



Strange Days and Hidden Connections

A White Paper Prepared for the Sea Studios Foundation by the Topos Partnership
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Introduction

Sea Studios has undertaken the daunting task of motivating the American public to engage in solving some of the Earth's most challenging problems. Initially, Sea Studios' efforts focused on bringing significant environmental challenges to light. More recently, the organization's work has explored ways of communicating challenges facing natural systems with consequences in seemingly "unrelated" issue areas like poverty, globalization, and health.

This task is formidable for a number of reasons. First, many of the problems Sea Studios is addressing are global in nature. As a result they seem very remote and disconnected from the average American's life. It would be easy for a viewer to find a story very interesting, but not to feel any personal responsibility to address the issue. Additionally, Sea Studios has chosen to highlight complex, emerging issues that are not yet completely understood by scientists, let alone lay people.

To educate and engage the public, Sea Studios has created an enormously valuable asset in *Strange Days on Planet Earth*. From a production standpoint, *Strange Days* is exceptional. It has mesmerizing visuals, captivating storylines, and stellar narration. These assets are a strong foundation, but other aspects of the content and presentation are also critical to motivating the public and changing its thinking.

In its first season, *Strange Days* emphasized "mystery" and "the unknown" as a storytelling device. In its second season, *Strange Days* is attempting to foreground "connections." The Topos partners' research experience clearly indicates that "connection" is not only a desirable storytelling device, it is essential to learning and public action. Connections help people understand how an issue works and how a problem developed, and even more important, it allows them to see their role in addressing it.

Problematically, however, "connectedness" is not a default understanding for most Americans. As a result, this key concept merits special attention from a communications perspective. This

paper is intended to provide Sea Studios with the principles it needs to keep in mind as it creates new episodes of *Strange Days* as well as materials for other media. The paper is divided into four sections:

Executive Summary - a summary of the central ideas in the paper

Chapter 1: Connectedness - a discussion of this key idea, including distinct elements of Connectedness and examples of the role of Connectedness in Americans' thinking on various (non-environmental) issues

Chapter 2: Issue Focus - an overview of specific aspects of the cluster of issues at the focus of Sea Studios' work, including a discussion of public response to the idea of Connectedness on environmental issues

Chapter 3: Specific Guidance and Recommendations - a discussion of communications Traps (common and counterproductive patterns of understanding that people can easily fall into, and that obstruct understanding and action), recommended approaches, and thoughts on the material that has already been produced

A recommendation for additional research is included in the Appendix.

Our Perspective and the Research that Informs It

A key measure of *Strange Days*' impact is how well it teaches its public some basic and critical concepts about the functioning of marine systems. An audience that is engaged by the viewing experience, but takes away little or no new knowledge is unlikely to have a positive influence on the larger conversation about ocean conservation.

In this paper we review some general principles about what constitutes effective explanations and go on to apply these principles to specific key concepts in the *Strange Days* series.

It is well-established that people typically rely on analogies in order to learn and understand unfamiliar, abstract, or complex ideas (e.g., Biela 1991, Gentner et al. 2001, Turner 2001). An explanation that reduces an abstract and/or unfamiliar issue to a simple, concrete analogy helps learners organize information into a clear picture in their heads, including facts and ideas they already know but do not normally use. Once this mental picture has been formed, it becomes the basis for new inferences about – and engagement with – the topic (D'Andrade 1992, Shore 1996).

Teaching with analogies is a familiar strategy in classroom education. To take a few examples, an electrical circuit is like a "water pipe;" patterns of civic interaction constitute a "social contract;" patterns of political interaction lead to a "balance of power;" and so on. Education

researchers have gone so far as to codify a set of steps for teaching with analogies (e.g., Glynn et al. 1995).

Practical experience suggests, however, that the methods that work in the classroom do not necessarily apply to the experience of watching a television program. There are various reasons for this, including the non-interactive nature of the medium and the relative brevity of exposure to the explanations. Further, the bar is in a sense higher in the case of the *Strange Days* series, in that ultimate success will depend on whether learning spreads from viewers to other members of the public. It is therefore desirable that the stories and explanations be repeatable to others.

For this reason, in media-based explanation special attention must be paid to the fit between ideas and minds, as well as the parallels between the explanations offered and the expert theories they explain (e.g., Strauss & Quinn 1997, D’Andrade 1981, Sperber 1985, 1996, Dennett 1995). In the following sections we provide specific recommendations for how to improve the effectiveness of specific explanations that are critical to a central purpose of the *Strange Days* series. We also suggest key concepts that need to be emphasized, and identify conceptual Traps of which producers should be aware.

Executive Summary

Communications Traps: Default Understandings to Avoid

As the Sea Studios team works on creating and refining materials, they should keep in mind a number of serious communications “Traps.” These are common and counterproductive patterns of thinking, that are easily triggered in viewers’ minds and that can derail the intent of the material, by causing people to misinterpret or reject the intended messages. Each of these is a kind of “*default*” view – one that people easily slide into even if they know better on some level. It is one thing to get people to momentarily take a different perspective – it is another to help them develop new habits of thinking about the world.

Awareness of these Traps emerges both from the Topos team’s own research experience on Americans’ thinking about topics closely related to the series, and from established principles from the cognitive and social sciences.

Clean Water Trap

Americans have a strong tendency to think of a *healthy* body of water as one that has *clean-looking* water. Public opinion data affirms the public’s tendency to prioritize water “pollution” over other environmental concerns, with the top three concerns revolving around water pollution: pollution of drinking water, pollution of rivers, lakes and reservoirs, and contamination of soil and water by toxic waste. The bigger picture, the damage to ecosystems that occurs from over-fishing, for example, is much harder for people to see. The opening segment of *Dirty Secrets* may well fall into this Trap by seeming to focus on coastal

sewage, therefore reinforcing the idea that the problem is all about *dirty water*. The very new and interesting thread in this segment about contaminants being introduced into the water far inland and wrecking the reef, which could create a connection between what happens inland and what happens to the coral reef, is not clearly conveyed as strongly. This is a missed opportunity to explain the big picture.

Separate Environment Trap

Even people who are very concerned about the Environment usually have a strong tendency to see it as something separate from ourselves, something that some people happen to be more “interested in” than others, rather than something we are all part of and dependent on. This way of thinking effectively prevents people from seeing the environment as an everyday concern. For example, when people are asked who is most threatened by global warming, “plants and animals” are cited more often than “people.” The script reinforces this tendency in subtle ways: A line in *Dirty Secrets* reads, “seeing the water we depend on and recognizing how we affect it are critical steps toward assuring ITS future.” In order to reinforce humans’ connection to environment, the line should read “OUR future.” Associated with this tendency is the characterization of humankind as a destructive force of the environment – with no sense given of the *self*-destructive implications. For example, the immediate impression at the beginning of *Troubled Waters* is *Man ruins nature*, full stop.

Economic Zero-Sum Trap

One of Americans’ strongest tendencies when thinking about natural systems is to balance the importance of protecting them against the “economic costs.” That environmentalists are willing to sacrifice the economy to save plants and animals is a perennial and effective attack. While public opinion polls demonstrate that Americans would prioritize the environment over the economy when forced to choose, the percentage prioritizing the environment is far lower than it was in the early 1990s. When the narration talks about a popular tourist destination as “a favored destination of job-seeking Mexicans” or describes the Chesapeake Bay as being “more like a gold mine than a coal mine” it is unwittingly triggering this problematic mindset.

Modernization Trap

Americans (and others) tend strongly to see damage to natural systems as the inevitable if unfortunate cost of progress. According to this default narrative in people’s minds (closely related to the Economic Zero-Sum Trap), human civilization is constantly moving “forward” in ways that gradually damage natural systems and lead to the loss of pristine places and beautiful landscapes. This is a Trap which viewers’ thinking is likely to fall into any time a point about human activity and its effect on natural systems is not made in a compelling, new way - e.g. the apparent focus on coastal sewage in *Dirty Secrets*, referred to above. (Many viewers are likely to conclude that pollution is an unfortunate *but inevitable* cost of widespread coastal development.)

Negative Interconnection Trap

One of the chief goals of *Strange Days* is to help average people appreciate how the world is (inevitably) connected through natural systems. Anything that makes interconnections themselves seem frightening or avoidable works against this goal. Unfortunately, the discussion of invasive species in the Invaders episode is likely to promote the idea of “negative interconnection” – i.e. the idea that *we are threatened by things outside our borders*. As “invaders” are framed as frightening threats to particular places, the narrative is likely to promote short-sighted, limited solutions (kill the invaders with the harshest poison available), rather than achieve the broader learning that is possible (we should be careful and cautious in our efforts to protect natural systems). A more useful story might focus on species’ roles within a given system, and the problems that are created when systems are disrupted. This “pieces out of place” narrative would do a better job of promoting precautionary thinking about balanced ecosystems, than does the “scary invaders” frame.

Vast Earth Trap

Average Americans have a default sense that certain things are simply too big to be seriously damaged through human activity. For example, it is easy for people to imagine that pollution only affects the areas where it is locally produced or dumped. It is harder for average people to “see” that our actions in the U.S. might have an effect on the air or water in Asia or Africa, etc. Relatedly, Americans find it difficult to imagine that humans can effectively address global environmental problems (like climate change) which seem too big and complex to fix. On one level, the entire *Strange Days* enterprise is aimed at defeating this Trap. The series effectively addresses the problem in the invasive species episode, for instance, where viewers are given a clear image of shipping that crisscrosses the oceans, inadvertently carrying species to and from every corner of the world.

Importantly, each of these Traps is *surprisingly* powerful. Each is a pattern of perception that people can default to *even when you might think they’ve been given enough information or context not to*. In other words, the communicators should go to extraordinary lengths to help people avoid these Traps. How to get beyond these Traps is the topic of the next section.

Getting Beyond the Traps: The Importance of Connections

The idea of *Connections* – between people and “the environment,” between seemingly unrelated issues, between actions and consequences, between different parts of the world – is central to the current vision of what *Strange Days* is all about.

This focus is well-justified, since there is considerable evidence that when people are made aware of such connections, their thinking about an issue is likely to move in constructive directions. On issue after issue – from poverty alleviation to global relations to health and so forth – Americans are more engaged and more able to think constructively when they are aware of connections of various kinds. Understanding of the dynamics and systems that connect people to each other, issues to each other, and so forth can be an important driver of engagement on any given issue.

This important principle is often overlooked by communicators and advocates who tend to rely on a limited message toolkit dominated by a Sympathy Frame or Crisis Frame, for instance. Over time, audiences inevitably feel fatigue as the list of crises and sympathetic victims grows ever longer.

Our research consistently finds that the public is far more motivated to act and more receptive to progressive policies when a message frame incorporates the idea of Connection. By Connection, we mean two related ideas: how a given issue connects to a particular audience, and how seemingly unrelated actions, decisions, etc. are actually connected within broader systems.

Connecting People to an Issue: As communicators strive to motivate the public to act on an issue, they tend to rely on two basic themes – either self-interest or altruism. We should act because “helping is the right thing to do” or because “it directly affects me and my family.” Each approach is effective with some of the people some of the time, but each is also limited. (Compassion and generosity are limited resources, and the self-interest approach can often lead to the wrong conclusions, as people focus on how best to protect their own interests – e.g. by buying an SUV in order to be safe in the “scary weather” associated with global warming.) A third option, usually overlooked, connects all of us (Me, and Them) in an Interconnected Interest perspective (We), a perspective that tends to be more effective in building citizen support for action.

Drawing Broader Connections – Making Systems Visible: In order to really see our Interconnected Interests, people often need a new and “bigger” mental picture of an issue. They need to see the systems and causal connections at work, in order to understand how a problem is created and what effective solutions would entail. In order to promote big-picture change (of the kind needed to truly protect the natural systems we all depend on), communications need to connect the dots for people by making systems of various kinds visible. This kind of sophisticated understanding can be difficult to communicate, but is essential to advance conservation efforts and other progressive action over the long-term.

Americans' default perceptions of issues typically do not include these systems, connections and dynamics. Many of the kinds of connections that *Strange Days* focuses on are either “invisible,” or far in the background for most Americans – the connections that make up ocean ecosystems; connections between U.S. industry and environmental problems elsewhere in the world; or between land activities and water quality in a given watershed, etc. At the same time, people certainly are aware of a *general* connection between human activity and the state of the environment. Importantly, though, this awareness is often not *constructive*, partly because the only clear implication is that people should take more of a “hands off” stance towards nature – rather than becoming pro-actively involved in conservation, or in developing new systems that meet human needs in more sustainable ways.

