

Remembering What One Knows and the Construction of the Past: A Comparison of Cultural Consensus Theory and Cultural Schema Theory

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ABSTRACT *Cultural consensus theory and cultural models theory present distinct perspectives about the nature of individual and cultural knowledge. Anthropologists have not really explored the implications of these differences, nor have they examined these differing perspectives in situations where both are plausible alternatives. Through an analysis of patterns in how individuals diagnosed with diabetes and living in an Anishinaabe (Ojibway) community talked about diabetes and the judgments they made about the relevancy of culturally plausible illness causes, I find, for this data set at least, that cultural models theory provides a better fit. Nevertheless, cultural consensus analysis played a critical role in this determination. Some ideas about the nature of collective memory are examined in light of my findings.*

Remembering, through acts such as narrating a personal experience or relating what one knows about something, is integral to everyday communication. As individual instances of remembering take form in social settings and are constituted using cultural material, they provide an arena for exploring the relationship between individual and cultural understandings. In this article, I examine two prominent cognitive theories using data obtained in interviews with individuals who have been diagnosed with diabetes and who are living in an Anishinaabe (Ojibway) community. The two theories—cultural

consensus theory (Romney et al. 1986) and cultural models theory (e.g., Strauss and Quinn 1997)—present distinct perspectives about the nature of individual and cultural knowledge. These two theoretical positions have developed relatively independently of each other. Anthropologists have not really explored the implications of these differences, nor have they examined these differing perspectives in situations where both models are plausible alternatives. In this paper, using responses to systematically collected data amenable to cultural consensus analysis, as well as qualitative interview data of the type commonly relied upon by cultural model theorists, I attempt such an assessment. Here, the focus is on the relationship between how individuals talk about their own case of diabetes and judgments made about the relevance of culturally plausible explanations for diabetes. I also examine some ideas about the nature of collective memory in light of my findings and suggest that generally shared cultural understandings can be considered a form of collective memory; resources variably used by individuals in reconstructing the past and making sense of the present.

In recent years, the prevailing implicit acceptance of a theoretical separation between the study of mind and the study of culture has come under increasing challenge within both psychology and anthropology (e.g., Bruner 1990:12; Cole 1996; Hutchins 1995; Shore 1996; Strauss and Quinn 1997). The position taken here is that an adequate account of individual cognition cannot be achieved without what has been called a “cultural theory of mind” (Cole and Engeström 1993:42) or an “ethnographic conception of mind” (Shore 1996:10). An understanding of remembering requires integrating the study of culture with the study of mind (Garro in press b). Everyday activities, like remembering one’s past and recalling what one knows about something and relying on this information to make sense of the present, have the potential to illuminate interrelationships among cognitive processes, personal knowledge, cultural understandings, and social context.

The two theories to be contrasted here are both cognitive anthropological theories. In his synthesizing book, *The Development of Cognitive Anthropology*, D’Andrade (1995) links the start of the field of cognitive anthropology with the beginning of the “cognitive revolution” in the late 1950s. After a “long cold winter of objectivism” and the domination of behavioristic theories, the cognitive revolution “was intended to bring ‘mind’ back into the human sciences” (Bruner 1990:1). However, before turning to developments in cognitive anthropology, it is germane to the scope of this article to briefly discuss two scholars, Halbwachs and Bartlett, who, in the first half of the 20th century, proposed theories attesting to the social nature of remembering.

THE SOCIAL NATURE OF REMEMBERING

Bartlett, a psychologist, initially intended to investigate remembering as an individual-level cognitive activity. His scope broadened, for “it soon appeared that, in numerous cases, social factors were playing a large part” (Bartlett 1932). Starting from the premise that remembering “is a function of daily life, and must have developed so as to meet the demands of daily life” (Bartlett 1932:16), Bartlett reasoned that in “a world of constantly changing environment, literal recall is extraordinarily unimportant” (1932:204). He rejected the common-sense “storehouse” view conveyed by the term *memory* (1932:200). Rather than theorizing mind in structural terms, Bartlett emphasized cognitive processes situated in everyday life, maintaining that “it is fitting to speak of every human cognitive reaction—perceiving, imaging, remembering, thinking and reasoning—as an *effort after meaning*” (Bartlett 1932:44, emphasis in original). *Schema* was the term proposed for these dynamic and constructive processes organized by this “effort after meaning.” Schemas are not static; they are “living and developing” (Bartlett 1932:214) generic mental representations that actively incorporate incoming information and are modified by new experiences. Our understanding of new information is influenced by what we already know; interpretations are actively constructed to make sense in terms of prior knowledge and experience. Similarly, what is remembered “depends on what we now believe as well as on what we once stored” (Neisser 1988:49). A theoretically central notion is that of “attitude,” which Bartlett rather amorphously characterized as: “a complex psychological state or process which it is very hard to describe in more elementary psychological terms,” but which is “very largely a matter of feeling, or affect” (Bartlett 1932:206–207). For Bartlett, attitude is an orienting and permeating characteristic of cognitive activity and is at once personal and social. Motivation, interests, and values all interact with attitude to “direct the course and determine the content” of cognitive activities (Bartlett 1932:33). As what is meaningful, emotionally engaging, and/or familiar varies across different contexts, Bartlett acknowledged the importance of “social influences” on cognition. By participating in social and cultural groups, individuals develop an “active tendency to notice, retain and construct specifically along certain directions” (Bartlett 1932:255).

Halbwachs (1980:33), a student of Durkheim, advanced the claim that purely individual memory does not exist as even “our most personal feelings and thoughts originate in definite social milieus and circumstances.” Individuals, through memberships in social groups, as speakers of a language, but more particularly in delimited social milieus arising through groupings created by families, religious societies, and

social class, participate in the “collective memory” and acquire the “social frameworks” that individuals rely upon when they remember (Halbwachs 1992). Just as the groups that individuals participate in within a society differ, there is diversity among individuals that can be accounted for by “a combination of influences that are social in nature” (Halbwachs 1980:48). The “mind reconstructs its memories under the pressure of society” (Halbwachs 1992:51) such that the “past is not preserved but reconstructed on the basis of the present” (Halbwachs 1992:40):

Most of the time, when I remember, it is others who spur me on; their memory comes to the aid of mine and mine relies on theirs. There is nothing mysterious about recall of memories in these cases at least. There is no point in seeking where they are preserved in my brain or in some nook of my mind to which I alone have access: for they are recalled to me externally, and the groups of which I am a part at any time give me the means to reconstruct them, upon condition, to be sure, that I turn toward them and adopt, at least for the moment, their way of thinking. But why should this not be so in all cases? [Halbwachs 1992:38]

Around the same time as Bartlett and Halbwachs, other prominent scholars (e.g., Wundt, see Cole 1996) developed frameworks directed at advancing the study of how culture interrelates with psychology. Sapir’s (1985a and 1985b) theorizing on the psychological and the cultural may also be seen in a similar light. But these innovative proposals, including the ideas of Bartlett and Halbwachs, were not actively pursued in the following years. Halbwachs’s ideas have received little attention until quite recently. The ascendance of behaviorism and verbal learning theory in psychology led to the virtual neglect of Bartlett’s ideas until the mid-1960s. Since then, Bartlett’s fundamental claim that remembering is best understood as typically reconstructive rather than as simply reproductive has become a central plank of contemporary cognitive theory. However, this idea has usually been divorced from Bartlett’s concern with the broader social contexts that characterize remembering in everyday life.

Notwithstanding the radically different “social frameworks” orienting the thinking of Bartlett and Halbwachs, both situated remembering in the current of social life. Using the term *remembering* in this article highlights the constructive and situated nature of human cognition. In the spirit of Bartlett, *remembering* is not used to refer to a demarcated and distinctive cognitive process clearly separable from affect and from other cognitive processes (e.g., perceiving, reasoning, imagining, or thinking). Nor can it be understood apart from particular persons positioned in time and space. *Remembering* is used in a broadly inclusive manner to further an exploration of interrelationships among cognitive processes, personal knowledge, cultural understandings, and social context.

THE STUDY OF COGNITION IN ANTHROPOLOGY

Formulated early in the cognitive revolution, Goodenough's definition of *culture* as "whatever it is one must know in order to behave appropriately in any of the roles assumed by any member of a society" (1957:167) has motivated much research in cognitive anthropology (see Quinn and Holland 1987:4). In 1995, D'Andrade characterized the basic problem of cognitive anthropology as understanding "how cultural knowledge is organized in the mind" (1995:248). Describing and representing aspects of the way the world is understood to be within particular cultural settings, as well as intracultural variation in and the social distribution of cultural knowledge, are central and ongoing projects within the field (though, by no means, the only ones). This does not mean, however, that there is agreement on how such work is to be carried out. Depending on whether the domain being investigated is that of kin terms, plant names, or concepts of social justice, cognitive anthropologists have advanced different theories about the nature of cultural knowledge (D'Andrade 1995).

In terms of psychological theories of memory, this general research orientation of much of cognitive anthropology can be seen as related to efforts to understand what psychologists have referred to as semantic memory. *Semantic memory* can be characterized as "knowledge of the world that is independent of a person's identity and past" (Tulving 1983:9). *Semantic memory* is often contrasted with *episodic memory*, which can be broadly defined as "the recording and subsequent retrieval of memories of personal happenings and doings" (Tulving 1983:9). Although the psychological import of episodic and semantic in terms of separate memory systems (or cognitive structures) is contested, the distinction is seen as having heuristic value in that it provides a useful way of classifying different types of knowledge (Mandler 1985). Nevertheless, within psychology, interest in what is referred to as "autobiographical memory" has proliferated since the 1980s (e.g., Rubin 1986, 1996) along with claims that reference to autobiographical memory is more appropriate than episodic memory when talking about "the capacity of people to recollect their lives" (Baddeley 1992:26). Referring to the distinction between semantic and episodic or autobiographical memory, D'Andrade observed that culture seems to have its greatest effect on semantic memory (1995:217). Even so, these terms are not commonly used by anthropologists, perhaps because there has been little attention to the cognitive and/or psychological dimensions of the remembering of personal experience (for exceptions, see Cain 1991; Garro 1994, in press a, in press b; Mathews et al. 1994; Young 1995).

In contrast, a recurring theme across much of the cognitive anthropological literature is a commitment to describing and representing

cultural knowledge in a manner compatible with what is known about human cognition. In an article on the “cultural part” of cognition, D’Andrade defined *culture*, in semantic memory terms, as a “socially transmitted information pool” (1981:181), which serves as the “source of most of the shared representations and procedures with which we do our thinking” (1981:193). From this starting point, he noted that the cognitive anthropologist “wants to know how cultural information is constrained and shaped by the way the brain processes such information,” while the cognitive psychologist “wants to know how the machinery of the brain works on all types of information, including cultural information” (D’Andrade 1981:182). Although D’Andrade notes some difficulty with this neat separation (1981:193–194),¹ this division into two unequal parts—with anthropologists responsible for the cognitive organization of culturally variable content and other cognitive scientists responsible for the more fundamental task of delineating universal cognitive processes and structures—has been cited as a reason for the marginalization of anthropology in cognitive science. If culture is conceptualized as “simply a pool of ideas that are operated on by cognitive processes” (Hutchins 1995:353), detailing how contents vary across cultures has relatively little to contribute to an understanding of human cognition (cf. Shore 1996:22). Calls to reconsider the role of culture in forming the mind have surfaced in several places (e.g., Cole 1996; Hutchins 1995; Shore 1996; Shweder 1990). This issue will be revisited later in this article after a presentation of the findings. But before turning to a description of the research, I introduce the two theories to be compared.

