

# IBM Research Report

## *The Walking People* Construed as a Persistent Conversation

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# ***The Walking People Construed as a Persistent Conversation***

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## **Abstract**

*In this paper, we argue that *The Walking People* by Paula Underwood can be profitably conceived of as a persistent conversation. Evidence is obtained from the narrative sections of the book (which constitute an oral history of her branch of the Iroquois) as well ancillary material from the author that describe, for example, the way in which designated storytellers are selected and trained and how the listeners to the oral history are meant to interact with the text.*

## **1. Introduction**

Much can undoubtedly be learned about a genre by careful study of some quintessential examples. Arguably, additional insights may be learned by careful study of boundary cases. In fact, it is precisely boundary conditions that stories typically focus on. In a complex world in which it is impossible to explore every portion of a highly multi-dimensional space, a good heuristic is to focus instead on boundary conditions [1]. Hence, one mechanism that humans have evolved for transmitting knowledge about complex environments is to tell stories about boundary cases. (Indeed, there is an analogy here which is more than accidental to the mathematical theorem: "A linear function defined over a convex polygon takes on its maximum and minimum value at a corner point of the convex polygon" [2].

In this paper, we examine a boundary case of persistent conversation, *The Walking People* [3]. In the first section of this paper, we will argue that *The Walking People* can be profitably viewed as a persistent conversation by examining the ways in which it is persistent and the ways in which it is a conversation. In the second section of the paper, we will argue that it is highly likely that *The Walking People* is an *accurate* account. Evidence will be provided based on both the content and the processes used to ensure accuracy. We conclude by speculating on how some of the ideas in *The Walking People* may provide guidance for modern technology mean to support persistent conversation.

*The Walking People* by Paula Underwood includes the written English transcription of the oral history of her branch of the Iroquois tribe. While there are no specific "dates," it is clear that the history extends over many millennia. From internal evidence, it is clear that the oral history serves many purposes that are similar to those of other persistent conversations. The history serves to transfer knowledge across individuals, time, and space. It further serves as motivation and inspiration for those facing new difficulties and challenges. Both the process of producing the ongoing history and the product of that process serve as an important source of cultural and individual identity. The book, *The Walking People* also importantly includes additional material by Paula Underwood that describes the *processes* involved in *using and preserving* the contents of the oral history.

In many examples of contemporary persistent conversation, we implicitly assume that our technology provides an accurate record extending indefinitely into the future. In reality, it is not at all clear that "persistent" conversations of today will be accessible in 100 years, let alone 10,000 or 100,000. In the past as "distant" as 1967, I documented my first project in graduate school with video tape. I have not seen a working machine capable of playing such tapes anywhere in the last 30 years. Films fade; paper disintegrates; magnetic media demagnetize; and even when the records themselves remain intact, the hardware and software needed to read these records, if anything, is changing faster than ever.

The oral history of the Walking People begins with a great tragedy which nearly destroyed all their previous learning (as well as the people themselves!). Partly for this reason, the Walking People developed numerous mechanisms for insuring the persistence of their oral history. This paper examines these mechanisms and compares them with contemporary mechanisms. In addition, we explore the ways in which the oral history is a conversation among contemporary individuals within the tribe, a conversation among tribes, a "conversation" with physical reality, and a bidirectional communication across generations.

It is often presumed that a “written” record that is millennia old is accurate while oral histories cannot be because the latter are all subject to kinds of distortions that occur by analogy to the well-known parlor demonstration, “The Telephone Game.” We challenge this comparison at both ends. First, written records often need to be transcribed and this allows for the possibility of unintentional error and for intentional repurposing of material. Second, written records are often translated across languages. Any such process is inherently open to error and interpretation. Third, and most importantly, even if a written record in the form of a set of symbols stays absolutely constant over millennia, the *interpretation* that people put on those symbols changes. As one example of this process, the United States Supreme Court, prior to the American Civil War interpreted the United States Constitution as putting limits on *Federal Law only*. After the Civil War, the Supreme Court consistently interpreted the US Constitution as providing constraints, not only on Federal Law but also on State and Local Laws as well. This change was not debated in Congress. No explicit laws or Amendments were made. The *Zeitgeist* changed, and with it the interpretation. This fundamental change took place in less than half a century. A similar example are the two cases of *Plessy vs. Ferguson* (1896) and *Brown vs. The Board of Education of Topeka, Kansas* (1954) in which the Supreme Court gave opposite interpretations as to the constitutionality of “separate but equal” accommodations. How then could we imagine that the interpretation a (lone) reader in today’s technologically sophisticated world would put on a 5000 year old written manuscript would be the same as someone living 5000 years ago?