A major focus for *Strange Days* is to make both types of connections more visible to the average American. However, Sea Studios' narrative choices will enhance or undermine the ability of the series to effectively communicate connections. For example, the One Degree Factor episode includes both types of connection in one sentence: “What I put into the atmosphere affects you. What you do affects me. The Earth's climate is one big interconnected system, and some of the links are fascinating, unexpected and worrisome.” The idea is right in this case, but comes late in the episode and is only stated once, which undermines its effectiveness.

We now turn to a discussion of narrative choices and how they can be used to advance the concept of Connections or Interconnection.

Narrative Choices: How to Talk Interconnection

Communicating the idea of Interconnection presents major challenges, but Topos can offer a number of general recommendations based on both our previous research on related topics and principles from our respective fields of expertise. Each of these suggestions should be treated as a general direction, which could take a number of different concrete forms. Of course, there is no substitute for ultimately testing any materials with real members of the intended audience.

It is one thing to get people to momentarily take a new perspective on a topic, it is another to help them develop new *habits of understanding*. While the entertainment value of the *Strange Days* series is very high, it may shy away from “teaching” more than necessary. The series provides a unique opportunity to focus the public's attention on new information, and could do more to incorporate effective teaching techniques (that don't “feel like teaching”), to assist in conveying new and complex information.

In other words, Sea Studios might create even more powerful material if it thought of its role more in terms of *education* and less in terms of *persuasion*.

Organizing Ideas

We recommend the use of consistent organizing ideas (statements, claims, etc.) that are introduced at the beginning and returned to frequently throughout the presentation, in order to help viewers make sense of and remember the more specific information. This is, perhaps,

the most common missed opportunity across the *Strange Days* series. The Mystery format leads to a slow unveiling of the ultimate story. This approach works against the principle that people learn best when they can organize their thinking (from the start) around some central ideas. There are several good candidates for organizing ideas, which, if hinted at early, are likely to help people create the necessary connections and more readily absorb the learning – e.g., Daily Dose (natural systems are harmed through small, regular, unnoticed events/ actions), Hidden Structures (such as the underground Yucatan river system).

Key Learning Concepts

For particular segments, episodes or the project as a whole, it would be helpful to choose some key concepts that viewers should come away understanding – each of which should be related to the broader theme of connections. For example, “estuary,” “dead zone,” and “watershed,” are not well understood by the public, but could be clearly conveyed through well-designed illustrations (including animations). This approach should help viewers make sense of the broader idea of Interconnection – since each of these ideas is actually about unnoticed interconnections, and is a concrete illustration of how interconnections work.

Highlighting Key Terms and Ideas

A point closely related to the last one is that key learning ideas need to be highlighted in some way, rather than being mentioned in passing during a fast-paced presentation. Throughout the series there is an assumption that the viewer either already understands, or does not need to understand, basic terms and concepts. *Strange Days* should take the opportunity to explain and educate, even on points that seem clear and obvious to those who work on these issues. For example, in *Dirty Secrets* the term “nutrient” is likely to be taken in the wrong way – in our culture, it is difficult for that term not to imply something positive. As it discusses problems in the Chesapeake Bay and elsewhere, the episode could take just a bit more time to explain how, for example, something that is supposed to make things grow can make the *wrong* things grow.

Highlighting Solutions

On issue after issue, we have found that people are more engaged with a topic when they see it not as a “hopeless” problem but as one where interesting and effective solutions are available – or where there is at least a very real hope of finding practical solutions. Providing viewers with a positive, practical vision of what the world could look like is an important way of building interest and empowerment. In the *Predators* episode, showing that marine reserves are working and that fishermen support reserves are great ways to convey solutions AND connections. On the other hand, the idea that there are effective solutions is more effective when presented earlier in a conversation or communications piece. Finally, problem prevention is also a powerful solution to highlight - people would rather prevent a problem from occurring than fix it later.

Concrete Causal Stories

Topos recommends focusing more attention on conveying concrete causal stories that give viewers a new understanding of how things work. This is an important tool for building understanding and engaging interest, and there are many examples in the material that could be illustrated and emphasized further. For example, the following is an underlying causal sequence that would be helpful if it were highlighted and presented in a more straightforward way to viewers:

Sewer water isn't adequately treated → "sewage" gets into *cenotes* and flows underwater to the sea → Coral is sickened

Concrete Analogies

Concrete analogies are one of the best tools for helping viewers get a handle on large or abstract systems (including natural systems). Topos recommends adding more of these to the material, or carefully selecting a few that will serve as organizing ideas or images. For example the following are illustrations of topics where analogies would be useful:

- The "invisible" interconnections that are at the heart of most of the episodes might be framed as pieces of a giant "hidden architecture" that we are gradually uncovering and understanding.
- The gyres that collect plastic and other ocean debris might be compared to the corners of rooms where dust inevitably accumulates since any breeze can blow dust *towards* the corner but there's no breeze to blow it *away* from the corner.

We hope that these observations and recommendations will help the Sea Studios team make the most of their extraordinary platform.

Chapter I: Connectedness

Perhaps the most overlooked aspect of communications on environmental and other issues is the importance of conveying connections, of all different kinds. Too often, advocates and other communicators rely on a limited message toolkit dominated by a Sympathy Frame or Crisis Frame, for instance. Over time, audiences inevitably feel fatigue as the list of crises and sympathetic victims grows ever longer.

Our research consistently finds that the public is far more motivated to act and more receptive to progressive perspectives when a message frame incorporates the idea of Connection. By Connection, we mean two distinct elements: 1) people's connection to a given problem and 2) connections within or between problems, i.e., making broader systems visible.

Neither of these types of connections is something that Americans tend to "see" as they consider various issues. While stories of the lonely cowboy and stories of community barn-raising are both part of Americans' collective psyche, it is our strong sense of Individualism that tends to dominate. Furthermore, the media's episodic, shallow coverage of most issues limits people's considerations of the influence of broader causal systems (Iyengar 1991). However, research conducted by Topos confirms findings in the academic literature noted in the prior section - that when causal connections are made available to people, they respond with better understanding of the problem at hand. (See examples below and in the following chapter.)

More than with most issues, people are likely to see the interdependencies in nature. However, even when people can comprehend and embrace these interdependencies, the end result can be a hand's off stance, rather than motivation to be pro-active. Communicated incorrectly, people can easily come to believe that human interference can only things worse, even if humans created the problem (Kempton et al 1995). The challenge is to talk about connections in a way that leads to public action rather than inaction.

Connecting People to the Problem

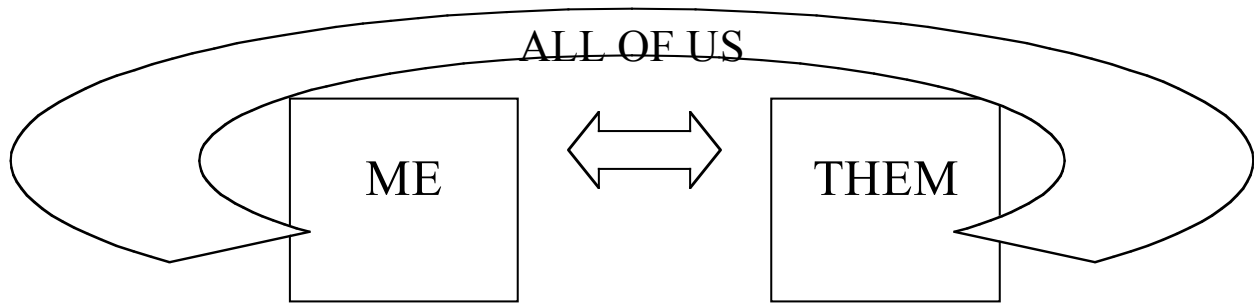
Underlying all the facts, stories, values and so on, much of political discourse is a struggle over responsibility. Who is responsible for causing the problem and who is responsible for fixing it (see Iyengar 1991)? For example, if one believes the poor are largely responsible for their own fate because they made bad choices (didn't pursue the right education, had a child too young, etc.), then it follows that the poor are responsible for fixing the problem (by going back to school, getting a second job). This way of thinking absolves the rest of us from any responsibility for action.

As communicators strive to motivate the public to act on an issue, they tend to rely on one of two alternatives to connect people to a particular problem:

- ◆ **Self-interest:** It is about Me and My Family and therefore it is in my self-interest to act.
- ◆ **Altruism:** I should act because I am a caring person and helping is the right thing to do. This issue is about Them/The Other, and not me.

What communicators typically overlook is a third alternative that unites Me and Them in an Interconnected Interest perspective.

- ◆ **Interconnected Interest:** It is about something of which I am a part (All of Us) and therefore it is practical and responsible to act.



On issue after issue, we find that the third perspective is not readily apparent to average people, but when it is made visible to them, they are more supportive of progressive policies and are more motivated to act. For example:

Global Relations In work on foreign policy, Topos principals have suggested that the dominant Security or Fear Frame (*we have to protect ourselves from terrorists who are trying to destroy our way of life*) causes people to turn inward and be protective. Fear triggers a desire to protect oneself and one’s family, and makes people susceptible to efforts to cut foreign aid, close down the borders, and compromise civil liberties (Public Knowledge 2007). Therefore, it is relatively easy to trigger isolationist tendencies. Three quarters (77%) of Americans agree, “We should pay less attention to problems overseas and concentrate on problems here at home” (PSRA/Pew Jan. 2007).

In contrast, a Global Interdependence Frame (*our fate is connected to the fate of the rest of the world, and we aren’t safe if others aren’t safe*) causes Americans to see themselves as world citizens. They then become more likely to support efforts to solve global problems in partnership with the rest of the world (Public Knowledge 2007). When people are given the choice of two views, one of which connects American interests to the interests of people around the globe, people set aside isolationism and side with interdependence. Fully 87% side with the view, “When people in other parts of the world are facing instability and feeling insecure, this creates conditions that diminish U.S. security” over the alternative view, “The U.S. is so strong that such conditions in other parts of the world have little real impact on U.S. security” (Knowledge Networks 2006). The Interconnection perspective, once pointed out, creates a different mindset and sets up

a very different conversation about solutions.

Poverty In researching approaches to advancing policies to benefit low-wage workers, Topos principals found that the dominant Sympathy frame causes some people to feel sorry for the poor, but does nothing to connect middle class voters' interests to the interests of the poor. Some might support a low-wage agenda for altruistic purposes, but they also tend to believe that the poor need to help themselves and not rely on "handouts." By contrast, framing the agenda in terms of improving *the economy* allows people to see how their interests intersect with the interests of the working poor, since entrenched poverty and a shrinking middle class influences the overall economy and quality of life (Public Knowledge 2004).

In short, people need to see their relationship to each other to become more motivated to address the problem.

Making Systems Visible

In addition, people need to see the systemic influences on a problem, the causal connections, to understand how a problem is created and what effective solutions would entail. Big-picture actions and interventions are typically designed to influence systems not "fix people," so efforts to promote deep change need to connect the dots for people by making the systems visible. This sophisticated understanding can be difficult to communicate and is typically at odds with most conservative rhetoric, but is essential to advance progressive approaches over the long-term. For example:

Health When considering ways to improve human health, people readily think in terms of personal choices (diet choices and exercise), but find it very difficult to think in terms of the social determinants of health. Even when these factors are made visible, the pull of the *individual behavior* perspective is so strong that people frequently revert immediately to a conversation about personal choices. This mental obstacle keeps the public from supporting the progressive policies that could prevent health problems (Topos 2008).

Poverty Americans frequently explain Individual Success by pointing to an individual's hard work and good choices, rather than noting the importance of public education, national infrastructure, or policies that enable some people to accumulate wealth. This focus on individual hard work and choices obscures the role of systems, and therefore suggests that people who are poor must have made poor choices - s/he did not get a good education or had a child too young, etc. For example, 39% say "lack of effort on his or her own part" is more often to blame when a person is poor, than circumstances beyond their control (40%) (RT Strategies 2006). Even if people know better on some level, individualism is a strong default perspective.

Global Relations The complexity of global relations and the dynamics that create global problems can intimidate people. Frequently, Americans are reluctant to express

views on foreign policy and instead want to leave it to the experts. After the events of September 11th, “Why do they hate us?” was an oft-repeated question. This was an opening in the public dialog to emphasize relevant connections and systems, though some were urging, “It is foolish to try to understand Evil.”

