it should be stressed--if it is correct at all--that it merely specifies the formal structure of ethnic interpretations, i.e., evaluations, the ormation of opinions about certain information. The rich and empirically more interesting contents of, for example, the set G are not captured by the model. This means that in a sense we aré back to where we started, because psychologically and sociologically these are the interesting properties of prejudice.

It may be concluded, therefore, that at the moment we seem te lack an appropriate figurative or formal model for an adequate representation of ethnic attitudes, as well as of the processes that are involved in ethnic interpretations or evaluations. Resides further empirical research about the contents of such a representation model we should continue our work on the properties of the model itself.

7. Prejudice and discourse

Prejudices are formed and express themselves in various ways. Language use and discourse are important in these processes. Our information about Surinamers, for example, is based not only on personal experiences, but also on what we hear from friends, what we read in the press, and what we learn at school. Similarly, prejudices are the basis for discriminatory action, and they also underlie prejudiced discourse.

The links between ethnic attitudes, discriminatory action, and discourse are complex. It is well known that people may say that they do not discriminate, but yet do so in actual behaviour conversely, they may profess prejudiced opinions and in a particular situation not discriminate. One of the reasons for this is that underlying motivations and plans for action are based not only on beliefs and opinions about ethnic groups, but also on the now relevant and preferred goals. If the owner of a nightclub has a

lack of customers he may well admit blacks--even if he is prejudiced against them, and even if in other situations he would not admit them. Similarly, what is asserted in context-free discourse ("Would you admit blacks...") may be overruled by context-bound norms and regulations, e.g., a law against discriminatory acts.

One problem, then, is how we should interpret context-bound discourse about ethnic minorities. If in a situation a police officer openly asserts that Surinamers are aggressive and criminal, can we infer that he has prejudiced beliefs? And even if he has not made such an assertion in so many words, are there any other properties of discourse which may warrant such an inference? Obviously, these questions cannot be answered straightforwardly. The very complexity of attitude systems, and hence also of prejudices, requires that inferences depend on several kinds of data, so that the essential principies of prejudice systems can be derived--or used as explanations of the specific discourses. In the second case we should elicit data in informal situations so that the powerful superstructure of social control is minimized in its effects on what is said.

Leaving these problems aside for a moment, there is another aspect of the relations between prejudice and discourse, namely, that of **understanding.** It was mentioned at the beginning that to understand a text we should have world knowledge in order to fill in the "missing propositions" or in general to relate what is said with what is possible or plausible in a specific situation. Something similar may be said for beliefs, opinions and attitudes. In other words, a reader/hearer who has a system of ethnic attitudes will assign interpretations to the discourse (a newspaper story or an informal story during conversation) that are a function of that system. Let me briefly spell out what these dependencies are.

(1) Interference of "missing links," that is, propositions necessary to make a text, such as the following, coherent: "John has been stabbed. There was a Surinamer in the same café." This text is coherent if the second sentence has the function of an explanation. The explanation only holds, however, if the assumption is made that the Surinamer had a knife, and such a premise can be used only if the general belief is accepted "Surinamers carry knives" and "Surinamers are aggressive."
(2) Prediction of following events ("expectations"). In a story where it is described that Surinamers gather in a café, it will be expected, with this prejudice system, that trouble may arise (e.g., a stabbing). These expectations will influence the interpretations of the following sentences in the story. That is, if indeed trouble arises, it will be assumed that the trouble is caused by the Surinamers (as in point (1)).
(3) Construction of themes (macrostructures) of the text. Depending on several factors, language users will try to construct a global meaning of a text: the theme or upshot. This theme indicates what is most relevant, prominent, or important. For a reader/hearer with ethnic attitudes as described aboye, a text with a theme A (as intended by the speaker) may well be

assigned a theme B. Thus, if a newspaper reports that groups of Turks occupy a church in order to demonstrate against a law regulating illegal work by foreign workers, the demonstration theme or the unjust law theme may well be superseded by the theme "Turks are trouble-makers," "Turks do not adapt to our laws," or something similar. In fact, although much newspaper reporting in the Netherlands is relatively liberal and antidiscriminatory regarding ethnic minorities, the very association of the concepts "ethnic minority" and "trouble" or "problem" may lead to the global interpretation "Ethnic minorities cause trouble." The problem with this type of interpretation is that it has been shown experimentally that the themes (macrostructures) of a text are stored in and retrievable from memory. Hence, they are the basic information which will lead to the formation of beliefs and are essential for the construction of plans for future action. To wit: some days after the reporting of the Turk occupation of the church (approved by the church authorities) a group of young neo-Facists raided the church and beat up some of the Turks.

We see from these few examples that both the local and the global interpretation of discourse is governed also by an ethnic attitude system, much in the same way as it is controlled by our knowledge system. Interestingly, in those cases where knowledge is lacking, the attitude system may "take over" and supply the missing information or the additional information. This is possible because, by defintion, ethnic prejudice involves (unwarranted) generalizations, from which specific "facts" may be inferred.