CULTURAL CONSENSUS THEORY

Cultural consensus (Romney et al. 1986) refers to both a theory and a formal mathematical model for “estimating how much of a given domain of culture each individual informant ‘knows’ (called cultural competence in the theory), as well as estimating the ‘correct’ cultural response to each question that can be asked about the particular domain of culture under consideration” (Romney 1994:268–269). “The theory assumes that culture exists in the minds of members of the culture and that there is variability among individuals in how much they actually know about various aspects of the culture” (Romney 1994:269). The distribution of knowledge across informants with regard to cultural domains—the “smaller, coherent segments of the total information pool constituting culture”—may reflect differential opportunities to learn about the cultural domain in question (Romney et al. 1986:314; see also Boster 1985; Garro 1986). Given the existence of intracultural variability, cultural consensus theory was “motivated by the observation that when an anthropologist goes to a new

culture and asks questions, neither the answers to the questions nor the cultural competence of the informants is known" (Romney et al. 1987:163). Pointing to the "need to find more objective ways to investigate culture" (Romney et al. 1986:314), cultural consensus theory "helps describe and measure the extent to which cultural beliefs are shared. . . . If the beliefs represented by the data are not shared, the analysis will show this" (Romney 1999:S103). For cultural domains characterized by high agreement across informants, it is not necessary "to have large samples to objectively ensure that we are confident of the answers" (Romney et al. 1986:333). This theoretically derived implication is of considerable pragmatic significance, since anthropologists often rely upon a small number of informants.

As explained in the original article introducing the cultural consensus model, "The central idea in our theory is the use of the pattern of agreement or consensus among informants to make inferences about their differential competence in knowledge of the shared information pool constituting culture. We assume that the correspondence between the answers of any two informants is a function of the extent to which each is correlated with the truth" (Romney et al. 1986:316), where "truth" refers to the "culturally correct answers" (Weller and Romney 1988:75). The cultural consensus method can be used to analyze certain types of systematically collected data (e.g., true-false, fill-in-the-blank, rank-order, and multiple choice) as long as certain assumptions are met, for example, that the questions asked draw upon a coherent cultural domain shared across informants. When applied to a set of data, the formal mathematical model sets "explicit criteria for whether or not a given set of data satisfies the assumptions of the model" (Romney 1994:273).

My research comparing cultural knowledge about illness among curers and noncurers (subsequently referred to simply as the curer study) carried out in Pichátaro, a village in west-central Mexico, provides an illustration of how the insights underlying consensus theory can be used to assess both sharing and patterned variation (cf. Garro 1986).² Ten women locally recognized as actively practicing *curanderas* (curers), with a mean age of 53 years and a like-sized comparison group of women who did not engage in curing other than routine treatment within the immediate household (noncurers), mean age of 46 years, answered "yes" or "no" to a series of 396 questions. The interview format was constructed by systematically placing each of 18 illness terms within 22 question frames about illness. Both the question frames (e.g., Can _____ come from anger?; When you get wet, can you get _____?) and illness terms (*mal de ojo* [evil eye], *pulmonía* [pneumonia]) were derived from earlier informal interviews about illness (see Garro 1986 for more details). The basic research question was whether the *curanderas* "validate their curing

functions by commanding a specialized, esoteric body of knowledge about illness and its manifestations, or rather, does their practice depend upon specific skills in the implementation of a more or less shared body of knowledge" (Garro 1986:352–353)? Only for this latter situation would shared cultural knowledge about illness be expected.

Consensus analysis is based on factor analysis of the matrix of response matches among informants after a mathematical correction for guessing. There are two mathematical criteria important to the initial determination of whether the responses given reflect shared knowledge in the sense that "whatever the cultural reality is, it is the same for all informants in the sample" (Romney et al. 1986:317). First, the factor analytic solution will contain only one major factor, indicating there is enough agreement on what the "correct" answers are to infer that informants are mostly responding similarly to each other. For this assumption to be supported, the amount of variance accounted for by the first factor, representing concordance among respondents, should be several times more than that accounted for by the next largest factor (known as an eigenvalue ratio), with the amount of variance contributed by all remaining factors being relatively small. An eigenvalue ratio for the first and second factors of at least three-to-one suggests that there is enough agreement within the group to support the assumption of shared knowledge.³ For the curer study, the first factor accounted for a rounded value of 89.6 percent of the total variance, the second factor only 6.2 percent, and the third factor 4.2 percent, with the program reporting a first-to-second eigenvalue ratio of 14.562 and a second-to-third eigenvalue ratio of 1.46.

A second criterion is that the individual factor loadings on the principal factor should have all positive values. In the curer study, these individual values range from 0.40 to 0.85. The mean consensus value of 0.68 (with a standard deviation of 0.12) can be interpreted as indicating, after a correction for guessing, that participants "knew," on average, the culturally shared answers for approximately 68 percent of the questions (without the correction, approximately 84 percent of the responses given are consistent with shared understandings). Taken as a whole, the data from the curer study fit the cultural consensus model quite well and support a conclusion that there is a high level of sharing in cultural knowledge about illness among curers and noncurers.

Patterned variation, however, was also anticipated as I advanced a cultural learning hypothesis that curers would share more knowledge about illness because they have more experience dealing with and communicating about illness (compare Boster 1985). In terms of the cultural consensus model and its claim that "the more knowledge people have, the more consensus we observe among them" (Romney 1994:271), the specific prediction was that curers as a group would have higher loadings on

the consensus factor than noncurers. And, indeed, the mean consensus of 0.744 for the curers is significantly higher than the 0.63 value for the noncurers (two-tailed T-test, $2.24 p < 0.04$). In addition, although not anticipated in advance, visual inspection of the data suggested that the extent of sharing might be related to age, with the older half of the sample (those over age 50) sharing more knowledge about the domain than the younger half.⁴ Although this pattern was not part of the original hypotheses, it can be examined in an exploratory fashion by presenting the mean consensus values of 0.628 for the younger group and 0.746 for the older group (two tailed T-test, $2.34 p < 0.03$). Since curers tend to be older, the effects of age and curerhood are confounded in these data (six of the ten individuals older than 50 years are curers). Nevertheless, as both being a curer and increasing age are associated with more experience with, and thus differential opportunities to learn and communicate about the domain of illness, these findings are consistent with the cultural consensus model.⁵

What, then, can be said about the view of cultural knowledge that underlies the cultural consensus model? As noted earlier, throughout their writings, Romney and his collaborators rely upon the "socially transmitted information pool" analogy and can be seen as concerned with the kind of knowledge about the world that is captured by the concept of semantic memory. The questions asked by an anthropologist tap into what informants know and are structured so that comparable information across informants is obtained. Cultural consensus theory provides a methodology for assessing the extent to which an individual informant can be relied upon as a guide to the cultural knowledge pool associated with specific domains. The orientation is not to portray knowledge (or semantic memory) at an individual level, but to strive towards the best possible representation of collective knowledge about a domain. It is not a case of representing what an individual knows but of determining "how accurately can the informant report knowledge about a given domain of culture" (Romney 1994:269). If the underlying assumptions of the consensus model are met, and if an appropriately sized sample is asked (which will vary as a function of the level of agreement), the aggregate will converge upon the culturally "correct" response (suggesting that responses not in agreement are "culturally incorrect"). At times the discussion comes close to adopting an idealized perspective of what a hypothetical "omniscient informant" would know (to borrow a phrase from Boster 1985). Although couched at a cultural level, cultural consensus harkens back to the "storehouse" view of memory that Bartlett rejected.

Cultural consensus methodology is seen to provide a means for anthropologists to gain access to the socially transmitted and shared information pool, as well as to enable us "to pick out our best (most competent) informants in each area of culture" (Romney et al. 1986:333). Variation

among informants is conceptualized in terms of more knowledge or less knowledge about a specified domain. Analogous to performance on a test, the less knowledgeable are those who deviate the most from the consensus responses, and the most knowledgeable are those who best represent the consensus responses. While differential opportunities to learn as well as “a distinct set of social and psychological characteristics” (D’Andrade 1987:195) are used to explain variation across informants, the cultural content itself can be discussed and represented independently of cognitive processes.

Boster (1987:152) has characterized this model of cultural knowledge as one that assumes “discrete, independent chunks that can be counted and correlated.” While this is a portrayal of a methodological or analytic strategy (and some researchers frame the discussion of their findings in this manner), this statement is open to misinterpretation with regard to underlying cultural knowledge. In the case of the “yes-no” questions in the curer study, for example, the model of acquisition is not one where individuals acquired the knowledge used to answer the questions by learning about the intersection of each illness term and question frame independently. In earlier analyses of illness understandings using true-false questions, D’Andrade (1976) and D’Andrade et al. (1972) pointed out that it was unlikely that informants stored in memory information about the truth or falsity of enormous numbers of statements about illness. Rather, as D’Andrade (1976) has suggested, it is more cognitively realistic to expect that knowledge about an illness or any other cultural domain is stored in terms of propositions, or in other ways of representing conceptual relationships that have the generative or productive capacity to answer novel questions and make inferences. Within the context of the curer study, I suggested that learning more about a domain provides opportunities for the propositional knowledge base to become more differentiated. The data supported an interpretation that the individuals with higher consensus values used generally shared cultural understandings about illness but consistently made finer distinctions between illnesses—distinctions that may be important in diagnosis and treatment. Accordingly, those individuals who best represent shared cultural knowledge have learned to be more specific in the applicability of shared general principles.

CULTURAL MODELS THEORY

The second theoretical approach revolves around the idea of cultural models or cultural schemas. A wide variety of contemporary cognitive theories converge on the construct of schemas (D’Andrade 1992) and the idea that “in large measure information processing is mediated by learned or innate mental structures that organize related pieces of our knowledge”

(Strauss and Quinn 1997:49). In this view, and consistent with Bartlett's original formulation of this concept, schemas are interpretive processes that mediate our understanding of the world. Schemas provide a simplified or prototypical conceptual framework integral to perceiving, organizing, interpreting, remembering, representing, making inferences about, and acting in the world (Casson 1983; Neisser 1976). Drawing on "connectionist" models of cognition, Strauss and Quinn (1997:49) maintain that schemas "are not distinct things but rather collections of elements that work together to process information at a given time." Schemas can be seen as "networks of strongly connected cognitive elements that represent the generic concepts stored in memory" (Strauss and Quinn 1997:6).

Whether or not schema theorists within anthropology rely on an explicit connectionist framework, the distinction between an individual schema and a cultural schema appears to be shared by all. According to Strauss and Quinn "Cultural schemas differ not at all from other schemas learned from humanly mediated experiences, except in being shared. Schemas unique to individuals are built up from idiosyncratic experience, while those shared by individuals are built up from various kinds of common experience" (1997:122). Within anthropology, cultural model theorists tend to rely on analyses of qualitative data, inferring the existence of cultural models or schemas from what informants say. Quinn, for example, says her strategy "has been to exploit clues in ordinary discourse for what they tell about shared cognition—to glean what people must have in mind in order to say the things they do" (Strauss and Quinn 1997:140).