Yet even on this emotional topic, when the causal connections are made visible, people side with the complex view. More people choose the statement:

Trying to destroy terrorists is not enough, because if we are too heavy-handed, it just breeds more hostility and more terrorists. It is necessary to address the sources of the hostility in the larger societies that the terrorists come from.

than the alternative statement,

The only way to counter the threat of terrorism is to find and destroy terrorists. It is naïve and pointless to try to understand their intentions or imagine that we can address any of their concerns (61% and 35% respectively) (Knowledge Networks/Worldpublicopinion.org 2006).

Connecting the dots is a critical but difficult challenge. We’ve seen that people have difficulty connecting the dots *within* an issue domain and even more difficulty connecting the dots *across* domains as Sea Studios is trying to do. Communicating the social determinants of health is challenging, in part, because people are not used to linking income and education with illness. People can understand the connection between environment and health if they are thinking of toxins or disease in the environment, but are likely to struggle to see a relationship between environment and economic well-being, for example.

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We turn next to a discussion of environmental connections and an overview of several specific topical issues that are directly relevant to Sea Studios’ storytelling.

Chapter 2: Issue Focus

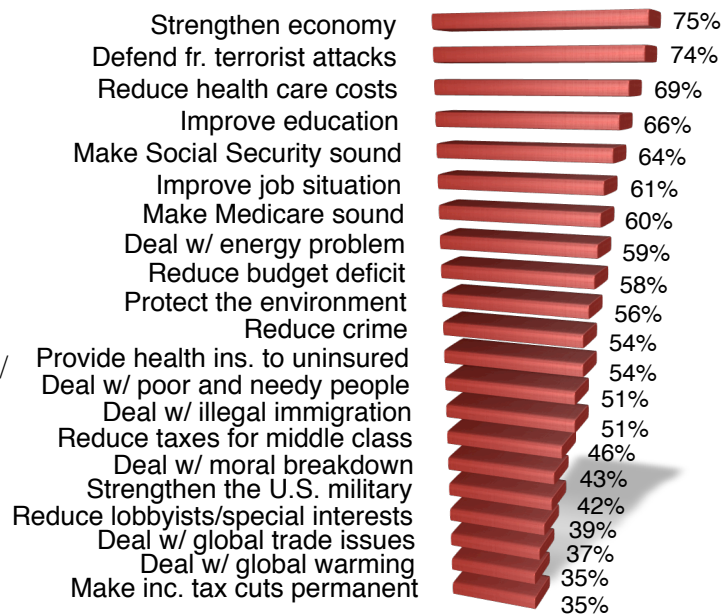
In this section we bring specific attention to a number of issues of particular interest to Sea Studios. The intent is *not* to provide a meta-analysis of public opinion. (Sea Studios has already commissioned a thorough review of relevant public opinion by Knight-Williams Research Communications.) Rather, this section is intended to provide the necessary context on a few key issues to arrive at useful communications insights (particularly as it relates to awareness of relevant types of connections).

Sea Studios is communicating with a public that views the environment as a middling priority, and that is largely satisfied with the condition of the environment. Fully 85% are satisfied with the quality of air where they live, and 77% are satisfied with the quality of water (Gallup April 2007). A majority (56%) believes the condition of the environment where they live is positive (12% excellent, 44% good), though only 20% believe the condition of the environment in the world today is positive (1% excellent, 19% good) (CBS/ NYT April 2007)

Therefore, while people may care about the environment, there appears to be little motivation to engage on this issue, making Sea Studio’s task particularly challenging.

Priorities for President and Congress

% Top Priority
PSRA/Pew, January 2008



But agenda-setting is not the only problem confronting environmental advocates. Too often, environmentalists communicate in ways that 1) separate humans from the environment, and 2) fail to communicate environmental systems. For example, when people think of the impact of global warming, more say plants and animals will be affected than themselves or people in first world countries. While people know better at some level, their default reaction is to focus on “protecting plants and animals” rather than on protecting our home and way of life.

Communicators reinforce this view when they consistently blame humans for “hurting” the environment. Instead, communicators need to go out of their way to remind Americans that humans exist *within* the environment and are *connected* to it. Similarly, rather than educate the public about how environmental systems work, advocates tend to focus on dramatic crises or

“cute critters.” An understanding of systems will go a long way toward creating the connections people need to make the right choices on this issue.

Climate Change

There have been significant advances on some key global warming indicators. For example, worry about global warming has increased substantially. Currently, 37% “worry a great deal” about global warming, up from 26% as recently as 200 (Gallup 2008). In addition, Americans have generally set aside the scientific debate over whether or not global warming is real (unless reminded that a question exists). The percentage reporting, “most scientists believe that global warming is occurring” increased 17 percentage points from 48% in 1997 to 65% in 2006 (Gallup 2006).

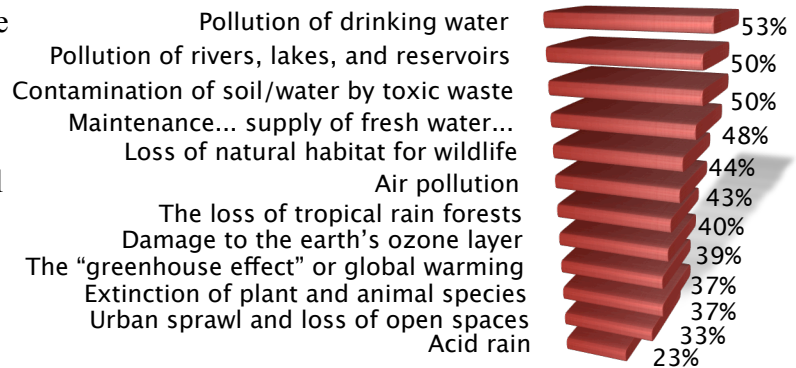
Therefore, if Sea Studios decides to communicate on this issue, it should avoid any reference to “scientific debate” or even an assertion that “a majority of scientists agree.” Instead, Sea Studios should assume the truth of global warming and not provide any cue that allows the viewer to question that fact.

However, there are mixed responses concerning the urgency of the problem. Some surveys suggest the public views global warming as an urgent problem. Three quarters (78%) say it is necessary to take steps to counter the effects of global warming right away (CBS/NYT April 2007). A majority (57%) says if nothing is done to reduce global warming, it will be a “very serious problem” (ABC/WP/Stanford 2007).

At the same time, compared with a range of concerns facing the nation, global warming ranks near the bottom of the list of national priorities, with only 35% saying global warming should be a top priority (PSRA/Pew 2008). Even among environmental issues, global warming rates higher than only two issues: urban sprawl and acid rain (Gallup 2008).

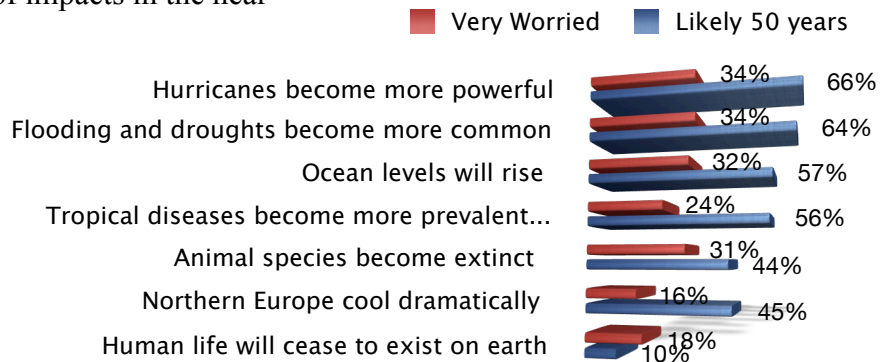
Worry About Environmental Issues

% Great Deal of Worry
Gallup March 2008



Though majorities believe a number of impacts are likely to occur within the next 50 years, few express serious concern. Significant percentages now believe the world will see a variety of impacts in the near future, including: hurricanes will become more powerful (66% within 50 years), flooding and droughts will become more common (64%), ocean levels will rise (57%), and tropical diseases will become more prevalent (56%). Fewer believe animal species will become extinct (44%), Northern Europe will cool dramatically (45%), or human life will cease (10%) (Gallup/USA March 23-25, 2007). However, the public’s level of worry about these impacts is far lower: In no instance does more than one-third report they are “very worried” about any of the listed impacts.

Global Warming Impacts
 % Very Worried, % Likely within 50 Years
 Gallup Feb. 22-25, 2007



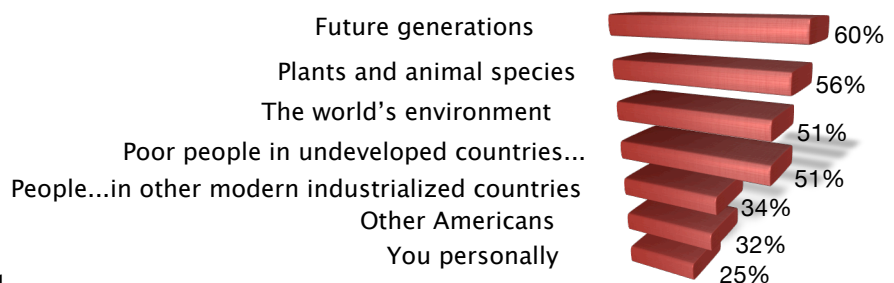
Americans are not convinced the effects of global warming will be catastrophic. Just one-quarter (28%) believe “there will be extreme changes in climate and weather, with disastrous consequences in some parts of the world,” while 38% say “there will be major changes in climate and weather, but most people and animals will be able to adapt.” 19% think “there will be minor changes that will have little effect on the way people live” and 11% volunteer there will be no changes (Gallup/USA March 23-25, 2007).

However, lack of issue urgency and low levels of concern about global warming impacts are not necessarily corrected by shrill, emotional communications featuring catastrophic consequences.

What prevents the public from recognizing the importance of global warming and engaging in solutions?

One possibility is that framing global warming as an environmental issue has prevented people from seeing the human implications of the issue. When asked what is most threatened by global warming, people first say “future generations.” Importantly, however, more believe plants and animals will be threatened than people (ABC/Time/Stanford 2006).

Global Warming Threatens
 % A Great Deal
 ABC/Time/Stanford 2006



Another possibility is that people continue to be confused about the causes of global warming, which prevents them from actively supporting the right solutions. Research suggests that a concrete analogy - “the carbon dioxide blanket that surrounds the Earth and traps in heat” - effectively communicates what global warming is and what causes it (Aubrun & Grady 2001). When exposed to this explanatory model, respondents’ priority for government action to reduce global warming jumped by 11 percentage points (GQR 2002).

When communicating about climate change, Sea Studios should include a concrete analogy to describe what causes global warming. This approach creates the second kind of connection discussed earlier, i.e., helping people understand environmental systems and how they work. Furthermore, Sea Studios should seek to create a human connection to the issue (though the most effective way to do this is unclear and needs further investigation).

Ocean Ecosystems

There are many contradictions in people’s understanding of ocean ecosystems. In part, this reflects a lack of understanding about the issues facing oceans. However, it also reflects people’s internal conflict over man’s relationship to the environment.

People are largely unfamiliar with the status of oceans and coastal waters, though they suspect coastal waters are in worse shape than open, deep oceans. When they consider the health of coastal waters and ocean beaches, most believe they are in bad shape (23% excellent/good, 49% fair/poor, 27% don’t know). In rating the open, deep oceans away from the coasts, many more say they simply don’t know their status (23% excellent/good, 30% fair/poor, 47% don’t know) (Belden Russonello & Stewart/American Viewpoint 1999).

Furthermore, they suspect that humankind is having a negative impact on ocean ecosystems:

79% side with the view, man-made stresses are endangering coastal regions and the ocean’s ability to sustain itself may well be leading to long-term damage and serious problems

21% side with the view, the oceans and coastal regions overall are so vast and healthy that they can continue to absorb pollution and other kinds of man-made stresses for the foreseeable future (AAAS 2003)

Since the public has little awareness of the health status of ocean ecosystems, this strong assessment that man-made stresses are endangering oceans may be largely due to the broader “man harms environment” narrative that is so common in environmental storytelling. Sea Studios should be careful to avoid this simple but common device in favor of a more educated approach that will provide the information citizens need to make wise choices.

The public has mixed views considering whether it is possible to protect parts of the ocean from problems in other parts of the ocean. Forty-seven percent believe “the ocean, like the land, has

certain areas that are unique and can be protected from pollution or overfishing,” while nearly as many (43%) believe “the ocean is one giant body of water and protecting one particular area of it from pollution or overfishing is useless since anything that is done in one part of the ocean will affect every other part” (Mellman 1999).