Now, let us examine the validity of the “telephone game” as evidence for the necessary inaccuracies in oral traditions. First, notice that the “telephone game” asks that participants *whisper* a message to someone. Second, notice that in the “telephone game,” each participant whispers their message to one and only one recipient. No opportunity is given to cross check across listeners or, in the case of uncertainty to ask the speaker to repeat. Third, the whole *point* of the game is the entertainment value in the distortion. It would be a completely boring exercise if the outcome of the game were that the last person recalled *verbatim* what the first person said. The demand characteristics on the participants are to introduce distortion. Fourth, what is spoken is often a single de-contextualized sentence or story. Fifth and finally, today we are trained in our culture to rely on written records and

very little attention is given in our education and training on the ability to recall what is said *verbatim*. All of these situational factors are completely different in oral traditions generally and certainly specifically different in the case of *The Walking People*. First, the songs and stories in an oral tradition are sung loudly enough during silence that everyone with normal hearing can hear what is said. Second, the songs and stories are told to groups of people simultaneously. Third, the point of the oral tradition is only secondarily entertainment. Primarily, this is how knowledge crucial to survival is passed on from one generation to the next. It is serious business. No-one would think it “humorous” to introduce a potentially life-threatening distortion into an oral history; for instance, to change the description of a vast desert to a lush and verdant forest. Fourth, the oral tradition typically is filled with internal redundancy. Fifth, precisely *because* people rely on these stories for understanding how to survive, they are trained to be excellent at recalling such stories.

## 2. *The Walking People* constitutes persistent conversation.

### 2.1 The material is persistent.

There are both process and content reasons to support the thesis that the conversation is persistent. *The walking People is likely to be persistent because there is internal redundancy.* For example, on p. 29:

And a Great Resolve swept through them  
 And they said this so often to each other  
 That it became a Song for Walking.  
 LET US LEARN  
 FROM EVERY WAKING MOMENT.  
 LET US LEARN  
 EVEN AS WE SLEEP.  
 LET US LEARN  
 AND WATCH OUR BROTHER WALKING  
 EVEN THOUGH  
 HE CHOOSE A SHARP AND STONY PATH.

---

NOW THE PEOPLE SANG A NEW SONG  
 LET US LEARN ALL WE CAN  
 LET US SEE ALL THERE IS  
 LET US HEAR EVERY SOUND  
 LET THOSE WHO COME AFTER  
 RECEIVE THIS GIFT.

The Walking People *is likely to be persistent because the songs were repeated often*. Notice the implication in the above passage. They called themselves the walking people because much of their history was a great migration from Asia to the northwestern part of North America, down the coast, across the Great Plains all the way to the Atlantic Ocean and then back to the Great Lakes. In other words, they walked a lot! The passage above suggests that, at least this section of song, was not something reserved for once a year special celebrations but that it was a song sung during walking itself.

The Walking People *is likely to be persistent because all learn the narrative*. Everyone is encouraged to learn the stories. This introduces redundancy across the individual memories within the tribe. On the other hand, there is also a mechanism to resolve possible differences by careful selection and training of a designated storyteller.

The Walking People *is likely to be persistent because there are designated storytellers*. Both of the above two points are illustrated by the passage below: (p. 42).

“If only First Among Us sings these songs  
who will sing them next?”

AND WE SAW  
THAT THERE WAS WISDOM IN HER WORDS.

AND IT CAME TO BE  
That all vied each to every other  
To be the one to sing her...her own songs.

Until Snow on Top became angry with our noise  
And spoke to us as one  
Who would turn away from her People  
And said –

“I shall walk on –  
Let none come to meet me  
Until you have agreed among yourselves  
Who shall sing next.”

The Walking People *is likely to be persistent because they use careful selection and training procedures for the designated storytellers*. This process is actually described in greater detail in another of Paula Underwood’s books [4]. However, in the addendum to *The Walking People* (p. 814), she explains, “Training in this tradition can begin in infancy and may continue nonstop throughout life.

Total oral and visual recall is the goal, so that you develop the ability to “re-hear” a speech as if you were playing an audio tape in your head or “re-see” an event as if you were screening a movie of what you just saw. You are tested again and again for capacity in these areas.”