A cultural models approach, in contrast to cultural consensus theory, provides no explicit grounds for determining whether something is shared. Strauss and Quinn for example, state: "At what point in the continuum of sharedness we decide to call a given schema 'cultural' is simply a matter of taste" (1997:122). Taking a different perspective, I suggested in an earlier paper (Garro 1988) that both cultural consensus and cultural models approaches could productively be applied in a converging manner to learn about underlying cultural knowledge and intracultural variation for a given topic. My specific example was understandings about high blood pressure in an Anishinaabe (Ojibway) community in Manitoba, Canada. The research design included both open-ended interviews and a series of "yes-no" questions about the illness asked of individuals previously diagnosed with high blood pressure. Responses to the "yes-no" questions were analyzed using cultural consensus analysis (with the actual questions used based on informants' statements from an earlier series of wide-ranging informal interviews about illness and high blood pressure). The cultural consensus analysis supported the assumption of shared cultural knowledge about high blood pressure, and statements with higher levels of agreement across informants were seen as more culturally salient. Data from

both sets of interviews were used to infer a prototypical cultural model for “blood that rises” (the local term for high blood pressure when translated into English). This interactive analytic process drew on the patterning among informants across both types of interview formats. The prototypical model proposed was seen to provide a framework for interpreting perceived symptoms and making causal attributions (the model is prototypical in terms of serving as the “best example” of cultural understandings about high blood pressure across informants). While some of the observed variation in both sets of interviews was considered to be outside of the cultural model, much of the variation expressed by informants was shown to be neither idiosyncratic nor systematically patterned, but as originating in and accommodated by the key concepts of the prototypical model. Thus, personal experiences with high blood pressure and causal attributions were cast within the bounds of the cultural model. Nevertheless, even though cultural consensus methodology figured prominently in the analysis, the findings were primarily used as a tool aiding the development of a cultural model. Left unexplored were the implications of cultural consensus theory with regard to cultural knowledge and the patterning of observed variability on the consensus factor across informants. In this article, I take this step.

As noted earlier, a characteristic of research adopting a cognitive orientation is that what is said about the nature and organization of cultural knowledge be cognitively realistic or cognitively plausible (see, e.g., D’Andrade 1981, 1992; Quinn and Holland 1987:32–34). In contrast to cultural consensus approaches where such concerns surface but are not addressed in depth, a central thrust of the cultural models approach to semantic memory concerns how best to represent the underlying cultural knowledge. Cultural model theorists have taken on what can be called the “size problem,” that is, “the problem of how we can learn and use as much knowledge as human beings do” (Quinn and Holland 1987:35 with reference to Abelson 1975). The emerging account from a cultural models perspective is:

One in which cultural understanding is organized into units smaller and simpler in construction and fewer in number than might have been supposed. . . . The prototypical scenarios unfolded in the simplified worlds of cultural models, the nestedness of these presupposed models one within another, and the applicability of certain of these models to multiple domains all go far to explain how individuals can learn culture and communicate to others, so that many come to share the same understandings. [Quinn and Holland 1987:35]

This hierarchical and differentiated yet interconnected portrayal of cultural knowledge contrasts with the metaphor of a cultural information pool relied upon by cultural consensus theory. Still, to this point in the discussion, what has been said about the cultural models approach is

essentially consistent with a semantic memory or “storehouse” view of memory.

However, it is in the differing stances taken by cultural model and cultural consensus theorists toward intracultural variation that cultural model theorists reveal a concern with active constructive processes—psychological, cultural, and social—as highlighted in Bartlett’s discussion of remembering. Quite helpful in this regard are Strauss and Quinn’s careful delineation of the distinction between schema and meaning, as well as their definition of a cultural meanings:⁶

This distinction between relatively stable cognitive networks and the ever-changing reactions that are the response of these networks to particular events is an important one . . . [and] we will use separate terms for each: “cultural models,” “schemas,” “networks,” “understandings,” “knowledge” . . . for the relatively stable cognitive structures; “meanings,” or “interpretations,” for the thoughts, feelings and less conscious associations evoked when people’s schemas meet the world at a given moment. [Strauss and Quinn 1997:54]

Our definition also makes meanings psychological (they are cognitive-emotional responses), but highlights the fact that meanings are the product of current events in the public world interacting with mental structures, which are in turn the product of previous such interactions with the public world . . . we are saying that what something (a word, an object, an event) means to somebody depends on exactly what they are experiencing at the moment and the interpretive framework they bring to the moment as a result of their past experiences. A *cultural meaning* is the typical (frequently recurring and widely shared aspects of the) interpretation of some type of object or event evoked in people as a result of their similar life experiences. . . . To call it *cultural meaning* is to imply that a different interpretation would be evoked in people with different characteristic life experiences. [Strauss and Quinn 1997:6]

Unlike cultural consensus theory’s view of variation across informants as indicating measurable differences in the amount of knowledge, from the perspective of cultural models theory variation may be attributed to how informants use cultural knowledge in particular situated contexts. Thus, variation across informants may reflect reliance on different schemas or perhaps on different aspects of the same schema, for example, by drawing on different hierarchical levels. Alternatively, as in my high blood pressure study, informants may come to frame their own experiences using the cultural model as a resource, and in this way the same cultural schema may lead to different attributions or to different conclusions. Similarly, variation expressed by a single informant may be linked to the differential use of schemas to meet different ends, to the point where an individual may hold conflicting schemas simultaneously and give voice to them differently (Mathews et al. 1994; Strauss 1990, 1992). Beyond the differential opportunities to learn about a cultural domain posited by cultural consensus theory, personal experiences, both present and past, enter into what is expressed as well as how something is expressed. In a manner reminiscent of Bartlett, this intertwining of the personal and the cultural in the

effort after meaning can be seen in Shore's assertion that "meaning construction is always at once a personal and conventional process" (Shore 1996:379; cf. Garro 1994).

Having set the stage by describing each theory's distinctive perspective on the nature of cultural knowledge, I now turn to a study, similar in design to my high blood pressure study, that will allow a closer look at both of these theories. Toward the end of this article, with reference to the analysis presented, I reopen the discussion on collective memory as well as on culture, cognition, and mind.

THE RESEARCH SETTING AND THE PROMINENCE OF DIABETES

The research site is an Anishinaabe reserve community located in southwestern Manitoba, Canada. *Anishinaabe*, and its plural *Anishinaabeg*, are how people refer to themselves within the community, although the designation *Ojibway* or *Saulteaux* may also be used when communicating in English with individuals from outside the community. While some children speak only English, most adults in this community still speak their own language, *Anishinaabemowin*, and prefer it in most social settings. There is insufficient land either on the reserve or surrounding it to allow individuals to follow a subsistence means of livelihood, except for a few fishermen. Some small tracts of reserve lands are farmed by a few families. While other employment opportunities exist through Band/Tribal government or related services, there is high unemployment and many are dependent on some form of economic assistance. Housing is crowded and substandard; the majority of the houses lack indoor plumbing and water is delivered by truck.

One of my first fieldwork activities involved asking community members to list the different illnesses they knew and their characteristics. Almost always mentioned in these 35 early informal interviews was diabetes or, as it is called in *Anishinaabemowin*, "sweet sickness" or "sugar sickness." As the name suggests, diabetes is seen as linked to sugar and consuming a lot of sugar often came up as a way someone could develop this illness. But diabetes was also talked about as a "new" illness that had not been present in the "old days," but which was now so common that some said it seemed as if "everybody is diabetic." In these interviews and in other settings, people expressed much concern and puzzlement about the ever-increasing numbers of individuals who had received a diagnosis of diabetes.

Although there is no epidemiological evidence available on the changing patterns of illness in this particular community, this talk about the relatively recent emergence of diabetes is consistent with descriptions of an epidemiological transition for many First Nations' communities in subarctic Canada (Young 1988). This transition is seen in the decline in

infectious disease with a corresponding increase in chronic, degenerative diseases, the so-called diseases of Westernization, such as maturity-onset diabetes, cancer, heart disease, and other cardiovascular disorders such as high blood pressure. Overall, studies of maturity-onset diabetes (also known as Type II or non-insulin-dependent diabetes) among the first peoples of North America document a rapid increase in the number of cases since World War II, from virtually none to a situation which has been compared to an “epidemic” (see West 1974; for diabetes morbidity data from nearby communities see Young et al. 1985). Another form of diabetes, known as juvenile, Type I, or insulin-dependent diabetes is relatively rare among the first peoples of North America.

In addition to noting the ever-increasing numbers of community members diagnosed with diabetes, the individuals I spoke with in these early interviews also often talked about diabetes as a “white man’s sickness.” An illness labeled as a white man’s sickness is seen as occurring for the first time after Europeans came to North America (other illnesses commonly referred to with this label include measles, tuberculosis, chicken pox, cancer, and high blood pressure). Talk about diabetes also brought up strongly articulated contrasts between the healthy and fortifying foods obtained through Anishinaabe subsistence activities in the past and the comparatively unhealthy reliance on the store-bought foods of the Anishinaabe present.

How an individual understands an illness reflects both personal experience with this and other illnesses and information obtained through other sources, such as interaction with others. Diabetes, as well as individual experiences with this illness, are topics of conversation and scattered throughout the interviews are observations attributed to other individuals, especially other persons who have been diagnosed with diabetes. Also important is information from health professionals working in the community.

Anishinaabe healers are not often consulted for diabetes, and when they are, recourse is typically to a herbalist (to request a specific remedy said to be effective in controlling “sugar”), and not to a healer who is “gifted” with special abilities to ascertain the cause of ill health and misfortune (see Garro 1990, 1998). Most care is provided by physicians and nurses. The local health center is staffed by visiting physicians approximately three afternoons a week. From a biomedical perspective, concerns about weight are often implicated in maturity-onset diabetes (as opposed to Type I diabetes, where heredity is seen to be a significant contributor). In the following quotes, two physicians talk about the relationship between weight and diabetes:

And then we, I guess that’s how we usually do it, talk about diabetes as being too much sugar in the blood. That’s how we diagnose it. But it’s not a problem with sugar; it’s a problem of weight.

It may not be so much because their pancreas isn't putting out enough insulin, it's because they've got too much body for the insulin. Because they get diabetic after they get to be 200 pounds, you know, or more. I think there's just not enough insulin to go around, you know, and that's why they start to get hyperglycemia. Not that their pancreas isn't adequate, it's just that they've got . . . too much tissue for the insulin.

Consistent with the biomedical perspective, which targets interventions at the level of individual bodies, physicians and nurses stress changes in behavior that are seen as being under the personal control of their patients. They urge patients to make comprehensive lifestyle changes in diet and increased exercise, with loss of weight used to indicate adherence to treatment recommendations. Warnings or allusions to possible future complications, such as limb amputations and blindness, often accompany instructions to lose weight. Recommendations generally target a shift away from high caloric foods, especially those high in fat, and increased consumption of fruits and vegetables. The reported preferred treatment strategy is to prescribe drug therapies only if the patient does not lose weight or if the blood sugar levels remain high in spite of weight loss. However, at least with respect to those participating in the study, many were eventually placed on oral hypoglycemics or insulin injections.