Pollution as the primary problem facing oceans has problematic consequences for how people think about ocean policies. The centrality of pollution as the problem facing oceans attributes responsibility to industry rather than individuals. Most believe that ocean pollution is caused by waste dumped by industry (66%), rather than trash and litter (16%) or runoff from yards, pavements and farms (14%) (Belden Russonello & Stewart/American Viewpoint 1999).

Knowing that people assume industry pollution is the major threat to ocean ecosystems, Sea Studios’ communications will have to overcome this narrow understanding to provide a fuller understanding of the challenges facing ocean ecosystems.

Fortunately, when given a chance to connect humans to the oceans, people respond very strongly. Three-quarters (75%) strongly agree, “If the oceans are in trouble, so are we.” Fully 84% strongly agree with the statement, “We have a responsibility to protect the oceans so future generations can enjoy them;” and 82% strongly agree, “The destruction of the ocean is a threat to the health of future generations” (Mellman 1999).

People are willing to consider the ocean as a shared responsibility. Nearly all Americans (92%) side with the statement “Because no one owns the sea, we have the responsibility to preserve it and it is okay to restrict the activities of individuals and companies in the ocean,” over the statement “Because no one owns the sea, there should be no restrictions on the activities of individuals or companies in the ocean” (4%) (Mellman 1999).

Furthermore, describing extinction as a “missing link” in the system is very compelling. The public understands the interconnectedness of nature and the gap that can be created by extinction of a species. Two-thirds (65%) strongly agree that, “When a species of fish or marine mammal face extinction, an important link in the ecosystem is being threatened” (Mellman 1999).

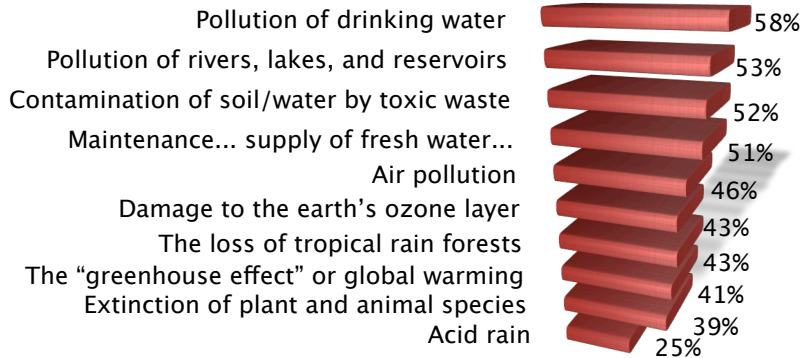
The limited survey evidence that is available suggests that the public readily understands humans’ connections to ocean ecosystems, and the interdependent nature of creatures within an ecosystem, when the idea is put forward. With the right verbal and visual cues, Sea Studios can quickly establish a sense of connectedness in its communications.

Freshwater

The Gallup Organization has been tracking Americans' level of worry about a number of environmental issues going back nearly 20 years. Four of the tracked issues have some relationship to "freshwater." Currently, the four "freshwater" issues top the list of environmental concerns: pollution of drinking water (58% great deal of worry), pollution of rivers, lakes and reservoirs (53%), contamination of soil and water by toxic waste (52%), and maintenance of the supply of fresh water for household needs (51%).

Worry About Environmental Issues

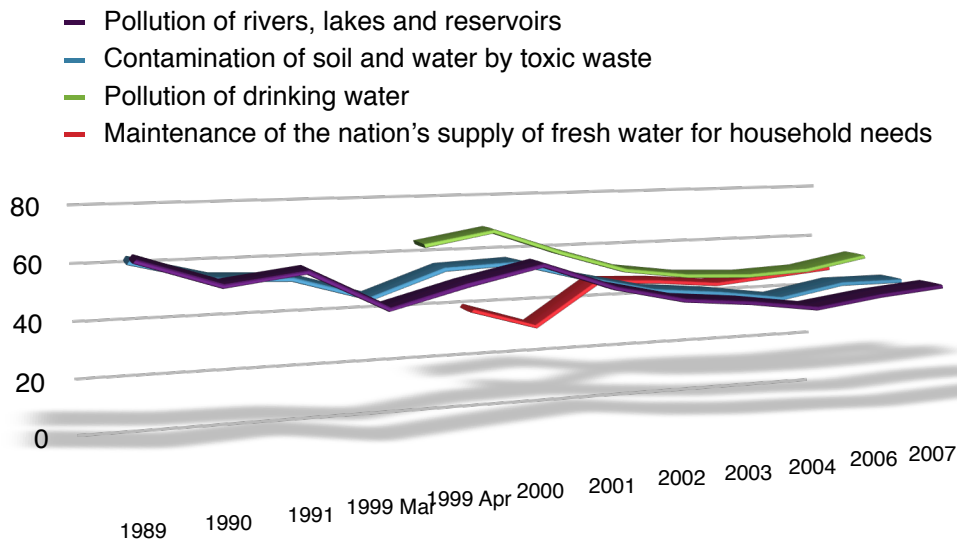
% Great Deal of Worry
Gallup March 11-14, 2007



However, the level of worry for most of these issues has declined over time. The level of concern about pollution of rivers, lakes and reservoirs is 19 points lower than at its height (72% in 1989), pollution of drinking water is 14 points lower than its high point (72% in 2000), and contamination of soil and water is 17 point lower than its high point (69% in 1989). Only "maintenance of the supply of fresh water for household needs" is at a stable, or relatively high point compared with earlier years (Gallup trend, see graph below and table on following page).

Worry About Freshwater Issues

% Great Deal of Worry
Gallup Trend, Most Recent March 11-14, 2007
Percentages in Following Table



	Pollution of rivers, lakes and reservoirs	Contamination of soil and water by toxic waste	Pollution of drinking water	Maintenance of supply of fresh water for household
1989	72	69		
1990	64	63		
1991	67	62		
1999 Mar	55	55		
1999 Apr	61	63	68	
2000	66	64	72	42
2001	58	58	64	35
2002	53	53	57	50
2003	51	51	54	49
2004	48	48	53	47
2006	51	52	54	49
2007	53	52	58	51

Though freshwater issues generate higher levels of worry than other environmental issues, concern has been declining. Furthermore, it is quite possible that public priority for these issues has more to do with securing clean water for humans to drink than for protecting freshwater habitats. Sea Studios should be cautious and not assume this is a high priority for Americans.

While the environment is one of the few areas in which people are more likely to think in terms of systems and connections, this perspective is far from robust. In qualitative research with a small group of informants conducted to uncover the broadly shared cognitive models people rely upon when they consider watersheds, analysis found that even the word “watershed” is likely to trigger a mental model that causes people to consider impacts on the water itself (such as trash floating in the river), and obscures the role of the land and the relationship between land and water. This pattern of thought makes it more difficult for people to understand why land development or farm policy are related to the quality of the “water” (Cultural Logic 2006).

Few surveys test this kind of connection, but in one poll on biodiversity, an explanation of ecosystem mechanisms – which also connects to human welfare – tops the list of reasons for maintaining biodiversity:

Marshes, forests, rivers, and streams are nature’s tools for cleaning the air and water we rely on. By destroying these habitats, humans are endangering the services that nature performs for us. 74% very important reason (Belden Russonello & Stewart/American



Viewpoint 1999).

Forests in the U.S. are important because they clean our drinking water. 72% very important reason (Belden Russonello & Stewart/American Viewpoint 1999).

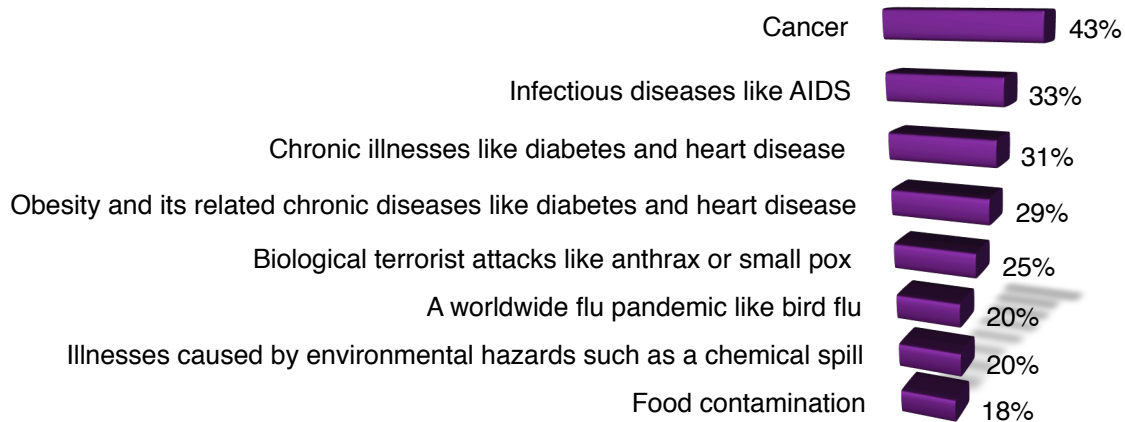
Again, people readily accept a systems view of environmental issues when communicators include an easy-to-understand description of the system. Such a view can be particularly compelling.

Health

Health concerns typically top the list of public priorities. However, when Americans think of urgent health concerns, they tend to be worried about the cost and accessibility of health care. The environmental connection to human health is typically not a top-of-mind concern.

For example, when asked to rate a number of funding choices for health prevention and research, “illness caused by environmental hazards” is rated second to last - just 20% would spend “much more” on that priority.

Government Funding for Prevention and Research
 % Much More
 Greenberg Quinlan Rosner 2007



Sea Studios cannot assume that viewers will automatically make the connection between the environment and human health without an explicit description.

This doesn't mean that Americans do not associate environment and health. Pollution, for example, is readily associated with health concerns. Two-thirds (67%) are concerned (28% very concerned) about the air pollution produced by cars, in terms of their own personal health (ABC/Time/WP January 2005). In fact, some surveys suggest the public is more worried about pollution than they have been in the past. A majority (52%) reports that the country is losing ground in dealing with environmental pollution, roughly 20 points higher than the response through most of the 1990s (PSRA/Pew, Feb. 2007).

This dynamic suggests that when people are thinking about their own health, the environmental context does not come to mind outside a direct reference to pollution. Sea Studios will have to carefully develop communications that allows people to see the broader health implications of our interactions with the environment.

The idea of *prevention* is a very powerful motivator for action on health issues. The public would rather prevent a problem than fix it later. When told that seven percent of health dollars are spent on researching causes and preventing disease, as opposed to treatment, two-thirds would prefer more be spent on research and prevention (65%, 39% much more) (GQR 2007).

The strong association between prevention and health may be an opportunity for effective communications on environmental issues. If Sea Studios can portray fixing an environmental problem as preventing human illness, the public may find it easier to connect their fate to the fate of the environment.

While there is little guidance from the survey data, it may be that a health angle is a particularly effective frame for communicating the need to assist developing nations. When they consider reasons to give aid to foreign countries, alleviating poverty and fighting health problems top the list:

From the following list of possibilities, please select the top three most important reasons, in your opinion, for giving aid to poor countries... (TNS 2006)

- 56% Alleviating poverty
- 51 Fighting health problems like AIDS
- 37 Preventing breeding grounds for terrorism
- 37 Contributing to global stability
- 34 Helping with natural disaster relief
- 30 Encouraging democracy
- 18 Helping poor countries trade
- 16 Gaining political allies
- 3 None of these (Vol.)
- 4 Don't know/Refused

If environmental issues can be effectively positioned as health issues, it may help build public support for getting foreign aid funding for environmental issues.

Poverty

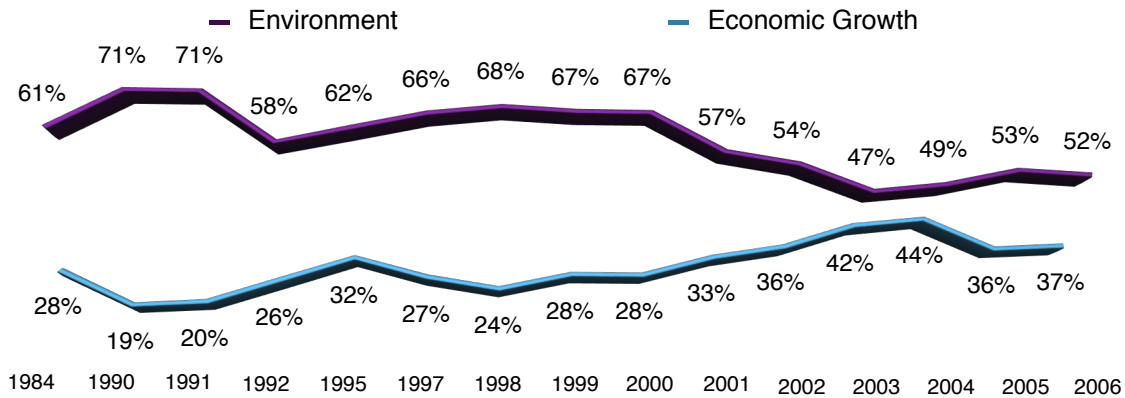
In the United States, economic considerations have typically been fodder for the environmental opposition. Most often, opponents suggest that protecting the environment is costly, creating a trade-off mentality between the economy and the environment.