Finally it should be recalled that the prejudice system not only provides a basis for the "semantic" interpretation of the text, but also for the evaluation of the information. That is, each proposition may yield a value, "good" or "bad" (or some neutral value). This value is one of the essential criteria underlying the process of acceptance of the information. We may well understand what a speaker is saying and meaning, and we may eventually "distort" these intentions/meanings due to our knowledge and prejudice, but this may also lead to a cognitive change (intended or not), namely, of out beliefs or of our opinions. Thus, if someone reads about or hears a policeman saying that Surinamers are aggressive, a prejudiced person may directly believe the information, that is, add it to his belief system. A nonprejudiced, critical person may either doubt whether the information is true (e.g., because he has a prejudice against policemen), or assume that the aggressiveness is caused by the specific behavior of policemen against black Surinamers. In that case the proposition "Surinamers are aggressive" is not simply added to the belief system, but at most a more complex proposition such as "The behavior of the police causes Surinamers to be relatively aggressive." We here touch upon the important aspects of the effects of discourse on cognition and, indirectly, on interaction.

but yet may lead to prejudiced beliefs and opinions because of an

existing prejudice system that may reinterpret and evaluate a given text in a different direction. Needless to say, many other factors, not discussed here, such as the other cognitive/emotional properties of the reader/hearer and his goals, tasks, and interests,--as well as the properties of the whole socioeconomic context--will play a role in this complex process of prejudiced beliefs and opinions. Neither these processes themselves nor these other factors are discussed here. It is important, though, to repeat that insight into these processes presupposes insight into (i) the internal structures and contents of the ethnic attitude system and (ii) the ways discourse production, understanding, and evaluation are controlled by such a system. Our research program in the coming years should be generated towards the explication of these two important issues.

References

Abelson, Robert P. 1973. "The structure of belief systems." In Computer models of thought and language, ed. by R.C. Schank and K.M. Colby. P157 287-340. Mana: Freeman.

______. 1979. "Differences between belief and knowledge systems." Cognitive Science 3:355-66.

______ and J.D. Carroll. 1965. "Computer simulations of individual belief systems." American Behavioral Scientist 8:24-30.

Allport, Gordon W. 1958. The Nature of prejudice. Garden City: Anchor Books.

Bobrow, Daniel G. and Allan Collins, eds. 1975. Representation and understanding. New York: Academic Press.

Bovenkerk, Frank, ed. 1978. Omdat zij anders zijn. Patronen van rasdiskriminatie in Nederland Because they are different Patterns of racial discrimination in the Netherlands]. Meppel: Boom.

Carbonell, Jr., Jaime G. 1978. "Politics: automated ideological reasoning." Cognitive Science 2:27-51.

van Dijk, Teun A. 1977a. Text and context. London: Longman.

______. 1977b. "Semantic macrostructures and knowledge frames in discourse comprehension." In Cognitive processes in comprehension, ed. by M. Just and P. Carpenter. rM-3-377 Híiísdale, Erlbaum.

______. 1979. "Recalling and summarizing complex discourse." In Text processing, ed. by K. Hblker and W. Burghardt. Pp. 49-118 Berlin/New York: de Gruyter.

______. 1980. Macrostructures: an interdisciplinary study of global structures in discourse, interaction and cognition Hilisdale, N.J.: ErTblum.

Ehrlich, Howard J. 1973. The social psychology of prejudice. New York: Wiley.

Esmeijer, Loek and Margreet Luning. 1978. "Surinamers in the ogen van de Amsterdamse politie." [Surinamers in the eyes of the Amsterdam police]. In Bovenkerk 1978. Pp. 136-65.

Fishbein, Martin and Icek Ajzen. 1975. Belief: attitude; intention and behavior. Reading, Mass.: AddisW1WElley.

Himmelfarb, Samuel and Alice H. Eagly, eds. 1974. Readings in attitude change. New York: Wiley.

Hintikka, Jaakko. 1962. Knowledge and belief. Ithaca: Cornell University Press.

Hughes, G.E. and M.G. Cresswell. 1968. An introduction to modal logic. London: Methuen.

Katz, Phyllis A. 1976. Towards the elimination of racism. New York: Pergamom.

Kintsch, Walter and Teun A. van Dijk. 1978. "Towards a model of discourse comprehension and production." Psychological Review 85:364-93.

______ and ______. (In preparation). Strategies of discourse comprehension.

Norman, Donald A. and Rumelhart, David, eds. 1975. Explorations in Cognition. San Francisco: Freeman.

Phillips Griffiths, A., ed. 1967. Knowledge and belief. London: Oxford University Press.

Rescher, Nicholas, ed. 1967. The logic of decision and action. Pittsburgh: Pittsburgh University Press

Rokeach, Milton. 1972. Beliefs, attitudes and values. San Francisco: Jossy Bass.

Schank, Roger C. and Robert P. Abelson. 1977. Scripts, plans, goals and understanding. Hillsdale, N.J.:Erlbaum.

Simpson, G.E. and J.M. Yinger. 1972. Racial and cultural minorities. 4th ed. New York: Harper and Row.

Stotland, Ezra and Lance K. Canon. 1972. Social psychology. Philadelphia: Saunders.

den Uyl, Martijn and Herre van Oostendorp. 1980. "The use of scripts in text comprehension." In Story comprehension, ed. by T. A. van Dijk. Poetics 9, nos. 1-3.

von Wright, Georg Henrik. 1963. Norm and action. London: Routledge and Kegan Paul.