STUDY PARTICIPANTS

In this second phase, all of the 34 participants had been previously diagnosed with diabetes. They were identified through a list of chronic illness cases and were initially contacted by the local health center. The majority were women ($n = 26$) with a mean age of 49 years. In terms of formal education, one informant had completed grade eight, but none of the others reported going beyond grade six. An identifier consisting of the letter *D*, plus a number, has been assigned to each informant. When informants are directly quoted, the identifier is followed by a lower-case letter *m* or *f* to indicate sex; this letter is followed by a number indicating age.

Almost all reported being told by health professionals to make comprehensive lifestyle changes in the types and amount of food eaten; directives to get more exercise were somewhat less frequently reported. Eight were on insulin, 22 had been prescribed oral hypoglycemics, and for four individuals the primary recommended treatment involved solely changes in diet and exercise. For the six who reported they no longer took pills, four stated they had made the decision to stop, for a variety of reasons, without a medical consultation (the other two had been in contact with their physicians). There were differing opinions about the efficacy of taking herbal remedies for diabetes. At best, such remedies were seen as similar to pills or insulin in the ability to control, but not cure diabetes (for

more information about characteristics of participants, treatment recommendations, and responses to diabetes, see Garro 1995, 1996).

INTERVIEW FORMATS

Two interview formats were used. First, using an open-ended explanatory model framework (Kleinman 1978), individuals were asked to talk about their experiences with diabetes, including the cause of their illness, why it started when it did, the history of the illness, the kinds of effects it has, what possible and appropriate treatments there are, along with other related questions and additional questions that arose from the responses given. Although the primary focus was on each individual's account, participants were also encouraged to talk more generally about possible causes and ways of dealing with diabetes.

After this discussion, individuals were asked a series of 68 yes-no questions in Anishinaabemowin. While answering these questions, informants often made additional comments to support or clarify their response, and these were recorded as well. In addition, these yes-no statements provide a check for items not mentioned in the more open-ended portion of the interview, which may occur through omission or when a particular statement does not correspond to the individual's personal experience, but does represent knowledge about diabetes learned through interaction with others.

These yes-no questions followed an appropriate format in Anishinaabemowin and were based on comments made in the series of 35 previously mentioned informal interviews about illness that took place at a relatively early point in my fieldwork. A number of the statements used came out of discussions about diabetes or hypertension, others came out of discussions of other illnesses. The statements therefore do not represent the concerns of health practitioners, but rather observations and reflections made by other community members.

Statements were chosen to cover the same topics as the explanatory model interviews, for example, possible causes, consequences, symptoms, and treatments. A little more than one-fourth of the statements concerned possible causes. Among other questions, people were asked if diabetes could develop from ingesting too much of particular foods (e.g., foods high in sugar, salty foods, greasy foods) or drinks (e.g., alcohol, water), from smoking too much, from "poisons" (chemicals and additives, such as those used in processing foods or in agriculture), from being overweight, from having too many worries, from working too hard, if diabetes runs in families, if diabetes is contagious, and if the Anishinaabeg had diabetes before white people came. In presenting the findings, the focus will be on the causal questions. In part, this is to keep the data presentation and discussion

to a length that is appropriate for a journal article. More importantly, this subset is of particular interest because of the community-wide concern about what could account for the increasing number of cases. While all the individuals interviewed in detail about diabetes had previously been diagnosed as having the illness, it is especially at the level of causal explanations that their remarks are similar to numerous comments made by other community members that I heard in a variety of settings, both as a participant observer and in the course of carrying out other interviews. Diabetes is truly a presence in the community; all adults know of someone close to them who has been diagnosed with it, and many have either been diagnosed with it themselves or warned by health professionals. More generally, for all illnesses, etiological issues are a common topic for discussion as are the implications of a proposed etiology for actions taken in response to illness.

In discussing the findings, attention is first directed to the yes-no questions and cultural consensus theory. This includes both a summary of the basic findings as well as some additional analyses to explore for patterned variation. With these results in mind, I then turn to the open-ended questions and cultural models theory.

CULTURAL CONSENSUS ANALYSIS

Following the conventions for cultural consensus analysis described earlier, the analysis of the 68 yes-no questions resulted in a ratio between the first and second eigenvalues of 4.34. A separate consensus analysis of the causal subset of 18 statements resulted in a ratio of 3.41 for the first and second eigenvalues. Both of these values, although not high, are of a magnitude large enough to support the assumption of shared cultural knowledge. The overall mean value on the consensus factor (often referred to as the "mean competency") is 0.576 for the whole data set (standard deviation 0.18) and 0.67 (standard deviation 0.11) for the causal subset. For the causal subset, this 0.67 value can be interpreted as meaning that the participants "knew" the answers to approximately 67 percent of the questions (without the correction for guessing, approximately 84 percent of the responses are consistent with shared understandings about the causes of diabetes). The individual factor loadings (indicative of the extent to which each participant represents shared cultural knowledge) for the causal subset range from a low of 0.48 to a high of 0.87. There are no negative or even particularly low values. Overall, the values for the causal subset are indicative of relatively high levels of cultural sharing as well as low variance. The individual factor loadings function as weights and enter into the determination of whether the culturally shared response is one of agreement or disagreement, as well as their associated confidence levels.

Individuals with higher values contribute more to this determination. Bayesian values are calculated with an associated level of confidence for each consensus response. To be considered a consensus response, a confidence level of $p < 0.01$ had to be met. Only one of the causal statements did not meet this criterion. In addition, for the causal question subset, a binomial analysis was also carried out to determine whether the response for each independent statement indicates a significant deviation from an equal split of positive and negative responses.

CONSENSUS RESPONSES FOR EXPLANATIONS OF DIABETES

Because of the high level of correspondence between explanations for diabetes mentioned in response to the open-ended questions and the set of yes-no statements used, it is possible to provide a summary of both in a single table. While this summary by no means does justice to the richness of the open-ended interview data, it is useful in providing converging evidence of shared understandings. Further discussion of the open-ended interviews appears in a later section.

Table 1 is organized so that the yes-no statements with higher levels of agreement appear toward the top of the table. As only key words appear in the first column of the table, English glosses for the questions are provided in the Appendix. The letters *y* and *n* in the second column indicate the culturally “correct” response for each statement according to the consensus analysis. The third column gives the proportion of responses given in agreement with the consensus response. For the second column, the use of capital letters *Y* or *N* denote significance when responses are analyzed using a binomial test. A single-starred lower-case letter *n* is at the very bottom of the table. This statement is the one that did not reach statistical significance using the consensus program. Therefore it cannot be claimed that there is a shared response for the statement about diabetes being caused by having too many worries.

The final column records the number of individuals mentioning a given causal explanation in the course of the interview.⁷ The two explanations offered by the majority are sugar in foods (68 percent) and the food of today (65 percent). As previously noted, these are the two general themes that recurred in the early informal interviews with community members. Since the change from healthy foods of the Anishinaabe past to unhealthy present-day foods is attributed rather directly to the arrival of the white man, it seems appropriate to place mention of the food of today alongside the yes-no question asking whether the Anishinaabeg had diabetes before this time. The keyword in the first column is written in capital letters when the corresponding explanation was mentioned in at least 15 percent of the open-ended interviews.

Table 1. Proportion of agreement with the culturally "correct" response according to the consensus analysis and the findings from the binomial analysis for the causal questions juxtaposed with causal explanations mentioned in open-ended interviews ($n = 34$).

Statement	Y/N	Agree	Mention in open-ended interviews [n %]
1. catch from others	N	1.00	
2. SUGAR	Y	1.00	23 (68%)
3. ondjine	N	1.00	
4. bad medicine	N	1.00	
5. smoking	N	.94	
6. BEFORE WHITE MAN	N	.88	22 (65%—food of today)
7. water one drinks	N	.88	3 (9%)
8. born with	N	.88	1 (3%—acquired in womb)
9. ALCOHOL	Y	.85	15 (44%)
10. OVERWEIGHT	Y	.82	13 (38%)
11. POISONS USED TODAY	Y	.79	14 (41%)
12. works too much	N	.76	
13. pregnancy	y	.65	3 (9%)
14. lack of rest	n	.62	
15. RUNS IN FAMILIES	y	.59	7 (21%)
16. salt	n	.59	2 (6%)
17. GREASY FOODS	n	.56	5 (15%)
18. too many worries	n*	.56	2 (6%)

Key:

The letters *y* and *n* indicate consensus responses of yes and no, respectively.

Capital letters *Y* and *N* denote significance for the binomial test.

The starred *n* cannot be clearly classified as either yes or no in the consensus program using a confidence level of $p < 0.1$.

In the first column, the key words linked to explanations mentioned in at least 15 percent of the open-ended interviews are capitalized.

Overall, the data in this table show strong support, both from the consensus and the binomial analyses, for all of the explanations mentioned by more than a third of individuals (sugar, foods of today, alcohol, weight, chemicals). The next two most frequently mentioned explanations, runs in families and greasy foods, are both classified by the consensus program, but the agreement is not so high that the binomial criterion is met. Also, five individuals talked about diabetes as caused by eating greasy foods, a finding which does not fit with the consensus response. Although not reported as often, those mentioning contaminated water as a possible cause of diabetes are inconsistent with the high negative consensus response for the corresponding statement. These two inconsistencies will be discussed later.

PATTERNED VARIATION

Even though the consensus analysis indicated high levels of agreement, several further analyses were carried out to explore the possibility of patterned variation. Variation associated with age was of particular interest, as I suspected, based on other field work experiences and my observations when carrying out the interviews, that there might a tendency for older and younger individuals to emphasize different explanations for diabetes. A multiple regression analysis (both parametric and nonparametric) found no evidence of a significant association between the informant's age and the individual values on the "competency" or "consensus" factor.⁸ However, because the individual factor loadings are a summary measure across all questions, they may not pick up on patterned variation associated with subgroup differences in responses to the yes-no statements. For this reason, I turned to the Quadratic Assignment Program (QAP; Hubert and Schultz 1976) to examine whether there are differences in the pattern of responses associated with differences in age.

QAP uses two matrices—a proximity matrix and a structure matrix. The proximity matrix in this case consists of the inter-informant correlations using responses to the subset of causal statements. The structure matrix, which is of the same size as the proximity matrix, represents the hypothesis to be tested. This is created by specifying where correlations are expected to be higher relative to other locations in the matrix. Dividing the sample into two groups on the basis of median age (48 years), a structure matrix was created by placing a value of one (indicating the expectation of a higher correlation) at the intersection of every member of the younger subgroup with other members of the younger subgroup ($n = 16$) as well as at the intersection of every member of the older subgroup with other members of the older subgroup ($n = 18$). A value of zero is placed elsewhere in the matrix. Using a nonparametric Monte Carlo distribution, this association is significant at $p < 0.05$ (actual p value is 0.042), suggesting that even given the high levels of agreement, there is some variability among individuals which is associated with age. This indicates that some of the yes-no causal questions were answered significantly differently by the two groups.