Americans generally reject this trade-off, though in recent years there has been a dramatic decline in people's willingness to prioritize the environment over the economy.

Prioritize Environment or Economy

% Environment, % Economy
Gallup Trend

Which one of these statements about the environment and the economy do you most agree with--- protection of the environment should be given priority, even at the risk of curbing economic growth, or economic growth should be given priority, even if the environment suffers to some extent?



The new economic trade-off suggested by the opposition is between energy and the environment. This approach currently has some traction, as people are nervous about the cost of energy and U.S. reliance on foreign oil. Between two choices, far more would have the government prioritize developing new energy sources (62%) over protecting the environment (21%) (CBS/ New York Times April 2007). This finding points to both the opportunities and obstacles in an economic/energy approach - the public would rather prioritize energy, even if it has environmental consequences.

Keeping this context in mind, Sea Studios is proposing a new kind of environment-economy relationship, based on the economic opportunities that come from a thriving environment (or economic struggles from a decimated environment). There is not much guidance in available survey research to determine how the public currently understands this dynamic or how open they would be to such an argument. Like health, an effective message tying poverty and the environment may offer new opportunities to build support for foreign aid to address environmental problems in developing nations. More importantly, if Sea Studios is able to

develop this approach in an effective way, it could go a long way toward blunting the opposition's current argument, both domestically and internationally.

Globalization and the US Role in the World

Many of the environmental problems Sea Studios features are in distant parts of the world, outside U.S. borders. Is it possible to mobilize Americans to act on behalf of ecosystems on the other side of the planet? What does public opinion research suggest about the relevant attitudes that direct American willingness to engage with other nations to solve global problems?

Certain foreign policy objectives consistently rate as high priorities for the American public. Preventing the spread of weapons of mass destruction, addressing international terrorism, developing energy supplies, protecting American jobs, and addressing disease and disasters are typically rated highly.

A survey conducted last year by Public Agenda shows environmental concerns among the top tier of issues, which some analysts have suggested represents a change in American priorities. Since several issues (terrorism, global economy, etc.) were absent from the list, it is too soon to tell if environmental issues are moving up on the agenda.

Though the environment may not be a top foreign policy priority, nearly three-quarters believe ocean protection requires a global approach:

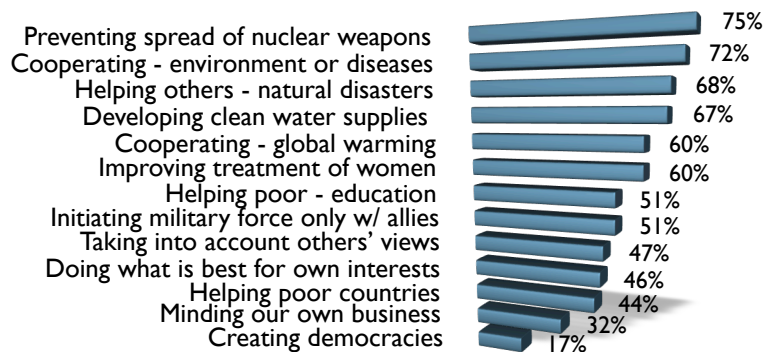
72% side with the view protecting the ocean's resources is best done in a global way, such as through international agreements about fishing and oil-drilling practices

29% side with the view oceans are best protected when countries take responsibility for

Foreign Policy Goals
% "Should Be Very Important"
(Knowledge Networks 2006)



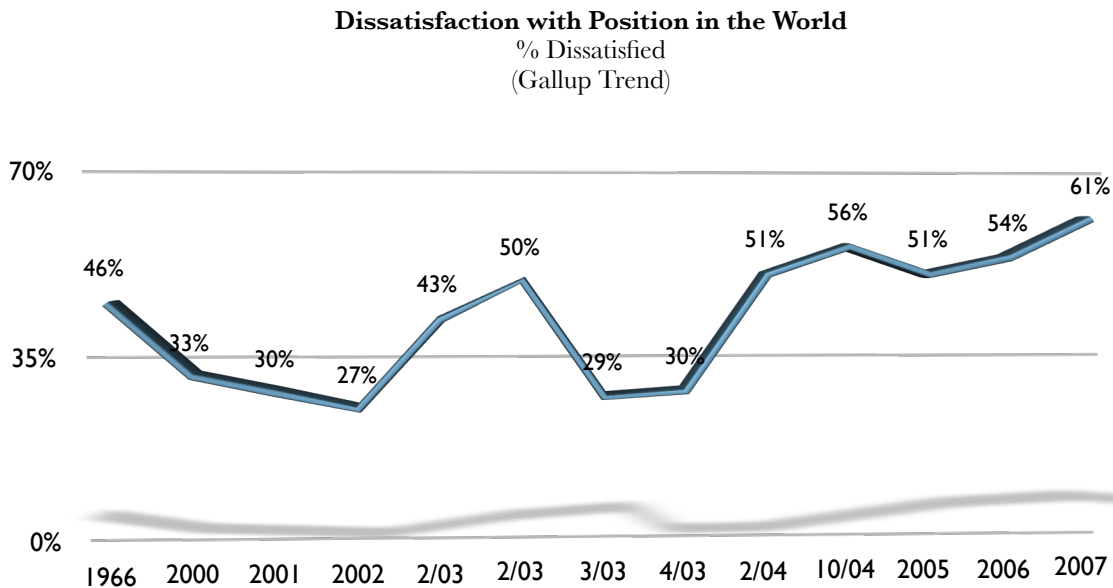
Should be Important to Our Foreign Policy
% Very Important
(Public Agenda 2007)



their own coasts and do not interfere with the practices of other countries (AAAS 1996)

Just as on the domestic front, Sea Studios faces a public that has not necessarily placed environmental issues on the global agenda. However, Americans believe ocean policy is an appropriate issue for global engagement.

Americans currently lack confidence in the nation’s ability to address problems and play a positive role in the world. Americans worry that the image of the U.S. has deteriorated internationally, damaging goodwill and cooperative relationships. Seventy percent (70%) believe America’s leadership role in the world is “off on the wrong track” (Marttila 2007). Sixty-one percent (61%) are dissatisfied with the position of the United States in the world today, the highest response Gallup has recorded on this measure since 1966. As they consider the view of the rest of the world, a majority (54%) believes the U.S. rates unfavorably (16% very unfavorably), the highest response since Gallup started tracking this measure in 2000 (Gallup trend, most recent February 1-4, 2007).



The American Can-Do spirit has been diminished. The percentage agreeing with the statement, “As Americans we can always find a way to solve our problems and get what we want” is at a low point, with just 58% agreeing – the lowest measure in 20 years and 16 percentage points lower than in 2002 (PSRA/Pew Jan. 2007).

This dynamic creates a very serious challenge for Sea Studios. Even if Americans are convinced of the need to address a problem, they are currently less likely to feel confident engaging with other nations to address global issues.

Image matters, according to respondents, because a negative image interferes with cooperative relationships. Three-quarters (73%) side with the statement, “America’s moral authority in the world has declined significantly making it much harder to persuade our allies to work with us.” Meanwhile only 20% side with the view, “Our allies and people around the world still see America as the indispensable nation and they are more than willing to follow our lead on the key issues facing the world” (Marttila 2007). Three-quarters worry (78% worry, 35% worry a lot), “The United States may be losing the trust and friendship of people in other countries” (Public Agenda 2008).

After the events of September 11th, 2001, American support for international engagement surged. Now, however, there are indications of softening support for international engagement. Three-quarters agree, “We should pay less attention to problems overseas and concentrate on problems here at home” (77% agree, 38% “completely agree”). Americans are slightly more likely to agree with this statement compared with 2002, but sentiment is not nearly as high as it was in the early and mid 1990s (PSRA/Pew Jan. 2007). Americans are increasingly likely to agree with the view, “The U.S. should mind its own business internationally” (42% agree, +12 points from 2002) (PSRA/Pew October 2005). In addition, the percentage responding that not getting “involved in trying to solve the problems of other countries” is a “very important” way to reduce terrorism in the future stands at 41%, a 9-point increase from 2002 (PSRA/Pew August 2006).

There is a tendency for members of the public to want to “focus on home” for a change, rather than worry about problems halfway around the world. Again, Sea Studios will need to be cognizant of this dynamic and avoid distancing Americans from the issue.

At the same time, Americans continue to reject isolationism. Though they are increasingly concerned about U.S. actions around the globe, Americans continue to believe it is important to be involved in world affairs. According to Pew trends, fully 86% agree (42% completely agree), “It’s best for the future of our country to be active in world affairs.” While this is a huge endorsement of international engagement, trends demonstrate the percent responding “completely agree” is at its lowest point since May 1993 (PSRA/Pew Jan. 2007).

Americans want to share leadership in solving global problems rather than carry the burden of sole world leader. Only 12% of Americans want the United States to be the single world leader, while just 10% believe the United States should not play any leadership role at all. The vast majority of Americans (74%) fall in the middle, believing the United States should play a shared leadership role. One-quarter (25%) want the United States to be the most active nation in a shared leadership situation, while nearly half (47%) believe the United States should be “about as active as other leading nations” (PSRA/Pew Oct. 2005).

Americans favor a cooperative approach to international relations and do not favor engaging for narrow self-interest. By overwhelming percentages, survey respondents side with the view, “The U.S. should coordinate its power together with other countries according to shared ideas of what is best for the world as a whole” (79%), while only 16% prefer the

alternative, “The U.S. should use its power to make the world be the way that best serves U.S. interests and values” (Knowledge Networks/PIPA 2006). Nearly three-quarters (71%) agree, “The United States should look beyond its own self-interest and do what’s best for the world as a whole, because in the long run this will probably help make the kind of world that is best for the U.S.” (Knowledge Networks/Worldpublicopinion.org 2006).

When Sea Studios makes an appeal for American engagement and leadership on a problem, the message will be far more effective if it includes a substantial role for other nations and is expressed in the spirit of international teamwork. This can connect American interests to the interests of citizens around the world.

In common use, “globalization” typically refers to economic globalization. Polls demonstrate the public is conflicted about the global economy. On one hand, the public likes the idea of “free trade” and the free movement of goods and services. However, the public also believes international trade agreements and the influence of the global economy have damaged the U.S. economy.

Many surveys find conflicting views of “globalization.” One-third say “the globalization of the world economy is mostly bad for the United States” (35%) while nearly as many say it has been mostly good (30%) and 27% say it doesn’t make much difference (ICR 2007). When globalization is described in broader terms as “the increase of trade, communication, travel and other things among countries around the world,” a majority (51%) reports the U.S. has gained more than it lost because of globalization (CBS/NYT February 2007). Part of the difference in response to these kinds of questions may be due to the term “globalization” which is far weaker than other words and phrases describing interactions among nations. The word “globalization” has a more negative connotation for Americans than “international trade” (51% favorable opinion, 71% favorable opinion respectively) (TNS 2006).

The public has a generally favorable view of the free movement of goods between the U.S., Canada and Mexico (70% favorable, 24% very favorable). Two-thirds (64%) favor “freer trade” which the public believes will open new markets for U.S. products (79% agree, 33% strongly), lead to lower prices and more choice for U.S. consumers (78% agree, 32% strongly), make the world more stable by putting people from different countries in contact with each other (71% agree, 29% strongly), and increase prosperity in the U.S. and the world (68% agree, 26% strongly) (TNS 2006).

However, Americans also worry about negative effects of global trade. A majority states “freer trade” costs more American jobs than it creates (59% agree, 30% strongly) and puts the U.S. at a disadvantage due to the nation’s labor and environmental standards (63% agree, 27% strongly). While a slim majority thinks the U.S. will benefit from freer trade (57%), and they personally will benefit from freer trade (55%), much higher percentages believe poor countries will benefit (70%) and rapidly developing countries like China and India will benefit (82%). Finally, fully 81% say multinational corporations will benefit (TNS 2006).