The Walking People *is likely to be persistent because the processes involved in using it require, not only verbatim recall, but interactive “deep processing” of the material as well*. For example, Paula Underwood [3] explains part of her training: (p. xiv): “When it finally seemed to me that I might risk ‘giving back’ one whole section to my father, I learned something new. I was asked to give it back to him three times – in three different ways – no one of which could be the way in which my father presented it to me.

“I should be able, you see, to demonstrate an absolute understanding so sure that I could restate it in any contemporary language, so that it might be more understood than ‘wondered at.’ As my father pointed out, language changes! Many people did not even understand the language of Shakespeare which his mother often read out loud. Little value in a history so couched.”

*At a more meta-level, The Walking People is likely to be persistent because they are aware of the possibility of inaccuracies and change being introduced. Indeed, this is precisely why some of the above mechanisms exist.* For example, on p. 480:

“We who were concerned  
that too many Ancient Songs  
might lie scattered and forgot  
along so continuous a path  
now are concerned  
that these same songs  
may lie scattered  
on this easeful Earth so long  
that the very nature of sky waters  
will carry away all traces  
of what we presently value.”

AND ALL SAW IT WAS SO,  
THAT ONE WAY AND THE OTHER...  
ALL THIS ANCIENT WISDOM  
MIGHT YET BE LOST  
TO SUBSEQUENT OTHERS.

One of the reasons, in terms of content, to believe that the conversation is persistent is that there is a lack

of revision toward consistency. When later learning shows some earlier custom to be in error, *both* the earlier custom and the later revision are included. This issue is explored below under “accuracy.”

## 2.2. The material constitutes conversation.

The Walking People *is a report of conversations among people who lived long ago*. This claim is simply that a good deal of the text includes purported conversations among the people. There is no reported idle chit-chat. The conversations are always about the pros and cons of various ways of living; decisions to be made about what to do and where to go. (p. 739):

NOW

THE CIRCLE OF THE PEOPLE GATHERED

AND NOW

*Each brought the gift of individual vision  
to add to the understanding  
of the Whole People.*

The Walking People *is a kind of “conversation” with physical reality*. The people engage in group problem solving efforts while they try to wrestle with many physical realities. How can we cross a series of islands when storms may wash us away? How can we cross treacherous mountains without falling? How can we encourage plants to grow near us so we need not walk so far?

The Walking People *is a conversation with other tribes*. After the day of “Rocks like Rain”, the walking people encounter two tribes on their way to the land bridge, one hostile and one friendly. They also encounter a solitary survivor from a third tribe who had attempted to cross the string of islands and been washed away by a great storm. In North America, they meet and interact with a variety of tribes. In one case on the West Coast, they meet with people on boats who come from “Hah-Vah-Ee-Kay.” Some of these people, however, had forgotten their origins and this possibility of forgotten knowledge worried The Walking People and further strengthened their resolve *not* to forget their own history.

Much later in the narrative, they meet a war-like people who insist that they move away from their home near a beautiful lake (Lake Ontario) and instead move to a marshy area which caused disease. The Walking People then, after much debate, decide to learn the war-like skills of this other tribe. (p. 738):

*“You go out from here  
to learn new and harmful ways –  
and to bring back to the People  
this new understanding.*

*“But as we are a People  
who would do no unnecessary harm..*

*“So are we a People  
who do not send you forth  
lightly regarding your life or learning.*

...

*“As we are not a Water Walking People  
and yet learn the nature  
of birch bark water craft –  
so let it be with this also.*

*“Whatever it is they do  
in the nature of their arguments  
with neighbor Peoples..*

*“SO LEARN THAT WAY,  
that all our People  
may surely learn from you  
an understanding  
that will meet and even exceed  
our need for understanding.”*

This is but one example, but the more general point is that the Walking People always tried to learn something of value from every other tribe that they encountered.

The Walking People *is a conversation between generations*. At many points, people are considering the impact on future generations; the impact of their current actions but also of the kind of intellectual legacy that they are leaving. For instance, on p. 63-64:

*AND A FIRM RESOLVE SWEEPED THROUGH THEM.*

A purpose

other than attaining a second island home.

*THEY DECIDED*

To be a People

who would perpetuate and refine  
this manner of ordered council  
which they had achieved

So that the children’s children’s children  
might benefit from greater understanding...