Still, even given this evidence for some patterned variation, what has been presented provides relatively strong support for the cultural consensus approach. This data set meets the formal requirements of cultural consensus methodology, and there is substantial evidence of high levels of agreement about the causes of diabetes. But I've also presented evidence of some discrepancies between what is said by individuals and the consensus findings (with regard to greasy foods and contaminated water) and pointed to some (as yet unspecified) contrasts between the older and

younger groups. Do these apparent inconsistencies have any broader implications with regard to cultural consensus theory? I will suggest that they do. Before addressing this question, however, additional information is needed about how illness is understood, and how ideas about the causes of diabetes connect with these more general understandings.

CULTURAL UNDERSTANDINGS OF ILLNESS CAUSATION

To talk of cultural understanding is to run the risk of being seen as having adopted a superorganic (essentialist) bias. To avoid this perception, I digress briefly to situate my analysis. An alternative perspective attracting growing interest is described in a recent article by Rodspeth (1998) through an examination of Sapir's groundbreaking and prescient efforts in the direction of what can broadly be called distributive models of culture (as can be found in the work of Schwartz [1978], Sperber [1985], and Strauss and Quinn [1997]):

Whatever else might be said about culture, Sapir knew that it was not an autonomous level of reality, an internally coherent and integrated system, or a set of meanings shared by all the members of "an economically or politically or socially defined group" (1985[1932]:518). What he did suggest is that culture is carried by individual minds, manifested and transformed in social interactions, and distributed unevenly within any given "society." [Rodspeth 1998:63]

If social scientists were to "operate as though we knew nothing about culture but were interested in analyzing as well as we could what a given number of human beings accustomed to live with each other actually think and do in their day-to-day relationships" we would discover certain "permanencies which can be reasonably counted on to perdure, but which must also be recognized to eternally be subject to serious modification of form and meaning with the lapse of time and with those changes of personnel which are unavoidable in the history of any group of human beings" (Sapir 1985b:574). Because of variation and the potential for change, Sapir maintained that "it is difficult to see how cultural anthropology can escape the ultimate necessity of testing out its analysis of patterns called 'social' or 'cultural' in terms of individual realities" (1985b:572). As an illustration of how variation may be conceptualized, he examines an "extreme case" where everyone agrees on something in a given community (such as the ordering of the letters of the alphabet), that is, all but one person. "Two Crows denies this" and he does so persistently.⁹ Sapir holds that the "truth of the matter is . . . that in some sense Two Crows is never wrong. . . . [He] cannot be proved to contradict some mysterious essence of things. He can only be said, at best, to disagree completely with everybody else in a matter in which opinion or preference, in however humble and useless a degree, is after all possible" (1985b:572). Still, such divergences are cultural,

even if unique for “no matter how flexible, how individually variable . . . it is as a matter of fact the complex resultant of an incredibly elaborate cultural history, in which many diverse strands intercross at that point in place and time at which the individual judgment or preference is expressed” (Sapir 1985b:572–573).¹⁰

How are cultural patterns, then, to be authorized? Rodspeth (1998: 62) draws our attention to a 1917 paper by Sapir. Although the specific example is that of retelling what happened at a dinner table through adopting multiple points of view, the position Sapir advances has much broader relevance. Sapir asks if should we “succeed in being subjective” in multiple ways, have we not also succeeded “in being objective? For may not objectivity be defined as the composite picture gained by laying a number of subjectivities on top of one another?” (Sapir 1917:505, quoted in Rodspeth 1998:62; cf. Romney 1999). As Rodspeth points out, Sapir’s technique “seeks to represent a populational pattern by continuously confronting and juxtaposing individual variations” (1998:62). In this manner it becomes possible “to produce the effect of cumulative energy, of a steadily growing comprehension of the meaning of the whole?” (Sapir 1917:505, quoted in Rodspeth 1998:62). In this inferential process, the anthropologist does not stand apart from the account that is produced (cf. Rodspeth 1998:62). In the remainder of this article I attempt to look at both the collective patterning and the implications of variability. The cultural consensus findings, as well as other systematically collected data, more easily permit direct comparisons across informants, and thus provide a guide for both layering and addressing variability.

A hierarchically organized outline of Anishinaabe cultural understandings about illness causation with special attention to diabetes is presented in Figure 1. It provides a sketch of general applicability at the highest levels and is more specially tailored to understandings about diabetes in some of the lower levels. This outline depicts my efforts to infer generally shared understandings and relationships. It reflects converging evidence across a number of settings, including observations made while a participant observer, as well as through a variety of interviewing techniques (additional details are provided in Garro 1990, 1998, n.d.). When describing those aspects directly relevant to diabetes, I rely more heavily on what was said in the diabetes interviews (both the yes-no questions and the open-ended interview responses). The figure is not intended to be comprehensive, but serves as a summary of culturally available understandings relevant to a cultural schema for diabetes. Neither does Figure 1 strive for cognitive realism; it only attempts to convey a collective sense of the culturally plausible. Information contained in Figure 1 could, for example, enter into a version of a “connectionist” type individual level schema envisioned by Strauss and Quinn (1997).

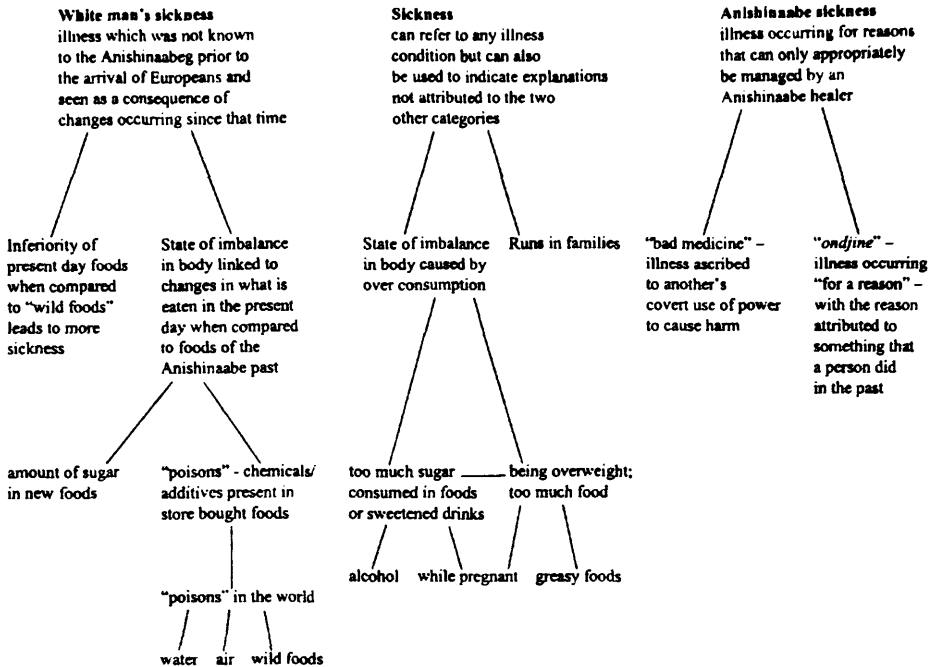


Figure 1. Outline of cultural understandings about illness causation with special attention to diabetes.

In essence, Figure 1 sets out in broad strokes the most common explanations for illness. There are several nested groupings that can be referred to by the three labels used by community members: “white man’s sickness,” “sickness,” and “Anishinaabe sickness.” Much can be communicated through the choice of one of these labels rather than another and the broadly shared understandings associated with each of these terms form part of their associated cultural schemas. It must be emphasized that Figure 1 is simply a framework, mapping out the conceptual entailments that underlie talk explaining illness and diabetes in the community. Based on observations across a wide variety of settings, it seems safe to infer that espousing an explanation at a lower level in the hierarchy ultimately entails one of the three highest-level terms. These explanations are not mutually exclusive; in many of the interviews participants commented on more than one. Most of what appears in the figure is not unique to diabetes, but has applicability to cultural understandings of other illnesses as well. These labels and their associated schemas serve as cultural resources in the effort after meaning when illness occurs. With specific reference to diabetes, much of what is said about what leads to this condition is consistent with the two levels directly under the headings “white man’s sickness” and “sickness” in Figure 1. The lowest-level explanations reflect comments and attributions that are more specifically differentiated and

that tend to be less frequently voiced. Thus, while all of the understandings in Figure 1 were expressed in the interviews by at least several individuals, some cannot be considered to be widely shared.

The general term *sickness* can be used to refer to any illness condition. However, it is also used as a contrast term in relation to Anishinaabe sickness and white man's sickness. When referred to in this manner, it can be most simply defined as those explanations that are not covered by the other two terms.

Referring to an illness as a "white man's sickness" or an "Anishinaabe sickness" carries a definite etiological message. As noted earlier, an illness referred to as a white man's sickness is seen as occurring for the first time after Europeans came to North America. Statements about white man's sickness are typically linked to community history and serve to account for the relatively recent emergence and high prevalence of illnesses like diabetes and high blood pressure. Comments about white man's sickness can be seen as "a making sense of the past as a kind of collective autobiography" (Connerton 1989:70); a means of asserting a collective memory about a past when the Anishinaabeg were healthy. The presence of white man's sickness is seen as but one manifestation of the disruption and destruction of the Anishinaabe way of life that continues to the present day.

Anishinaabe sickness is a complex concept. It is used to refer to illness occurring as a consequence of specific kinds of identifiable or potentially identifiable actions by persons. A defining characteristic of Anishinaabe sickness is that it can only be diagnosed and given appropriate care by an Anishinaabe healer who is "gifted" with these abilities. The two most prominent causal frameworks for Anishinaabe sickness—*bad medicine* and *ondjine*—are included in Figure 1. *Bad medicine* refers to "harming powers" that "include the ability to cause another's death, illness, or misfortune without being present or in physical contact" (Black 1977:149). *Ondjine* refers to illness or misfortune that occurs "for a reason" with the reason attributable to something that the person or a parent or grandparent did, sometimes years before the illness develops. The two cases briefly mentioned below only hint at the intricacies of this concept (see Garro n.d.).

Anishinaabe sickness was not brought up as an explanation by anyone in the diabetes interviews. Further, the two yes-no questions asking about bad medicine and *ondjine* were rejected by everyone as not being applicable to diabetes. Yet, some time after these interviews were completed, I spoke with two individuals who linked consequences of diabetes as indicating Anishinaabe sickness (both examples of *ondjine*). One of these involved a woman who consistently talked about diabetes as a white man's sickness when she had participated in the interviews. Threatened with the possibility of a second leg amputation due to a diabetes-related foot infection,

her daughter independently consulted an Anishinaabe healer and was informed that the infection was a consequence of her mother's failure to keep a spiritual commitment, a pledge she had made many years ago to dance in the annual Sun Dance for a specified period of time (see Garro in press a for an extended discussion of this case). The foot infection, although it was still talked about as a consequence of diabetes, came also to be framed as an instance of Anishinaabe sickness, guiding actions taken to deal with the infection and the threat it posed. In another case, an Anishinaabe healer reported that years before he had developed diabetes, in part seen as an Anishinaabe sickness occurring because he resisted responding to his calling to become a healer (see Garro 1990:445). Thus, even in cases of diabetes, the explanatory framework of Anishinaabe sickness remains a possible resource that may be drawn upon in assigning meaning and responding to illness developments.