After being exposed to arguments on both sides, a majority of Americans agree with the view that free trade harms the American economy:

54% agree (40% strongly) *For too long, we have been told that free trade is good for us, but in reality it has resulted in record trade deficits, a weakening dollar and the loss of 3 million American manufacturing jobs over the past three years. Good US jobs, from manufacturing to software design, are outsourced to foreign countries every day and, if they are replaced at all, it is by jobs with lower pay and less benefits. We must stop subsidizing companies that take jobs abroad and start rewarding those that create them here at home.*

41% agree (30% strongly) *In today's world, technology has enabled individuals and businesses anywhere to network and compete with each other. This presents America with new challenges, but also with new opportunities. Failing to step up to the challenges will only cause us to fall behind the rest of the world. Rather than attempting to reverse globalization, we must move quickly to improve our education system and update our economic institutions to compete and maintain our leadership position in the world economy (Greenberg Quinlan Rosner/POS 2006).*

Members of the public divide concerning the right approach to global trade. Some surveys show a preference for protecting American jobs with trade barriers over faster economic growth:

56% *Trade barriers should be kept because they protect American businesses even if this might result in slower economic growth*

35% *Trade barriers should be removed as this will ensure faster economic growth even if this might result in some risks for American businesses (TNS 2006)*

Meanwhile, other surveys show a slight preference for reducing trade barriers to expand opportunities for U.S. products over restricting foreign imports to protect American jobs and products:

40% *The best way to help Americans here at home is to restrict foreign imports to protect American jobs and products, and to limit the number of legal immigrants who come here to work.*

49% *The best way to help Americans here at home is to expand our opportunities in the global marketplace by reducing trade barriers so that US (United States) products can compete fairly, and attract and retain immigrants who bring special skills to the U.S. (Hart/Newhouse 2007).*

“Globalization” and the movement of goods and services around the world is not a compelling approach to create a sense of global connection. Instead, Sea Studios should focus on communicating international teamwork and feature examples of other nations taking the lead in problem-solving.

Chapter 3: Specific Guidance and Recommendations

Communications “Traps”

The Topos Partners’ research experience on Americans’ thinking on topics related to the idea of Interconnection – and particularly in the context of natural systems – has shown that, unless given lots of help to do otherwise, average people tend to view these topics through a variety of counterproductive lenses.

These perspectives can be thought of as Traps that *Strange Days* should help people out of, or at least avoid pushing them into. Each of the Traps we discuss has the power to limit people’s learning and understanding – and even their interest and engagement, if the misunderstanding means that a point doesn’t seem as new or clear as it should.

Note that each of these is a kind of “*default*” view – one that people easily slide into even if they know better on some level. It is one thing to get people to momentarily take a different perspective – it is another to help them towards developing new habits of thinking about the world.

Importantly, each of these Traps is *surprisingly* powerful. Each is a pattern of perception that people can default to *even when you might think they’ve been given enough information/context not to*. In other words, the team should go to great lengths to help people avoid these Traps.

Since some readers of this document will be intimately familiar with *Strange Days* episodes while others may be less familiar, the Traps are communicated at two levels - 1) a general description of the dynamic and 2) one or more examples of how the Traps are relevant to *Strange Days* episodes.

CLEAN WATER TRAP

Americans have a strong tendency to think of a *healthy* body of water as one that has *clean-looking* water. The bigger picture – the damage to ecosystems that occurs from over-fishing, for example – is much harder for people to focus on, and they need help visualizing the ways that a body of water can be “clean” and yet *damaged*.

For example, in the opening segment of the Dirty Secrets episode, the Yucatan segment, we first learn of massive development on the shoreline, so when we learn coral reefs are in trouble, it is likely that viewers will understand this as a story about tourists in big hotels polluting the sea. “If it isn’t kept clean, the corals and fish, crystal waters and white sands, could all be lost.” Ocean

pollution from people and businesses located right by the shore is a familiar story. (We then move to pristine forests in search of pollution, and much later learn that lack of water treatment in urban areas is the likely culprit. By that time, though, viewers may have registered the familiar idea that hotel pollution is a big problem and “moved on” in their own minds.) Therefore, the Yucatan story comes across as being mostly about coastal sewage, which will not seem particularly new, mysterious, or intriguing – and does not do as much teaching as it could. The very new and interesting thread in this segment about contaminants being introduced into the water far inland and harming the reef – which could create a connection between what happens inland and what happens to the coral reef – does not come through clearly enough. This is a missed opportunity to explain the connections that lead to damage to ecosystems by focusing on the underground river system – e.g. “Unless we protect the invisible river system that the whole region depends on...”

Implication

The Strange Days team should make every effort to help viewers see ocean issues in terms of connections and ecosystems – and avoid using images that allow viewers to focus on the familiar idea of “point source” pollution, or that inadvertently suggest that a beautiful body of water is therefore doing fine.

SEPARATE ENVIRONMENT TRAP

Even people who are very concerned about the environment usually have a strong tendency to see it as something separate from ourselves. “The environment” is usually understood as something that some people happen to be more “interested in” than others – rather than something we are *all* intimately connected to, part of and dependent on. Something that should be preserved for its own sake, due to its beauty or spiritual value, for instance – rather than for all our sakes. Even if they know better on some level, this “Precious Object” perspective on the environment is a strong default view that can reduce engagement and prevent people from appreciating the importance of a number of critical ideas.

In *Dirty Secrets*, there are several places in the text that imply that the Environment should be cordoned off and protected, rather than recognizing that man is part of the environment – interdependent with it. For example: “Seeing the water we depend on and recognizing how we affect it are critical steps toward assuring ITS future,” could read “OUR future,” in order to reinforce humans’ connection to environment.

Frequently, the impression goes beyond human-environment separation to humankind as a destructive force. This is a Trap that *Strange Days* consistently falls into; a common narrative throughout the series is “humans damage environment.” This perspective can easily reinforce the idea that humans exist separate from the environment. Instead, it would be helpful to tell stories in ways that put humans back *into* the environment. Alternative ways to express the role

of humans might include: the *unsustainable* actions we have taken, our *unwitting* actions, learning from the past, etc. – all of which should imply our need and intention to protect the natural systems we depend on.

To take an example from the series, the immediate impression at the beginning of Troubled Waters is *Man ruins nature*. The idea that “We didn’t know any better” comes towards the end of the episode. Viewers might take away a more constructive perspective if the presentation of these issues focused on understanding past mistakes. In this instance, “Humans are now questioning conventional wisdom” may be an interesting and effective organizing idea. The question, “What are the chemical cocktails doing to us?,” is probably an effective way to establish human connection, but the human link could use more emphasis and be introduced earlier.

Importantly, placing man within the environment is not the same as demonstrating that man relies upon the environment as a resource. In the One Degree Factor, eating caribou is featured as a way to demonstrate human connection. This kind of resource relationship is likely to be ineffective since it would be easy for viewers to conclude, “Oh well, they’ll have to eat fish instead.”

Implication

The Strange Days team should make every effort, in language and imagery, to erase the distinction between the environment and “us” – to reinforce that when we hurt natural systems we are hurting ourselves, etc.

ECONOMIC ZERO-SUM TRAP

A familiar habit when thinking about natural systems is to balance the importance of protecting them with the “inevitable costs” in economic terms – e.g. ruining businesses with the cost of replacing old equipment, killing jobs by preventing development projects, etc. That environmentalists are willing to sacrifice the economy to save plants and animals is an enduring attack.

Even the *Strange Days* audience can be expected to think reflexively along these lines whenever the material gives them an “excuse” to.

There are a few places in the Dirty Secrets episode that could easily trigger thoughts about the economic costs of environmental protection. For example, when the narration talks about a popular tourist destination as “a favored destination of job-seeking Mexicans.” This reinforces the idea that the resorts are an economic boom for struggling poor people, suggesting a growing economy and development is at odds with a thriving environment. Instead, the economy is thriving *because* people want to enjoy and experience the environment, but this idea is likely to be lost by most viewers.

Similarly, in the same episode, the Chesapeake Bay is described as being “more like a gold mine than a coal mine.” We assume this is a reference to the richness of life in the Bay, but viewers may easily think of the fishing industry that needs to be supported (even at the “cost” of the environment).

Implication

Strange Days should make this Trap harder to fall into in a number of ways: by avoiding references to a economic/environment tradeoff; by making “solutions” sound practical and affordable wherever possible; by making “unseen” costs clear; by framing various kinds of environmental damage as unacceptable, rather than simply the regrettable costs of having a civilization (see Modernization Trap, below).

MODERNIZATION TRAP

Americans (and others) tend strongly to see damage to natural systems as the inevitable, if unfortunate, cost of progress. According to this default narrative in people’s minds, human civilization is constantly moving “forward” in ways that gradually harm the environment in various ways. “Everyone knows” that pristine natural spots are becoming scarce, beautiful natural landscapes are being covered by sprawl, various species are fighting an uphill battle as their habitats are reduced, etc. In short, the modern world is gradually getting dirtier, noisier, uglier and further from nature.

At the same time, there are clear benefits to a modern lifestyle. This sets up a stark choice between the modern condition, with its costs, and “going back” to the past, which seems to be a nice fantasy, but not a practical possibility.

The resulting fatalistic, “Oh well” attitude can significantly reduce public engagement in problem-solving.

The first segment in Predators hints at broken ecosystems caused by human activity (the construction of dams), but it would be difficult for the average viewer to understand how this regrettable loss might have been prevented. After all, as the episode points out, the dam provides electricity for millions.

Implications

Rather than focusing solely on problems, Strange Days should highlight better approaches wherever possible, e.g., technologies or approaches that can accomplish our goals in ways that are less destructive.

In fact, these superior approaches should be characterized as smarter, more current, more modern; they are the future, and fast becoming the present. The current, destructive ways

should ideally be framed as being on the road to obsolescence, or “dead ends.”

Terms like “alternative” (e.g., “alternative energy sources”) should be avoided because they suggest that certain approaches are marginal, niche methods that are not part of the “main storyline” of human progress.

Naturally, though, there is a fine line between offering viewers hope and falsely implying that “the problems have been taken care of.”

NEGATIVE INTERCONNECTION TRAP

As Sea Studios seeks to communicate connections, it needs to be aware of the ways in which Americans view global connections negatively. For example, when Americans think about our connections to other countries, the default mental images are often negative – from economic competition to military quagmires, to contagious disease, to endless foreign aid. Americans are far less likely to have a clear sense of how international connections can be positive, and are generally unaware of how and why global relationships are deliberately created.

We also suspect based on our research of topics like global warming and ocean conservation that people have little sense of how different parts of the world and different problems are connected via Earth systems. Global perspectives do not come naturally for most people.

As Sea Studios considers the connections between places and problems, it needs to be cognizant of the likely impact of *negative* connections on public understanding. For example, the Invaders episode includes several examples of the negative consequences of invaders, with less attention to the broader systems in action. The central emotions viewers are likely to feel as they experience this episode are fear and disgust. On the one hand, fear is attention-getting and memorable. However, viewers may easily come to short-sighted, limited solutions (kill the invaders with the harshest poison available), rather than achieve the broader learning that is possible (we should be careful and cautious in our advances, in order to protect natural systems).

For the most part, the episode positions these creatures as scary monsters to be feared. In fact, the termite story goes by with no mention of the constructive role these species might play *in their home territory*. An alternative narrative might have framed them as “pieces out of place” rather than scary invaders. According to this narrative, in their own environment certain species play an important and valuable role, but outside their ecosystem they create problems.

How to prevent an invasion from occurring in other ways and places is not an obvious part of the narrative. In some instances it is not clear how the invasion began. In one instance (water hyacinth) the seemingly innocuous introduction of the plant is a situation that seems impossible to prevent. Viewers may conclude, “That’s a shame, but we’ll just have to try to clean these messes up when they occur.”

The implicit lesson in the episode is that solutions need to be thoughtful and based on natural systems so the problem is not worsened. However, this lesson is not as obvious as it needs to be

for the viewer to absorb the learning. The broader Interconnection message is undermined by the negative connections outlined here. Viewers are likely to be wary of connections rather than embrace and understand them.

Implication

It would be helpful to minimize references that imply “threats from abroad,” or that might suggest that the smart, safe course is to reduce our exposure to people, problems, organisms, etc., in other parts of the world. This recommendation includes minimizing references to invasive species without providing a context for understanding the broken systems that led to the problem in the first place.