*AND A SENSE OF TOMORROW  
ENTERED THEIR HEARTS*

AND NEVER AGAIN LEFT THEM.

SUCH WISDOM IS OUR GIFT  
FROM THOSE WHO WENT BEFORE.

MAY WE OFFER EQUAL MEASURE  
TO THOSE WHO FOLLOW US.

The *Walking People* is not meant to be a narrative passively listened to, but the occasion for interactive learning. This is not all that obvious from the narrative text itself, but is clear from the Addendum. For example (p. 826):

“Page 328: ‘Great Swimmers’ --- Here the Teller will at some subsequent time (if the listener does not) raise the issue of ‘can we learn to breathe from those who breathe only water?’ Thus encouraging the listener to understand that these Great Swimmers were addicted to open air, even as we.

“It is the same with talking. If the listener does not notice what this passage may imply, then some exploratory questions may be asked. But all of this section is very, very *implicit* – and meant to be that way. You must work at understanding .. and therefore truly learn.

“In part, this grows out of the cultural preference for self-learning. If I tell you what’s ‘right,’ whatever that may be, you’ll never figure it out for yourself. In part, it’s a structure which allows you to go back and think more nearly as people thought then, rather than passing the images through the prism of present language and assumptions.”

### 3. *The Walking People* is an accurate recounting.

Accuracy and persistence are related but different concepts. One might have a set of processes for continually changing content in the light of new evidence. If old versions were not kept, then such a conversation would increase in accuracy over time but not be “persistent.” Conversely, one could imagine a completely imaginary creation myth that nonetheless was well-preserved over time. It would be persistent, but not accurate. While the two concepts are not necessarily correlated, in the case of *The Walking People*, I believe they are related. *The Walking People* is clearly not meant merely as a history but is also meant as a guide to current action. It is important to

the people that the narrative remains both historically accurate and that it change through addition to reflect new or additional learning. In fact, part of the evidence for persistence and accuracy is that when new learning causes an old assumption to change, the earlier narrative is *not* revised to reflect the change and make it appear that the beliefs and customs were more consistent over time than they actually were.

### 3.1. The content of *The Walking People* provides evidence for its accuracy.

*The travels through various lands are geographically consistent.* This correspondence is detailed on pages 818-832 of [3].

*There is no story-arc in The Walking People.* There are dramatic events and important conversations reported throughout *The Walking People*. Yet, there is no sense of increasing oscillation of story value as the narrative “progresses.” In most (though not all) novels, plays, and films there is a tendency for the stakes to increase and correspondingly, there is an increase in tension on the part of the readers [5]. This is not so in *The Walking People*. Moreover, even in more minor ways, there is a conscious prioritization of accuracy over drama. For example, on p. 250:

NOW

IT WOULD PLEASE ME TO TELL YOU  
That the People

Found great difficulty in this transit.

IT WOULD PLEASE ME TO TELL YOU  
IT WAS SO...

SO THAT MORE MIGHT LEARN  
WHAT MIGHT BE OVERCOME  
BY A PURPOSEFUL PEOPLE.

YET I TELL YOU NOW  
IT WAS NOT SO.

*There is no deification in The Walking People.* None of the humans who perform unusual or heroic deeds are portrayed as “gods” or “goddesses.” Nor are natural events couched in terms of the actions of unseen gods or goddesses. Finally, none of the motivations and decisions described in *The Walking People* is ascribed to a “higher power.” The tribe convenes and debates the pros and cons of some action or approach, but these are always talked about in terms of actual consequences. No-one says, “Well, that is all well and good, but I have heard from God, and *He* says we should do thus and so.”

*The events described in The Walking People are physically and psychologically believable.* In over 800 pages of narrative, no bushes burst into flame; no seas suddenly part; no-one levitates; never does a person turn into a snake or vice versa. There are no miracles reported. Similarly, there are no incidents where characters perform unexplainable or unmotivated actions. This is true both of individuals and of the group as a whole. For example, when a difficult decision must be made, with wisdom on various sides, there are always some people who speak for each of the possible courses of action. There is no false consensus reported in this narrative. All reasonable positions of dialogue are represented.

The Walking People *narrative does not dichotomize into “us/good” vs. “them/bad.”* The walking people prefer their own way of doing things, but are happy to learn new skills from others. Other tribes that come into conflict with the walking people are not described as evil; the two tribes simply have different goals or approaches. Late in the narrative, when the walking people do go to war, they offer those who are taken prisoner the option of death or joining the walking people. (This may also constitute the first standardized intelligence test!).