As part of another structured interview carried out several months after the diabetes interview, 65 individuals were asked whether 11 illness conditions were each best described by the label "white man's sickness," "sickness," or "Anishinaabe sickness" (see Garro 1990:432; each label was chosen as the majority response for several of the 11 conditions). No illness condition is seen as a fixed exemplar of any one of the broad explanatory frameworks, although some frameworks are more likely to be associated with identified conditions than others. In fact, a number of those answering explained that any of the three labels might be appropriate for any of these illness conditions as an assessment depended on the specific circumstances of an individual case. To obtain some idea of the most likely interpretation, it was stressed that the choice should be of the best or most likely label. For diabetes, 74 percent selected "white man's sickness," 31 percent selected "sickness" and no one chose "Anishinaabe sickness" (the total is more than 100 percent as some informants said it was simply not possible to select one as better than the other). As it appears that it is highly unusual for Anishinaabe sickness to be connected with diabetes, the corresponding section of Figure 1 is left incomplete with only the two most common second-level nodes depicted in Figure 1 (further information may be found in Garro 1990, n.d.).

Talk about diabetes as a white man's sickness often referred to the change from foods of the Anishinaabe past to those of the present. With reference to this framework and as depicted in Figure 1, individuals emphasized either the healthy properties of foods of the past or the unhealthy qualities of present-day foods. The summary of explanations given in Table 1 shows that the majority of those interviewed (65 percent) commented that the foods eaten in the past kept the Anishinaabeg healthy when compared to the food of today:

In the old days, Anishinaabeg ate nothing but wild food. Nobody was ever sick. [D30, f, 48]

Ever since everybody stopped eating all this wild meat and started eating this new food, there's been a lot of sickness. [D15, f, 49]

Illness is also seen as a direct result of the inferior quality of present-day foods.

Long ago people lived to be 100 years old. They survived that long. They didn't eat junk food, like we do today. They survived that long without these illnesses. And nowadays, just look, they're coming in with all these sicknesses all the time. [D10, m, 59]

Specific characteristics of present-day foods that disturbed the balance of the body and led to diabetes were also singled out. There were a few explicit comments about all the sugar in present-day foods and how they contributed to diabetes. However, by far the most common source of bodily disturbance was through "poisons" ingested with foods, including chemicals and other substances sprayed on crops or added during food processing and canning. In addition to strong agreement for the statement relating to chemicals in the consensus analysis (0.79), this topic also came up in 41 percent of the interviews, making it quite salient.

A long time ago nobody had it. It's the food today that causes it. White people put too much chemicals on the food. The farmers put too much chemicals on the crop. [D18, f, 63]

There wasn't much sickness in those days. I think it's the food. Well, there's all kind of stuff in it. They put all kinds of stuff in it. [D11, f, 62]

As seen at the lowest level of Figure 1, a few individuals extended this reasoning to discuss the widespread effects of "poisons" in the world, contaminating the air, water and/or wild foods, as seen in the following quote:¹¹

Maybe because the white people put too much poison or spray in the water to purify it. That's where the sickness comes. [D18, f, 63]

Talk about diabetes as a sickness often pointed to physicians or other health care workers as the source of authoritative knowledge. Another imbalance-related second-level explanation appears in the sickness framework. Here, however, the critical feature is not the quality of the food but quantity, in terms of over consumption. At the next level, the two causal explanations linked with over consumption—consuming too much sugar and being overweight—are connected together in Figure 1 because they are often voiced together (the most commonly discussed way of becoming overweight is through eating sugar-laden foods). This close connection is not surprising, given the recurring emphases in clinical interactions on losing weight and changing one's diet. However, some individuals did make a distinction between ingesting too much sugar and the state of weighing too much, so two separate nodes are warranted. Still, the consumption of

too much sugar was the most frequently given explanation across all of the interviews, but this occurred only slightly more often than comments about unwholesome changes in food quality. A sugar-based explanation also extends into talk about alcohol. There were a number of explicit comments noting all the sugar in alcohol (e.g., "sweet wine" or "how homebrew is made with sugar"). Both sugar consumption and gaining weight were used to explain why it was easier to get diabetes while pregnant, accounting for the dual link to both explanations at the next highest level. Greasy foods are also talked about in terms of over consumption and weight.

The final second-level node in Figure 1 is "Runs in families." Again, health professionals are often credited as the source of this explanation. As has been shown, this explanation is unevenly distributed. Although the consensus response is agreement with the proposition that diabetes runs in families, it is not as widely shared as the other second-level explanations on this figure (nor as much as the most frequently offered explanations appearing on the third level). Additionally, statements expressing this sentiment tended to be very short and elaborated very little, and for no one was heredity either the key or exclusive cause. In contrast, I've carried out similar interviews in two other Anishinaabe communities where explanations based on heredity play a much larger role in cultural understandings; heredity is closely linked with the inevitability of diabetes and an inexorable disease progression (see Garro 1996).

All of the explanatory notions in Figure 1 can be understood as potential components of an individual schema. In terms of shared explanations in talk about diabetes across informants, most make statements that are consistent with the three second-level explanations (change to less healthy foods and the two imbalance models) and their most frequent entailments at the next lower level. Further, with regard to the yes-no questions, agreement with statements consonant with these three explanations characterizes those individuals with the higher values on the "consensus" or "competency" factor.

To this point there is little to differentiate cultural consensus theory from cultural models theory. Indeed, it would seem reasonable to conclude, in accord with the findings of the consensus analysis, that understandings about diabetes are shared within this group, and that those with the higher competency values know more about diabetes. The difference between these two theories, however, is in how they view the remaining variability. From the perspective of cultural consensus theory, is the variability to be attributed to differences in how much individuals know about the domain, with the more "competent" individuals knowing more about the cultural knowledge pool? Are the reported deviations from consensus simply to be considered "incorrect" responses? Or, from a cultural models perspective, is it more appropriate to view variation as occurring through

a socially and personally situated effort after meaning? Can variation be linked to social and personal experiences that contribute to differential patterns of reference to aspects of these widely shared explanatory frameworks? The next two sections address these questions. First, I take a closer look at intracultural variation, including the patterned variability associated with age. After this, I turn to the accounts of several individuals who participated in this study. Overall, I suggest that cultural models theory provides a better fit with the data.

INTRACULTURAL VARIABILITY AND CULTURAL MODELS

The existence of patterned variation in the consensus findings suggests that age might serve as a useful marker for divergent social experiences. To further explore variation associated with age, I compared the aggregate response for each yes-no statement for the two age subgroups. For three of the 18 causal statements there is a proportional difference of 0.25 or more in the level of agreement between the two subgroups. Two of the statements are simply more strongly affirmed by the older subgroup. All individuals in the older subgroup rejected the statement that diabetes was present before the arrival of the white man, but only 0.75 of the younger subgroup did the same. Similarly, 0.94 of the older subgroup agreed with the statement that “poisons” (such as chemicals or additives in foods) could cause diabetes, but only 0.63 (which does not meet the binomial criterion) of the younger subgroup answered in the same way. The third statement, however, which asks about diabetes running in families, reveals quite a striking difference. The younger subgroup has much higher levels of agreement with the consensus response (81 percent), which is that diabetes runs in families. In fact, the level of agreement is high enough for the binomial significance criterion to be reached. Yet, the trend in the older subgroup is to go against the consensus response and to reject this explanation for diabetes; 61 percent of the older subgroup rejected the assertion that diabetes ran in families.

Turning first to the negatively evaluated statement that diabetes was present before the coming of the white man, the high levels of rejection (0.88 overall) suggest that at least in a broad sense the explanatory framework of “white man’s sickness”—at the highest level of Figure 1—may be considered an expression of shared identity grounded in a collective autobiography. Yet, even at this broad level there are differences, as this position is shared by all individuals in the older group, but only by three-quarters of the younger group. Following Bartlett and Halbwachs, my interpretation of this disparity and others observed across the younger and older subgroups is that these differences likely reflect historically divergent experiences and accompanying “social

frameworks” that act as “social influences” on what is known as well as what explanatory frameworks are deployed. The older individuals grew up during a time when diabetes was not a presence in the community, and many said they could remember when they first learned that someone had been diagnosed as having diabetes. Neither their parents nor their grandparents had even heard of diabetes. A parallel was often drawn with other diseases, like measles and tuberculosis, which were seen to first descend on the community from the outside and were closely linked with the coming of Europeans to North America. Yet, diabetes was not seen as a disease that could be “caught” from others (this causal statement was rejected by all).

Given the historical embedding of diabetes and the comments affirming the recent introduction of diabetes, I was initially quite surprised with the positive (though not strong) consensus response for the “runs in the family” question. The divergence of younger individuals agreeing with and older individuals rejecting this statement can also be related to the differential experiences of these two groups. While the younger individuals knew of other family members who had diabetes (it is quite common for health practitioners in the community to screen as many closely related family members of a newly diagnosed individual as possible), the older individuals are more likely to note the incongruity of diabetes running in the family with their knowledge that it is of quite recent origin.

Figure 1 presents a number of the different ways that diabetes as a white man’s sickness may be talked about in this community. At the same time, it is possible to causally situate diabetes as a “white man’s sickness” without being more specific about the mechanisms through which this “white man’s sickness” develops. In some of the interviews, statements about “white man’s sickness” remained at a very general level and, in some cases, were only elicited by the relevant yes-no questions. This did not occur often, but when it did it was during interviews with members of the younger subgroup. The one exception to this pattern was an older man who broke into laughter when I asked whether diabetes was present before the coming of the white man. The account he had given me of his own case of diabetes revolved around drinking too much in his younger days. After his laughter subsided, he told me that he was really surprised that I even knew (let alone asked) about this and then he launched into an extended commentary about the unhealthiness of the contemporary diet in comparison to the wild foods of the Anishinaabe past and the contribution of this change to his own case of diabetes. As this example illustrates, what is said reflects active, constructive processes that are embedded in social contexts. The interpretive framework evoked by the interview initially precluded some forms of cultural meaning from being introduced, despite the man’s knowledge of the cultural model associated with white man’s

sickness (compare Strauss and Quinn 1997:54). In addition, this example reveals how the yes-no questions can assist in the tricky process of inferring what someone knows from what someone says. Nonetheless, given the interview orientation of the present study, an issue that is difficult to assess concerns the extent to which individuals feel obliged to reconstruct their history to align with “sickness” rather than “white man’s sickness.” Looking at the patterns across the data as a whole, this does not seem to be the most likely explanation for the tendency of those in the younger subgroup to deploy the sickness framework, but neither can it be dismissed out of hand.

By far the most commonly cited source of bodily disturbance leading to white man’s sickness appears at one of the lower (i.e., more specific) levels of Figure 1. This is the contaminating and rather insidious omnipresence of “poisons” in purchased foods. These “poisons” include chemicals and other substances sprayed on crops and injected into animals as well as those added during food processing and canning. For the associated yes-no question, it is the older subgroup who tend to more often agree that “poisons” used on the earth today could cause diabetes. Diabetes first appeared in the community around the same time as community members were becoming more dependent on store-bought foods and canned foods. Again, it is the older individuals for whom these associations are more salient.