Wherever possible, the material should also offer viewers concrete, practical examples of international cooperation, international systems, or international structures that produce positive results.

VAST EARTH TRAP

Finally, average Americans have a default sense (even if they know better on some level) that certain things are simply too big for us to really hurt through human activity. For example, it is easy for people to imagine that pollution only affects the local areas where it is produced or discarded. It is harder for average people to “see” that actions in the U.S. might have an effect on the air or water in Asia or Africa, etc.

On one level, the entire *Strange Days* enterprise is aimed at defeating this Trap. The series effectively addresses the problem in the invasive species episode, for instance, where viewers are given a clear image of shipping that crisscrosses the oceans, inadvertently carrying species to and from every corner of the world.

Implication

Of course this is one of the central points of Strange Days, but it is worth remembering how much help viewers will need in really grasping how vulnerable Earth systems are to human activity.

* * * * *

In the next section of the paper we turn to some strategies that our research suggests can help communicators avoid these Traps and successfully communicate ideas about Interconnection.

Suggested Approaches

Communicating Interconnection presents major challenges, but the Topos partners can offer a number of general recommendations based on our previous research on related topics and on principles from our respective fields of expertise.

Each of these should be treated as recommending a general direction, which could take a number of different concrete forms. Of course there is no substitute for ultimately testing materials with real members of the intended audience.

Finally, we note that it is one thing to get people to momentarily hold a new perspective on a topic (one that involves deeper or broader understanding, for example), but it is quite another to help them towards developing new *habits of understanding*. The entertainment value of the series is very high, but at times it seems to shy away from the appearance of “teaching.” The series provides a unique opportunity to focus the public’s attention on new and important ideas, and could do even more to incorporate teaching techniques (without damaging the overall pace and style of the series), to assist in conveying new and complex information. The stronger the communication tools are, the greater chance they will have a real and lasting effect on people’s understanding.

ORGANIZING IDEAS

In any form of communication – and especially if one of its goals is to teach – it is extremely helpful to include *organizing ideas* that are returned to frequently. These organizing ideas help people make sense of and remember the more specific information they are given. The organizing ideas make sense of material that can otherwise seem like “a lot to take in.”

This is, perhaps, the most common missed opportunity across the *Strange Days* series. Creators should ask themselves, “How do the four segments fit together? In one sentence, how would we want the viewer to summarize this episode?”

For instance, from a communications perspective (which may or may not be perfectly consistent with an ocean science perspective), *Dirty Secrets* could be organized around the idea of *movement of contaminants*. Rather than the “fresh water” to “salt water” trajectory, it may help to make explicit the idea that water picks up contaminants on land, which it takes to estuaries, the sea, and ultimately the open ocean. In this conceptual model, contaminants do not go away; they wait and slowly destroy. Contaminants also leave land to go up into the atmosphere, which ultimately also ends up in the ocean. Introducing the idea, “The ocean is downhill from everywhere,” at the beginning of the program with a graphic of the world to show movement, may help people fit the pieces of the puzzle together as they view the program. The mystery component might be introduced as “needing to find where along the way the water is getting

contaminated” with an aerial shot that moves from the seaside resort, beyond the urban areas to the “source” in the pristine forests. This way of organizing the story would allow viewers to pull back and see the big picture of the whole system rather than isolated pictures of reef, seaside, forest, underground rivers, city, etc.

As currently presented, viewers need to be able to put together the story for themselves. Even intelligent and attentive viewers are much more likely to retain the key points if a clear summary is presented. Such a summary is especially useful if presented *at or near the beginning* of the story even if it is provided in just enough detail to intrigue people and then “fill in the picture” as they watch the segment.

Similarly, in the Predators episode, the lack of an organizing idea in the first segment is particularly problematic since it sets the stage for the rest of the episode. While the role of predators is discussed, this segment is more difficult to understand than the subsequent two segments.

This episode would be improved by providing an organizing idea at the beginning. The closing idea: “When once we asked, ‘Can we live with them?’ we are now asking, ‘Can we live without them?’” is very powerful and would be a good approach for introducing an organizing concept such as the invisible frameworks of which the predators are part.

While it begins with some problematic perceptions, Troubled Waters does a better job of providing organizing ideas. The big ideas are 1) invisible interconnections of different types and 2) conventional wisdom is all wrong. Smaller amounts of chemicals are not necessarily better than larger amounts, and testing for toxicity one chemical at a time can yield a different result than testing combinations of chemicals. The idea that current chemical safety laws (that focus on minimum doses) have it all wrong is largely buried and could be emphasized more. The chemical cocktail idea has more prominence and is also an effective metaphor for discussing combinations of chemicals.

There are a number of candidates in the series that might be used effectively as organizing ideas at one level or another – ideas that are returned to several times throughout a segment, an episode, or even the series as a whole.

For example:

Daily Dose – The idea that we are affecting natural systems through small, regular, unnoticed events and actions might be powerfully conveyed by the phrase “daily dose,” and might be an effective line to return to.

Hidden Connections/Structures – The idea that there are Hidden Connections (e.g., the underground Yucatan river system) is a potentially powerful organizing idea that could be returned to repeatedly.

More specifically, *moving water* creates a hidden, unnoticed connection

from one place to another, and one part of the world to another, and so do *moving air*, and *moving organisms*.

Coral reefs as protectors - We speculate this could be a powerful insight for viewers, that could help them understand the reefs in a whole new way. As currently presented in *Dirty Secrets* the idea goes by very quickly, and may also be overwhelmed by images of devastation.

Canary in the coalmine - This is mentioned briefly in *Dirty Secrets*, but it is a powerful organizing idea that could be explained or generalized more so that viewers could use it to understand some of the other observations.

KEY LEARNING CONCEPTS

For particular segments, episodes or the project as a whole, it would be helpful to choose some key concepts that viewers should come away understanding – each of which should be related to the broader themes of the project.

Examples would include:

Dead zones

Watersheds

Estuaries

Each of these is referred to in an episode, but is not necessarily communicated in a context that helps viewers understand them more clearly. We are confident based on our research experience that none of these ideas is understood clearly by a broad audience.

Each key concept could be explained quickly and in concrete terms. The teaching might happen through very quick and visually striking animations, for instance, or asides from the narrator, that would be in keeping with the overall style and pace of the series.

Concerning estuaries, for example, an animated insert that explains estuaries in a few seconds, or a parenthetical explanation in the voiceover that highlights their function, e.g., as nurseries, could go a long way toward helping the viewer understand what they are and how they work.

Similarly, since average people don't understand watersheds, it might be useful to include a graphic or animation that shows (A) the map/extent of a watershed and (B) a "3D" view showing how a body of water is at the "bottom" of a watershed and all water ends up there.

If viewers had an "Aha" experience about particular topics like these, it would help them make sense of the broader idea of Interconnection – since each of these ideas is actually about unnoticed interconnections and is a concrete illustration of how interconnections work.

HIGHLIGHTING KEY TERMS AND IDEAS

A point closely related to the last one is that key learning ideas need to be highlighted in some way, rather than mentioned in passing during a fast-paced presentation. Throughout the series there is an assumption that the viewer understands basic terms and concepts. *Strange Days* should take the opportunity to explain and educate, even on points that seem clear and obvious to those who work on these issues. Again, “pausing” for a quick animation or other explanation should be something that can be accomplished without breaking the style or pace of the overall production.

There are several examples of key ideas that get passed over quickly.

In *Dangerous Catch*, “most of the world’s fisheries are depleted” is a critical, unfamiliar point that could be given more emphasis, reinforced with more particulars, or stated in a more compelling way. The goal would be not simply to make the basic concept more accessible, but also to make it “*easier to think*” and therefore more likely to be applied to examples viewers encounter later in the media. Similarly, “fish is being managed in a sustainable way” does not have clear meaning for average people. Analogies such as fishing in ways that “protect Earth’s life support systems” or protect the “foundations” of life on Earth might be helpful.

In *Dangerous Catch*, there is a causal point about European subsidies and their impacts on fishing fleets and fish stocks that is important and could be made more strongly and clearly.

The term “nutrient” sounds positive to average people. The *Dirty Secrets* episode which discusses the problems created by excess nutrients in bodies of water, could say more about how nutrients can be a negative thing when they “make the wrong things grow.” Once again, the idea of something being “out of place,” might be useful.

SOLUTIONS

On issue after issue, we have found that people are more engaged with a topic when they see it not as a “hopeless” problem, but as one where interesting and effective solutions are available, where there is a very real hope of finding practical solutions, or where problems can be prevented. Providing viewers with a positive, practical vision of what the world could look like is an important way of building interest and empowerment. Critically, these solutions, or the idea that there are effective solutions, need to be presented early in the conversation. Too often, *Strange Days* presents the solutions late, after viewers may have already determined that nothing can be done.

There are a number of solutions in the series that could be given even more prominence, such as new approaches to aquaculture and to water treatment in the Yucatan.

In the Predators episode, the coral reef segment conveys that the whole system is collapsing due to overfishing all types of fish (not just predators). Showing that marine reserves are working and that fishermen support reserves, is a great way to convey solutions AND connections. Note: handled less carefully, this example could emphasize the *cost* of marine reserves, as opposed to the *inevitable cost* of overfishing.

In Troubled Waters, mercury-eating plants (using nature to help nature), is a very interesting solution that could be highlighted more. Combined with the concrete idea of starting the clean up where animals are known to feed, this idea illustrates the availability of practical, “doable” solutions.

MOTIVATION

It is easy for communicators on any topic to take it for granted that the topic is interesting and important. After all, the communicators devote an important part of their life to thinking and talking about the topic, and it can seem self-evident to them why others should care about it too. But on topic after topic, this turns out not to be true – for the obvious reason that other people have *not* spent nearly as much time thinking about the topic and its implications. The result is that communications often *assume* that people will find a topic intriguing and important, instead of *help* people understand why it is meaningful and interesting.

In the case of the *Strange Days* project, two clear types of motivations would be Survival (i.e., the general idea that human health, food supplies, economies, etc., depend on well-functioning natural systems) and values-related ideas such as Responsibility for the Future (which relates to how we want to see ourselves, as people and as a society).

Ideas like these could be built more often into the narration, in subtle rather than “preachy” ways, to help ensure that the experience of viewing the series has real meaning and importance for viewers.

CONCRETE CAUSAL STORIES

One important tool for building understanding, engaging interest, and helping people “see” ideas that are usually invisible, is *concrete causal stories* that give people a new understanding of how things work. People like to understand things in terms of cause and effect, and once educated they feel empowered by the sense that they now “get” something that they didn’t get before.

Of course, causal stories also help make the idea of Interconnection more real and solid in people’s minds. For example, the Predators episode focuses on the wide-ranging impacts on an ecosystem when one link in the system is removed. The Wolf segment is a complete and understandable causal story about how this ecosystem normally works, and how one change in the system ends up disrupting it.

There are many fascinating and important causal stories to work with in the *Strange Days* material. For example:

Sewer water isn't adequately treated → "sewage" gets into *cenotes* and flows underwater to the sea → Coral is sickened

"Nutrients" get into Chesapeake Bay → algae overgrow wildly → massive amounts of algae die and sink to the bottom at the end of their life cycle → bacteria that feast on the dying algae use up oxygen → Areas near the bottom become "Dead Zones"

Strange Days can improve the educational value of the series by paying more attention to causal stories like these and by taking greater care to convey them in a memorable and user-friendly way. *Dangerous Catch*, for example, begins with some big-picture references that this is "all about fish," that fishing affects life on land, the climate, etc. It might be possible to go even further in conveying that fish are at the center of critical systems. We can imagine a kind of "causal chain" visual concept that leads from a European parliament TO subsidized European fishing fleets cruising the African coast TO local African fishermen catching nothing TO hunters heading to the bush TO local markets filled with cheap bush meat and little, expensive fish TO empty landscapes with few animals, including few lions and THEREFORE more baboons TO kids not going to school and so on. Viewers need to see it as more than a fascinating story; it is one of many that are unfolding within the complex ecological structure of Earth.

These stories can be effective at engaging interest and attention if they are properly highlighted and returned to as organizing ideas. In fact, they might make intriguing subjects of mystery and investigation: "Uncovering the Causal Links," "Discovering the Cause-and-Effect Chain," etc.

CONCRETE ANALOGIES

To help viewers think about the idea of Interconnection, it is very helpful to offer concrete analogies. The human mind evolved to be especially effective when focusing on physical perceptions, physical actions, and physical cause and effect. Concrete analogies allow people to harness this power and focus it on more abstract concepts like ecosystems or climate patterns.