In some cases, later events clearly show that the walking people made a bad decision. But this is not attributed to evil gods or the inherent badness of those who counseled for the bad decision. Rather, they attempt to learn what went wrong in their decision making and how to do better next time. For example, early in the narrative, after crossing to North America, the walking people come to an area with very little food and water. Eventually, they make the difficult and heart-rending decision to leave the small children behind. The only option appears to be to risk the destruction of the entire tribe. They reason that if the adults survive, they will be able to have more children later. This decision is not without controversy. Ultimately, however, this is what is decided and the small children are essentially poisoned. One of the youths is so upset by this decision that he also drinks the poison in protest. As it turns out, the walking people encounter more plentiful food and water very soon. It becomes clear that they did not need to kill the very young after all. If one of the points of this narrative was to somehow “prove” how great or how good the walking people were, it seems clear that this part of the narrative would be expunged or re-told. A common modern ploy might be to say, “This is what

*we almost did* and we are certainly glad that we did not.”

Recognizing this decision (in retrospect) as a mistake led to a change in custom. (p. 812). “My father helped me to see that the needless and harmful decision made at ‘Sad Partings’ – about 70 years after ‘Rocks Like Rain’ measured by the age of She of Eight Winters – led to a profound decision on the part of the Walking People. Never again were the young to be excluded from any decision, especially not from a decision which had such a profound impact on their personal selves. This was, he explained, the bedrock of the inalienable rights of the young (children) to speak their own wisdom into ordered council. ‘Let us choose to be People whose youngest ears are welcome around any fire’.”

Another example occurs on pages 456-473. The long-time custom of the walking people was to “invite the very young – for whom walking would prove a great difficulty – to go with some few and elder persons who would with love and compassion, invite this young, never walk person toward that Great Sleep in which we become at last one with Earth.” However, one mother had such a son (completely unable to walk), and for various reasons, refused to follow the custom instead saying that she herself would carry her son for as long as she was able and when she could no longer, she herself would cause her son’s death. Eventually, the son found a task for himself; viz., when the people went into new environments, he would be the one to try out all the new plants and discover which ones were edible and which ones were poisonous. Thus, on p. 468:

AND ALL SAW HOW IT WAS,

How all valued the presence  
of True Mother and of her True Son  
so greatly  
that, for this gift alone, many were happy  
to join in such carrying.

The point, in this context, is that the narrative makes no attempt to judge, in moral terms, either the previous custom or the subsequent alteration; nor is there any attempt to retrospectively alter the telling of the previous custom. They simply discovered another way of looking at things that led them to change their custom.

### 3.2 The processes surrounding *The Walking People* give credence to its accuracy

These processes have already been discussed above in the section on persistence. Persistence does not necessarily prove accuracy of course. However, if one combines probable persistence with the evidence from content factors mentioned, at least one likely conclusion is that the record is also accurate.

## 4. Applications to Modern Technology

The Walking People lived through times of great change both physically and culturally. Despite these changes, we have argued that they developed effective mechanisms for keeping a persistent and accurate account of what took place, including all major arguments about decisions taken as well as for changing customs when further information or perspective made such changes wise.

Although obviously today's technology is quite different from what was available during most of the history covered by *The Walking People*, in this section we argue that many of the mechanisms and processes developed by the People might be profitably applied today. Many of the papers dealing with persistent conversation concentrate on providing additional on-line capabilities; e.g., ways to visualize conversations or ways to enhance text with signals to replace face to face signals that would otherwise be missing from on-line environments. The applicable wisdom from *The Walking People* is not about specific new technological capacities but is about how to have effective conversations.

### 4.1. The wisdom in *The Walking People* forms a kind of socio-technical Pattern Language

In *The Walking People*, we find extended descriptions of specific situations that led to specific learning. But along with these specific examples are more general statements of solution patterns. These are important because when faced with a novel and complex problem, it is often useful to have a more compact notational scheme for representing a problem. While the original narrative provides a context for the solution pattern, the Pattern itself is expressed succinctly. These Patterns are then often re-used in quite different contexts. For instance, very early in the narrative (pp.7-8), the People reflect on the fact that many women with pointed sticks are as effective as two men, one atop the shoulder of the other, when it