These tendencies for the older and younger subgroups to emphasize different aspects of the framework in Figure 1, with the younger group more often focused on sickness-related explanations, and the older group on those associated with white man’s sickness, can also be seen in the accounts given in the more open-ended portion of the interview. Table 2 shows the distribution by subgroups. As would be expected from the analysis of the yes-no questions, the older subgroup more often cites the foods of today and the poisons in foods than does the younger subgroup. Also, with a single exception, those mentioning that diabetes runs in families are members of the younger subgroup. The subject of eating too much greasy food is raised exclusively by members of the younger subgroup. In addition, members of the younger group tend more often to mention weight and consumption of sugar-laden foods.

Across the data set as a whole, a number of individuals very clearly focused their answers on either of the general level frameworks of “white man’s sickness” or “sickness” and explicitly rejected the other. While there are fewer of these individuals than those who easily shift between “sickness” and “white man’s sickness,” they still make up about one quarter of the sample. Often, in rejecting the alternative viewpoint, they convey their awareness of the cultural understanding and their divergence from it. Thus, while they are aware of the consensus response, they don’t

Table 2. Number of individuals mentioning a causal explanation (15 percent or more) in the open-ended interviews and distribution across older and younger subgroups (divided based on the median age of 48 years).

Explanation	ALL n = 34		YOUNGER n = 16		OLDER n = 18	
	N	%	N	%	N	%
Eating too many foods with sugar	23	68%	13	81%	10	55%
Unwholesome food of today	22	65%	9	56%	13	72%
Chemicals and "poisons"	14	41%	4	25%	10	55%
Alcohol	15	44%	6	38%	9	50%
Being overweight	13	38%	10	63%	3	16%
Runs in family	7	21%	6	38%	1	6%
Eating too many greasy foods	5	15%	5	31%	0	0%

accept it. Following Strauss and Quinn (1997), it may not be the underlying cultural models of these individuals that differ, but rather their interpretations of these culturally shared frameworks as voiced in the interview context. For example, two of the women whose comments reflect the sickness-related over-consumption explanation made remarks when responding negatively to the yes-no question about poisons:

That's what some people say, ever since the white man started to put something in the food, like something you eat, that's where it comes from they say. What I think is though, when someone is pregnant, that's when they get it . . . I guess they eat too many sweets when they are pregnant. [D20, f, 36]

A lot of them say that, but I don't believe it. [D26, f, 37]

Another tried to show how the over-consumption explanation was sufficient to explain the increasing rates of diabetes without having to recognize diabetes as a "white man's sickness." The following statement was made when asked if Anishinaabeg had diabetes before the coming of the white man:

A long time ago people didn't have sugar or candies. But maybe for people who were overweight, it could cause them to develop sugar. Someone that's fat, that's how the sickness starts. [D5, m, 40]

The same pattern occurred for the strongest proponents of the chemicals or contamination viewpoint. One woman went through alternative explanations that she had heard from others and, one by one, rejected them, stating that diabetes couldn't come from being overweight, because there are lots of people who are overweight who don't have diabetes; it could "not be from drinking because everybody drinks" and although she thought too much sugar could be implicated (she agreed with the relevant

yes-no statement), it was not the sugar, but the chemicals and additives involved in the processing of foods high in sugar. She observed:

There was one woman I knew who never had sweets, she had diabetes just the same. And she never touched any sweets or sugar or anything, she had it just the same. [D4, f, 49]

While not unique, her reasoning about the chemicals in store-bought sugary foods did differ from the majority. Similarly, another man, in responding affirmatively to the question about alcohol indicated “everyday they are putting more chemicals in beer” (D10, m, 59). While consensus theory assumes that the same response indicates the same cultural reality, it is not common for researchers using these methods to collect additional data to assess the validity of this assumption (that is, the same response may be given for different reasons).

Earlier, I noted a couple of discrepancies between what causes were mentioned by individuals and the findings of the consensus analysis concerning greasy foods and water. Rather than treating these discrepancies as error, it may be more appropriate to see these individuals as giving non-consensual responses that are generated on the basis of an explanation appearing on the lower level of Figure 1. The over consumption of greasy foods is tied to discussions about weight and although the consensual response for the relevant statement is negative, what this seems to indicate is that this particular extension of the over-consumption explanatory framework is not widely shared. In the water example, three of the five individuals who agreed with the statement that someone could get diabetes from the water one drinks had already, in the preceding open-ended portion of the interview, talked about “poisons” in the air and in water; for example, the chemicals used in water purification. I later had the opportunity to informally ask several individuals, who initially rejected the water statement and agreed with the “poisons” statement, whether “poisons” in water could lead to diabetes. All three agreed that this was plausible.

For the patterns described here, the process of layering and juxtaposing variability could not have been accomplished without both the open-ended interviews and the consensus analysis of the yes-no questions. Nevertheless, the combination of the “storehouse” (internally undifferentiated) cultural pool model of semantic memory and the stance taken toward intracultural variation associated with cultural consensus theory does not provide a satisfactory account for the findings presented in this section. The differences in response to the yes-no questions between the younger and older subgroups cannot be taken to indicate that some individuals know more (or “do better” [Romney et al. 1986:318]) and others know less about a cultural domain. Rather, it appears that historically divergent experiences, for which age is a convenient marker, are associated

with populational patterns of individuals who know differently. As Strauss and Quinn (1997:122) point out, sharedness “requires not that people have the same experiences, only that they experience the same general patterns.” I’ve also suggested that patterns of “knowing differently,” such as individual consistencies in response (for example, individuals who responded in a manner consistent with “sickness” or “white man’s sickness”), can best be explained with reference to an underlying organization of cultural knowledge where causal understandings are interrelated in a manner compatible with a cultural models perspective. In addition, I have suggested that some of the observed patterns are consistent with a hierarchical and nested organization of cultural knowledge. For example, the voicing of a position indicating agreement with one of the lowest-level entries in Figure 1 does not occur in isolation, but in agreement across the whole interview for the associated upper levels as well. Further, I have pointed out instances where agreement or disagreement with a yes-no statement cannot be taken as evidence for the presence or absence of cultural knowledge. Metacommentaries expressed during the course of the interview reveal that individuals may have knowledge of these widely shared explanatory frameworks but, on the basis of their personally and socially situated experiences, they may reject specific or interrelated causal relationships as not having relevance for explaining diabetes. Finally, as a reminder that all of the material reviewed here was obtained through particular social interactions, the man who broadened the account of his own case of diabetes to incorporate “white man’s sickness” when he felt encouraged to do so by one of the yes-no questions, indicates that what is said reflects one’s interpretation of the task and the social context. At most, what is said are the “meanings” or “interpretations” that are “evoked when people’s schemas meet the world at a given moment” (Strauss and Quinn 1997:54).

In summary, the data presented here are consistent with an underlying cultural model for diabetes constituted, in part, of a range of culturally available explanatory frameworks that serve as resources that can be variably drawn upon. Although adopting this schema perspective makes it difficult to talk about “doing better,” “truth,” “error,” the “correct answer,” or “competent informants” with regard to causal understandings about diabetes, examining the patterning in consensual responses and departures from consensus have been pivotal to the claims put forward here.

REMEMBERING THE PAST AND CULTURAL SCHEMAS

To this point, remembering has been portrayed as what individuals know about diabetes and the way what they know is evidenced in how they respond to yes-no questions and talk about the causes of diabetes. This is

consistent with the dominant view, introduced early in this paper, of cultural knowledge as cognitive content. At the same time, what has been presented diverges from the definition of semantic memory as “knowledge of the world that is independent of a person’s identity and past” (Tulving 1983:9). It has been shown that what individuals know about diabetes is tied to how they know it—knowledge cannot be understood apart from either personal experience or from “social influences” or “social frameworks” (to borrow from Bartlett and Halbwachs). In turn, this suggests that cognitive cultural content cannot be neatly separated from the processes through which understandings gain relevance.

What is missing, however, is attention to the constructive nature of remembering as a process that conjoins personal experience and cultural understandings. Schemas, as Bartlett (1932) proposed, are dynamic interpretive processes mediating our understanding of the world. When individuals talk about their personal experiences with diabetes, they do so within the framework of possibilities afforded by culture. Schemas, including those referred to as cultural models, are formed through experience, provide “organised settings” (Bartlett 1932:201) for giving meaning to experience, and serve as resources in reconstructing past experiences as well as linking the past with present concerns and future possibilities. Through remembering, culturally available knowledge becomes situated knowledge, connected to a person, context, and illness history.

The cultural understandings associated with white man’s sickness and sickness are two resources commonly relied upon for making sense of the past, two versions of what is possible. They can be considered a form of collective memory. These causal understandings are essentially available to all, but are variably used by individuals in reconstructing and making sense of the past. They can serve as resources to guide remembering, but not in a straightforward, deterministic fashion. Remembering is reflexive and generative. It may be long after an experience occurs that it becomes meaningfully connected to a current illness through a reflexive assessment. Individual acts of remembering may also be influenced by social context.

In the majority of interviews, individuals did not relate white man’s sickness to their own case of diabetes but rather to the collective history of the Anishinaabeg after the arrival of Europeans. This can be illustrated by the account given by the person who has the highest “competency” value (0.87) and thus best represents the consensus responses for the yes-no statements. Mrs. Mousseau (37 years old), as I will call her, gave the consensus response for all causal statements except for the statement about having too many worries, which could not be confidently classified by the consensus analysis. Like a number of other accounts, her reconstructed illness history centers on the over-consumption model, and she

remembers a past filled with eating too many sweets and drinking. It diverges from many accounts by relating her diabetes to some stressful events in her life and by her assertion that diabetes is more likely to develop in "somebody that's always under pressure." In terms of white man's sickness, the only comment she makes is: "Thinking back the way Anishinaabeg used to eat they were never sick." While many made more extensive comments contrasting the collective past with the present, many of these were like Mrs. Mousseau's in being set apart from personal experience in a "bounded" fashion (see Strauss 1992) and not connected with personal actions taken in response to diabetes. Consistent with her "sickness" account, the actions Mrs. Mousseau considers important are taking her medications, and trying, although not always succeeding, to keep away from foods with sugar and alcohol.

There were some accounts, however, where "white man's sickness" was more central to the individual history. In general, while remembering over-consumption in relation to an individual's life context may provide a means for taking action to deal with diabetes, remembering the collective history provides a means for explaining the ever-increasing number of individuals with diabetes over time. It is an alternative to a biomedical construction of illness, which assigns primary responsibility for the disease to the individual. For five accounts in particular, the contamination of present-day foods was highly salient. For two of these, although they draw on the same explanatory framework of "white man's sickness," the reconstructed accounts are different as is the response to having diabetes. These two women, Mrs. Spence and Mrs. Stevenson (58 and 49 years old, respectively), gave almost identical responses to the yes-no causal statements (their "competency" values are 0.56 and 0.60, which are below the mean of 0.67). Notably, they rejected the statements about diabetes running in families and about being overweight, while agreeing that the water one drinks could cause diabetes.

My visit to Mrs. Spence has been a memorable one. Forewarned that I wanted to talk with her about diabetes, she launched into her account as soon I walked into her house by stating:

I'll say where somebody gets sugar diabetes is the food we eat. Nobody ate canned food before [pause]. It's the white man's fault. White people put too much chemicals in the food. Anishinaabeg never had sugar diabetes.