comes to ridding caves of unwanted bears. One more general learning that comes from this experience is expressed this way: "AND HOW MANY MIGHT DO WHAT FEW-ALONE COULD NOT EVEN THOUGH EACH OF THE MANY HAS LESS STRENGTH." Somewhat later (pp.11-12), a teacher of hunters is struggling with how to help the young learn without peril and considers how nice it would be if the tusked ones and the bears would "stand still" for the young learners. He thinks, "WHAT IS IMPOSSIBLE FOR ONE MAY BE POSSIBLE FOR MANY" thus invoking the general Pattern, but this time using it to make a painting of potentially dangerous prey with various kinds of pigments. Still later (p. 44), this Pattern was applied more abstractly with respect to problem solving itself, "IF THERE IS NOT ONE AMONG US WHO CONTAINS SUFFICIENT WISDOM MANY PEOPLE TOGETHER MAY FIND A CLEAR PATH." Still later (p.65), while puzzling how to cross the island arpeggio without being swept away by storms, they reminded themselves of this Pattern, "WHAT IS IMPOSSIBLE FOR ONE MAY BE POSSIBLE FOR MANY"

THINKING OF THIS,

They wove ropes  
which were long as well as thick  
and with which those who were struck by  
Ocean  
and washed from their footing  
might be restrained by others  
who were more secure.

Stories that embody specific examples are memorable and motivating ways to become engaged in learning and to recall. However, for solving problems, it is often useful to have at hand as well, this more succinct representation --- the Pattern that constitutes the essence of a solution to a recurring problem. We would do well in our own modern learning to record both kinds of knowledge. One format that captures both the abstract and the concrete is illustrated by *A Pattern Language* [6]. Here, the architect Christopher Alexander and his colleagues capture recurring problems and the essence of a solution. A Pattern typically includes a photograph of a concrete instantiation of the Pattern as well as a more abstract rendering in both verbal and diagrammatic terms. Much as the debates in *The Waking People* are summarized in terms of the major arguments about possible courses of action, *A Pattern Language* also includes for each Pattern a discussion of the "forces" that push one way and another. While *A Pattern*



*Language* dealt with issues in physical architecture, others have applied the same general concept to a variety of domains including object-oriented programming [7], the software development process [8], human-computer interaction [9], and, of most relevance here, socio-technical interaction [10].

## 4.2. Special Roles in social learning

Interestingly, we recognize that star level performance in language, acting, music, mathematics or sports typically requires extensive early training. It is no accident, for instance, that Tiger Woods began playing golf when he was two years old or that Mozart began intensive musical training early in life. The Walking People also realized the importance of life-long learning when it came to being a keeper of wisdom. All too often in our society, special roles that might be important in conversation and problem solving; e.g., facilitators, judges and mediators are only explicitly trained for relatively late in life.

## 4.3. An ordered council

The Walking People learn early in the narrative the value of an “ordered council.” While some modern commentators (See, e.g., [11]) have also made a strong case for such an ordered council, many typical face to face meetings in our society are anything but. If anything, many on-line environments are even worse containing multiple, disorganized threads and often consisting largely of “write-only” conversations. There have been attempts to introduce tools to “slow down” and “organize” on-line conversations to make them more civilized and productive. Of course, the people in a tribe depend upon each other over a long period of time. Any breach of etiquette or lack of respect would be clearly associated with a specific individual and wrongful behavior would certainly have social consequences. It is often assumed that the anonymity of many on-line environments is what leads to anti-social behavior. Anonymity (or any other reason for lack of social consequences) may well be a necessary but not sufficient condition for anti-social behavior. In the early days of AOL (@1995), for instance, the author participated in many “Native American chat rooms” in which people behaved very respectfully towards each other. For example, it was not uncommon for one person to “tell a story” (typed two lines at a time) for an hour while other users simply “listened” (watched the story unfold on the screen). These long turns were only characteristic of Native American chat rooms, but other chat rooms also

exhibited respectful behavior. More recently, unfortunately, nearly every public chat room, regardless of topic, seems to find itself with some small number of people whose sole purpose seems to be disruption and disrespect. The “ignore this user” tool helps to some extent, but does not offer a very satisfactory solution. There is still an initial disruption and often the same individuals simply re-enter using a different screen name. It might be possible to devise on-line tools capable of detecting disruptive and anti-social behavior. Another short-term “fix” is that people participate in “private” chat rooms whose names and times are only given to trusted identities. Unfortunately, this prevents the anti-social individuals from observing constructive conversation. A more robust and long-term solution probably requires that people learn at an early age the value of an ordered council.