Mrs. Spence continued by enumerating the foods people used to eat while she was growing up and before there was diabetes in the community. She talked about what was grown in gardens, foods that were gathered, and about fishing. She went on to describe the different ways the foods were prepared by her mother. Later, she linked her case of diabetes to her diet at the time she was diagnosed:

What I think is because of the foods. I was working at [name of business located off the reserve] at the time. I never ate right. We always ate "Klik" or "Spork" [these refer to canned meat products], anything at all, so that is where I think it came from. I was always busy and I had no time to cook a proper meal.

Mrs. Spence's account stands out as distinctive because, for her, this collective memory has become personal knowledge, grounded in the particulars of her own life history. But the link between eating canned foods and developing diabetes was only reflexively established a number of years after her initial diagnosis and only after other explanatory frameworks had been found wanting. Mrs. Spence originally ascribed her diabetes to eating sugar and then to drinking alcohol. But when eliminating these items from her diet led to no improvement, she revisited other possible explanations for diabetes within the context of her own past.

The last time Mrs. Spence went for a checkup at the local health center she was told she no longer had diabetes. She credits this improvement to her return to the foods she remembers eating while growing up. Mrs. Spence's diet is based on foods her mother used to prepare; she has replanted her vegetable garden, and obtains wild meat and fish whenever possible. Within the framework of cultural understandings about diabetes, Mrs. Spence reconstructs her past to fit her present understandings and future plans. Yet, at the same time, Mrs. Spence's response to having diabetes is relatively unique, although there were others who talked about the benefits in terms of improving one's health through eating wild meat or having gardens.

The third account is from Mrs. Stevenson. A few years before the interview, one of Mrs. Stevenson's legs had been amputated due to diabetic complications.¹² From her perspective, diabetes is but one of the consequences of the ongoing contamination of the environment and food supply. Mrs. Stevenson referred back to a newsreel she watched years before:

A long time ago there was a doctor . . . about thirty years ago when we used to have those picture shows here. And that doctor told everything about how you are going to be, you're going to have sore bones, you're going to have headaches. That's because of those bombs they're testing he said. That's going to settle down. You'll even get it from the milk, you'll get it from the crop. He told us . . . everything in that news. That's why people are going to get weaker and weaker he said. I believe that now.

For Mrs. Stevenson, it makes no sense to single out any particular food because "you can get it from anyplace." For Mrs. Stevenson there is no escape. There is nothing she can do, except take her prescribed medication. A number of other individuals, whose reconstructions touched on the unhealthful properties of present-day foods, reported similar assessments that there was little that could be done to counter the assault. Diabetes is seen to be based in broad social changes that people feel they cannot influence.

It is for this reason that Mrs. Spence's account stands out as unusual. Yet, like Two Crows, Mrs. Spence's individuality is culturally grounded, at once the "complex resultant of an incredibly elaborate cultural history" while potentially holding the "power, by some kind of 'social infection,' " to effect change in others (Sapir 1985b:573, 571).

CONCLUDING COMMENTS

At the heart of this article is the contrast between cultural consensus theory and cultural models theory. Through an analysis of patterns in how individuals talked about diabetes and judgments made about the relevancy of culturally plausible illness causes to understanding diabetes, I have argued that, for this data set at least, cultural models theory provides more insight into the nature of individual and cultural knowledge. Generally shared cultural models of illness may be considered a form of collective memory, serving as resources that are variably used by individuals in reconstructing and making sense of the past. The conceptual underpinnings of the cultural models associated with illness are widely shared even though how they are interpreted and used may differ. I've hypothesized that the patterns observed across and within individuals are consistent with a hierarchical and nested organization of cultural knowledge. Across both interview formats, it does not appear that individuals are drawing on isolated pieces of information, but responding with reference to an underlying organization of cultural knowledge where causal understandings are interrelated in a manner compatible with a cultural models perspective. Intracultural variation may be linked to how informants are using cultural knowledge in particular situated contexts. Further, I've argued that what one knows about diabetes is tied to how one knows it. One's personal experience is socially grounded; content and process are intertwined. What is known, what is remembered, cannot be separated from how it is known and used.

The cultural consensus analysis of the yes-no questions and the interplay between data obtained through the two interview formats have been critical to the arguments developed here. Cultural consensus analysis maps out patterns of agreement and helps to corroborate claims about shared cultural understandings, while pointing out areas where there is less agreement. Nevertheless, cultural consensus theory cannot take us very far in understanding either intracultural variability or how cultural knowledge is interrelated at a cognitive level. Because knowledge is seen to be distributed unevenly, cultural consensus theorists anticipate intracultural variation but view variation as analogous to performance on a cultural test, with some individuals serving as better guides than others to the cultural information pool. Here, the intracultural variation observed

appears to be more a matter of knowing differently rather than knowing more or less. As the three individual accounts in the preceding section demonstrate, attending only to those with the highest consensus values would result in a truncated view of the cultural reality. Much can be learned from Two Crows.

Even more to the point, and in step with other scholarly efforts to integrate the study of mind with the study of culture, the data presented here are not compatible with a neat separation of cultural content and cognitive process, nor one that partitions semantic memory from autobiographical remembering. As Bartlett noted, the effort after meaning takes place within the context of everyday life. Knowing and remembering are activities occurring in the context of a culturally meaningful life and constructed using cultural material as well as personal experience. As cognitive schemas are dynamic interpretive processes taking form in cultural settings, an understanding of remembering in everyday life requires integrating the study of mind with the study of culture.

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NOTES

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1. D'Andrade gives some brief examples where researchers whose primary focus was on cognitive processing "had to analyze the structure of the task materials in order to understand the performance of their subjects" (1981:194).

2. The original article (Garro 1986:361–362) presents reliability values for informants that Romney et al. (1987:167) describe as an alternative measure of competence. Consensus analysis can be seen as "a kind of reliability analysis performed on people instead of items" (Weller and Romney 1988:75). This re-analysis is both consistent with and supports the conclusions of my previous article (Garro 1986). The Anthropac 4.0 analysis package was used for all of the cultural consensus analyses and quadratic assignment program analyses reported in this paper.

3. The rule of thumb of at least a 3:1 ratio for the first and second eigenvalues is formalized in the Anthropac program (Borgatti 1992).

4. In the original paper, non-metric multidimensional scaling (MDS) was used to represent the inter-informant similarities and the quadratic assignment program (QAP; Huber and Schultz 1976) to test the specific hypotheses. The curer data set exemplifies the MDS patterning that Romney refers to as the "fried egg pattern":

The pattern showed individuals with the most "knowledge" as more similar to each other than individuals with less "knowledge." This resulted in a cluster of the most knowledgeable people near the middle of the picture. [Romney 1994:271]

The observed patterning provided the basis for the exploratory test, using QAP, that the older half of the sample would be more highly intercorrelated than the younger half of the sample.

5. It may be observed that in describing my findings, I tend to avoid terms like *correct* (see Garro 1986:361–362), *competence*, and *competency values*. Instead, I talk about *representing shared knowledge*, *consensus*, and *consensus values* (see especially Garro 1996). Consistent with other comments throughout this article, it is my view that the underlying "test" metaphor and choice of terms like *correct* and *competent* to characterize the patterned regularities uncovered by consensus methodology adds meaning (beyond the statistical model). In turn, this contributes to the polarization seen, for example, in Aunger's (1999) highly critical comments about cultural consensus. In a direct response to Aunger, Romney (1999:S103) states that the formal model, like all other statistical models, "only reveals whether the data are consistent with its mathematical structure" and gives examples of data where it is plausible to "assume that the modal response defines what the majority of the sample of the culture thinks the answer is" (Romney 1999:S113). Although I recognize that it is this sense in which the terms *correct* and *culturally competent* are used by cultural consensus theory, these terms also carry the implicit contrast of *wrong* and *culturally incompetent*.

6. The similarities to Sapir are worth noting: "The true locus of culture is in the interactions of specific individuals and, on the subjective side, in the world of meanings which each one of these individuals may unconsciously abstract for himself from his participation in these interactions" (1985a:515).

7. Two explanations mentioned in the open-ended interview have no corresponding yes-no question, so they are not included in Table 1. One person mentioned that if a mother had diabetes, the illness could be transmitted to an infant by breast-feeding. Four individuals stated that diabetes could come from high blood pressure. But in only one of these did high blood pressure figure prominently. In this instance, a common explanatory framework for high blood pressure, "working too hard," led first to high blood pressure and subsequently to diabetes. In the other three accounts, one or more of the seven most frequently mentioned causes shown in Table 1 was accorded greater explanatory relevance.

8. As in the curer study, the presence of a significant association could indicate that there was a relationship between age and "knowing" more about diabetes. Other variables were also examined. No significant associations were found between the individual consensus factor loadings and educational level, gender, and type of treatment. The computer-intensive, distribution-free, randomization multiple-regression test was run using a prerelease version of Anthropac 5.0 authored by Stephen Borgatti.

9. Romney's (1994:269) response to Sapir's conjunction of the challenge of "Two Crows denies this" and the necessity of assessing cultural patterns in terms of individual realities is to position cultural consensus theory as a tool designed to "segregate truth from error" (Sapir 1985b:569).

10. It also remains "always possible in principle, if not in experiential fact, for the lone individual to effect a transformation of form or meaning which is capable of communication to other individuals" (Sapir 1985b:573).

11. "Poisons" in the world was placed beneath "poisons" in foods because everyone who expressed agreement with the former also agreed with the latter. Alternatively, both nodes could be placed at the same level of the hierarchy.

12. Mrs. Stevenson is also the woman discussed earlier in this paper who, some time after the diabetes interviews were completed, developed a diabetes-related foot infection that came to be framed as an instance of Anishinaabe sickness.

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APPENDIX: CAUSAL STATEMENTS

1. Do you think that someone can catch diabetes from other people?
2. Do you think that someone can get diabetes from eating sugar or foods with a lot of sugar in them?
3. Do you think that someone can get diabetes from *ondjine*?
4. Do you think someone can get diabetes from *bad medicine*?
5. Do you think someone can get diabetes from smoking too much?
6. Do you think that before the white man came, Anishinaabeg had diabetes?
7. Do you think someone can get diabetes from the water they drink?
8. Do you think that someone is born with diabetes, even if it doesn't affect them until later on?
9. Do you think someone can get diabetes from drinking too much alcohol?
10. Do you think someone can get diabetes from being overweight?
11. Do you think that someone can get diabetes from all the "poisons" used on the earth today? (The term used in Anishinaabemowin refers to all substances sprayed on crops, injected into animals, or added to foods as well as pollutants in general.)
12. Do you think someone can get diabetes from working too much?

13. Do you think that it is easier for someone to get diabetes if she is pregnant?
14. Do you think someone can get diabetes if they don't get enough rest?
15. Do you think it is easier for someone to get diabetes if their relatives have it? (Although this is a direct translation of the question in Anishinaabemowin, the question was interpreted as asking whether diabetes "runs in the family.")
16. Do you think someone can get diabetes from using salt or eating salty foods?
17. Do you think someone can get diabetes from eating greasy food?
18. Do you think that someone can get diabetes because of too many worries?