## 4.4. The Iroquois “Rule of Six”

Given that in many on-line environments, people may not always behave appropriately coupled with the fact that on-line environments do not typically provide the kinds of social disambiguating cues present in face to face interactions, these environments may be particularly appropriate for the application of the Iroquois “Rule of Six.” [4]. This heuristic suggests that in any complex social situation, when one is tempted to conclude a specific set of circumstances is responsible for someone’s behavior, before acting, one should also generate an additional five set of circumstances that may have led to the same observable behavior. For instance, imagine that you are waiting in a meeting room and your calendar says that the meeting is to start at 10 am. The clock on the wall reads 10:15 am. John is not here. Your natural inclination is to conclude that John does not care about the project. Using the Iroquois “Rule of Six” you might generate various alternative explanations. It might be the case that you have an erroneous calendar entry. It might be the case that the clock on the wall is incorrect. It might be the case that John is from a culture where fifteen minutes is not actually “late.” It might be the case that John was unavoidably detained in traffic. Perhaps John was waylaid outside the meeting room by the Vice President and is, even now, doing his best to extol the virtues of the project. There is some obvious utility to the application of this rule in specific instances. Less obvious, but perhaps even more valuable, over time, is the kind of attitude that the habitual application of this rule might have on flexibility of thought.

#### 4.5. Old Versions and Modifications

There is a maxim in biology, “Ontogeny recapitulates phylogeny.” Basically, what this means is that during the development of an embryo (say, human), there are strong resemblances (not literal reproductions) to the forms of ancestors. By contrast, in our own society, it is typically considered a rather frivolous pastime to bother with recording, reproducing or recalling previously held but now discounted views of reality. What is most important is the “current” wisdom. Or, so we think. In *The Walking People* clearly, the ideal is to record, not only the “bottom line” but also to include previous views, arguments and counter-arguments. Given that life has existed for about 10 \*\* 9 years and oral cultures for at least 1 \*\* 6 years and modern written language only on the order of 1\*\* 4 years, it might make some sense to pay attention to this form of preserving knowledge.

A very contemporary example concerns the use of phages, a promising approach to the treatment of bacterial diseases until the development of modern antibiotics basically superseded this approach. More recently still, many bacteria have evolved antibiotic-resistant strains and there is a resurgence of interest in phages [12].

#### 4.6. Who speaks for Wolf?

Another potentially useful Pattern comes from another Iroquois learning story, “Who Speaks for Wolf?” [13] According to the story, the tribe included a man whose life work was to study wolves; so much so, that the tribe renamed him “Wolf.” Once, while Wolf and other warriors were out on a long hunting expedition, the Tribe determined that they were using up too many resources in the immediate vicinity and needed to move. Scouts were sent to find the most appropriate place for relocation. Finally, after much debate, a location was chosen and the tribe moved. In the spring, they found out that they had moved into the Spring breeding ground of the wolves and the wolves were threatening the children and stealing the drying meat. So now another council was held to determine whether they should move again, or kill the wolves or post guards at all times. Finally, they decided to move again. However, they also asked themselves, “What did we learn from this? How could we make sure not to make another such error in the future?” Someone said, “If Wolf had been at our first council, he would have known and warned us from moving here.”

Another suggested that henceforward, if anyone were missing from the ordered council, someone should say, “Who speaks for Wolf?” to remind them of those whose opinions, interests and perspectives were not represented. If time permitted and none were present who believed they could offer such a view, then it may be wiser to delay decision.

Of course, in the case of the People, it was fairly obvious when someone was not present. In modern life, it is not always so obvious whether there are missing stakeholders and who they might be. In [14], suggestions are made as to how to apply this ancient wisdom in modern settings.

### 5. Conclusions

Clearly, there are many useful technological approaches to enhancing on-line conversations including providing information about participants and their actions [15], using user tagging and search [16], providing explicit signaling of rhetorical intent [17], adding structuring mechanisms and ancillary information [18], providing visualizations of conversation [19] and providing tools to help with storytelling [20]. All of these provide the possibility to enrich and enhance on-line conversations. In this paper, we have taken an alternative approach; viz., to search for insight in what may seem to be an *a priori* unlikely source, *The Walking People*. Upon reflection, it seems that there is wisdom in this oral history about how to carry on a conversation effectively over time and space so that historical accuracy is preserved and yet increasing wisdom is found.

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