For example, previous research by Topos partners has shown that it is helpful to talk about sustainable food systems using ideas like Foundations (of a building) or Life Support Systems. Sustainable food production is agriculture or fishing that *doesn't damage the foundations of the food chain*. The foundations are things like healthy soil, thriving lake and ocean ecosystems, etc.

Wherever possible, *Strange Days* writers should look for concrete analogies to explain the events and processes they are featuring. The following lists several illustrations where analogies would be useful. (The analogies themselves might be improved on.)

- The gyres that collect plastic and other ocean debris might be compared to the corners of rooms where dust inevitably accumulates since any breeze can blow dust *towards* the corner but there's no breeze to blow it *away* from the corner.
- The "invisible" interconnections that are at the heart of most of the episodes might be

framed as pieces of a giant hidden *architecture* that we are gradually uncovering and understanding.

- The heat-trapping *blanket* of CO2 is a powerful way to explain how global warming works.
- “No fishing zones” could be explained as fish *nurseries* where fish can grow and populations can rebound.

FORMATIVE RESEARCH SUGGESTIONS

In this section of the White Paper we discuss options the Sea Studios team should consider regarding original qualitative research to help refine the material – including future TV episodes and pieces for other media.

As suggested in the funding proposal to the National Science Foundation, we believe the qualitative testing can be most useful if it includes questions focusing on specific keys to *Strange Days*’ effectiveness.

Having reviewed the past and current *Strange Days* material and considered the relevant communications issues in depth, we recommend the following as focused research questions for qualitative testing of material.

Can a given piece be more effective if it:

- ... presents a clear organizing proposition at the beginning?
- ... offers a concrete analogy or metaphor to help explain a central causal proposition?
- ... uses Exploration or Uncovering of a Hidden Structure as an alternative to the Mystery format for episodes?
- ... consistently treats “the environment” as a set of systems and structures that human life depends on, as opposed to a separate but precious domain that is worth preserving due to its inherent worth?
- ... presents “Solutions” early and prominently?

Answering these questions would require creating two alternative treatments for a given piece and comparing the discussions that ensue.

Judging “effectiveness”

To judge whether one piece is more effective than another, the researchers would be interested in general questions including: the lessons learned by viewers, the degree to which they are

motivated to take action (including learning more), their assessments of a piece's overall evocativeness, and so forth.

More specifically, we recommend that evaluation of subjects' discussion focus on the following questions:

- How would subjects *summarize the key idea or learning* from the material?
- What if anything would subjects *pass along to friends* about the material?
- What evidence is there in subjects' discussion that they have understood *causal mechanisms* in new ways?
- What evidence is there in subjects' discussion that they have appreciated *interconnections* (between one place and another, between one phenomenon and another) in new ways?
- In what ways (and how often, how strongly) do subjects express the idea that there are *practical, concrete steps that should be taken* to improve the situation?

Note that these are rather difficult tests of the material. Previous evaluations of *Strange Days* episodes (by Knight-Williams Research Communications) have clearly established that the material is interesting, compelling and informative. The evaluation approach suggested here moves beyond these questions to the question of whether the material has the potential to initiate genuine perspective shifts in viewers, to begin the process of creating new habits of thought.

Survey of Topic Understanding

Finally, while it would fall outside of the scope of qualitative testing originally envisioned for the project, we suggest that Sea Studios team members consider commissioning an original survey to explore areas of issue understanding that have not been adequately covered in previous research. While the Topos team has conducted a thorough search of the relevant literature (and was already familiar with most of it), it has not been possible to find previous research that adequately addresses Americans' understanding of topics like:

- How humans are connected to oceans: health-related connections, survival connections, stewardship connections and so on,
- The relationship between freshwater, coastal and deep ocean ecosystems, and
- How global Earth systems actually bridge seemingly separate environmental problems.

Both as guidance for the *Strange Days* material itself and to inform the field more broadly, we recommend that Sea Studios consider an investment in a carefully designed survey to explore exactly such questions.

Conclusion

In upcoming seasons of the series, as well as in material for the web and other media, the *Strange Days* team will have the opportunity to revisit a number of fundamental assumptions about the content and nature of the project. While the work so far has established a very strong brand identity with consistently striking style and intriguing stories, there is an opportunity to take the project to a new level of effectiveness through careful consideration of some fundamental questions.

As this paper has emphasized throughout, the theme of Connection is a powerful and important one for several reasons.

- ◆ Average people currently don't tend to see the kinds of connections the material focuses on, but when pointed out, the connections can create new and more constructive mindsets.
- ◆ Connections give people clearer understandings of what needs to be done, why, and by whom.
- ◆ Earth systems, by their nature, provide fascinating and concrete examples of the broader idea of Connection which is central to so many issues.

One important question the team can revisit is how the “mystery” format helps or hurts with the effort to convey connections. The mystery theme is certainly engaging, but it also means that the ultimate point of a given piece – the “solution” to the mystery – is held off until later in the presentation and cannot act as an organizing idea from the start.

The mystery format also means that ideas about solutions – a positive vision of how things could be done better – is held off until late in the story.

There are important pros and cons to be weighed in light of the discussions earlier in the paper. The team might consider whether the mystery format could be compatible with providing some early, helpful “hints” about the basic ideas viewers should ultimately take away.

There may also be alternative formats that would maintain the intriguing and edgy style of the project. For example, the series might be framed as the *discovery or exploration* of:

- ◆ a hidden and previously unknown Underground Structure – pharaoh's tomb, hidden city, Mayan palace complex, etc.,
- ◆ a Hidden Map, showing previously unknown paths of connection, or
- ◆ a Hidden Railroad – or other structure that carries cause and effect from one place to another.

A creative team could certainly improve on these ideas if a decision is made to rethink the mystery format.

If something as basic as the mystery format is in question, then maybe the *title* of the project is also open to reconsideration. What expectations does the title “Strange Days” set up for viewers? Is it compatible with the idea of eye-opening new perspectives on how the world works, or with the idea that solutions and positive alternatives might be presented front and center? Alternative titles might focus on the Hidden Structures that the project explores.

From the Topos perspective, the *Strange Days* project represents a unique and powerful opportunity for enlightening Americans on some fundamentally important topics. We hope that the considerations here and in the rest of the paper can help the *Strange Days* team make the most of the opportunity.



Founded by veteran communications strategists Axel Aubrun and Joe Grady of Cultural Logic and Meg Bostrom of Public Knowledge, Topos has as its mission to explore and ultimately *transform the landscape of public understanding* where public interest issues play out. Our approach is based on the premise that while it is *possible* to achieve short-term victories on issues through a variety of strategies, *real change* depends on a fundamental shift in public understanding. Topos was created to bring together the range of expertise needed to understand existing issue dynamics, explore possibilities for creating new issue understanding, develop a proven course of action, and arm advocates with new communications tools to win support.

www.topospartnership.com



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Appendix I: Evaluation Methodology

[For reference, the following is excerpted from the funded grant application to the National Science Foundation.]

The research team will conduct a number of open-ended small group discussions with members of the target audience (PBS viewers). Target audience members will be pre-screened to meet eligibility criteria before they are invited to a group discussion. Discussants will be selected to reflect PBS viewership (1+ hours per week) and existing engagement on social issues (registered to vote and involved in the community in some way). In addition, discussants will be pre-screened to represent a range of demographic groups, specifically: gender (an even distribution of men and women), race (a mix of racial groups), education level (a range of educational levels), and age (between 18 and 55 years old). All participants will receive a cash honorarium for their participation. Recruiting will place a priority on the projects' underserved public audience, to ensure these audiences are well represented in the sample.

A total of 12 small group discussions will be conducted in three locations, for a total of 40 - 45 respondents. The discussions will last roughly 1 hour, during which time participants will be exposed to one or more experimental episode treatments in concept board form, an approach that is common in advertising research as well as many other fields. For example, some respondents may see episode treatments featuring global issues with an exclusively international focus, while other respondents may see the same treatments with one difference – that they include domestic examples. The concept board will include visual representations of the look and feel of the episode (high-quality photography of the episode topics, key words and phrases, coloration). To prevent moderator bias, a description of the episode will be recorded on audio and may also include sound effects to more richly convey the intended look and feel of the episode. Importantly, in this pre-production phase, we will not try to replicate every detail of each episode. Instead, we will be investigating central choices in story design that we hypothesize may influence viewers' issue understanding and motivation.

An open-ended, but guided discussion will follow. The subsequent discussion will review participants' overall reactions to the episode, knowledge gained, areas of confusion, emotions triggered, and willingness to act. Questions for discussion will include:

- What is your reaction?
- How would you summarize the main idea in one sentence?
- What is the problem? What is the cause?
- What is the solution? What can/should be done about it?
- Who is responsible for addressing this problem?
- How important is this, really?
- Why does it matter?
- How does this make you feel?
- Did you learn anything new? If so, what?
- Was there anything confusing? If so, what?

Data Analysis and Reporting

All the interviews will be transcribed and subjected to standard methods of qualitative analysis to determine changes in the patterns of discussion based on the experimental treatments¹. Using hypotheses that will be developed after the White Paper and Workshop, the research team will create criteria that would indicate whether or not a particular treatment moved research participants' comments in a more informed and productive direction. By comparing the patterns of discussion, we will identify the storytelling choices resulting in increased issue understanding and engagement. The research team will review how respondents' conversations differed based on the episode treatment to which they were exposed. Depending upon the agreed-upon hypotheses defined at the end of phase one of the formative evaluation, the analysis would consider whether or not there was a difference in respondents':

- Ability to articulate the main story ideas accurately
- Level of concern about ocean issues
- Understanding of important themes such as global interdependence and the interconnected nature of Earth systems
- Acceptance of the role of humans in creating and solving these issues
- Willingness to support specific solutions
- Interest in engaging with the issue as citizens and consumers

¹ For general discussions of qualitative methods, see Norman K. Denzin and Yvonna S. Lincoln (editors), *The SAGE Handbook of Qualitative Research*. Sage Publications, Inc., 2005; Bruce L. Berg, *Qualitative Research methods for the Social Sciences*. Allyn & Bacon, 2006.

Appendix 2 : The Cognitive Approach

This appendix discusses the assumptions and principles that form the basis for the "cognitive approach" that forms a distinctive part of the Topos method.

Frames

Researchers who study cognition and culture have established that people understand all concepts in terms of related networks of ideas, also known as frames. For example, the concept of a "father" is not understood in isolation, but in connection with understandings of mothers, children, families, biology, responsibility, and so forth. People are usually unaware of the frames they are using, and the frames themselves are usually expressed indirectly. They are revealed most clearly in the language and reasoning a person uses in connection with a concept. Seeming contradictions in the way a person discusses a topic can be particularly enlightening, because they may reveal conflicting frames at work. It should be noted as well that "frame" is a general term — used somewhat differently in different disciplines — to refer to more specific concepts such as cognitive model, cultural model, and cultural theory, discussed below.

Cultural models vs. cultural theories

A cultural theory is a set of explicit propositions that describes the nature of some general phenomenon (D'Andrade 1995). Cultural theories are typically the most apparent and immediately coherent structures of knowledge — the ones that are volunteered by focus group participants for example, and the ones that lend themselves to direct description and summary by the analyst. Cultural theories are closely related to public discourse and, because they are explicit understandings, to rhetorical positions adopted for purposes of argument.

A cultural model, by contrast, consists of a set of largely implicit assumptions that allows a person to reason about and solve a problem (D'Andrade 1995). A cultural model specifies relationships between a given concept and others — specific domains (e.g., School) are typically connected to broader cultural assumptions (e.g., understandings about Achievement or Growth). Cultural models are associated with private understanding and individual reasoning.

A classic example of the difference between cultural models and cultural theories is provided by Strauss's study of blue-collar workers in Rhode Island (Strauss & Quinn 1997). Her informants clearly understood, and explicitly articulated to the interviewer, the American model of self-made Success. In some cases, they even claimed (i.e., expressed the theory) that this style of success was important to them. Close analysis of discourse, however, revealed that these men were actually basing their behavior on an implicit model of a Breadwinner, which is more strongly related to ideals of husband and father than to wealth and status.

Cultural models, while less explicit and more challenging to identify than cultural theories, typically have more directive force, i.e., they are more relevant to understanding what people actually do.

Cognitive Analysis

An important assumption of this view of human motivation is that a variety of cultural models typically compete for expression in a given defined situation. Putting it simply, people often have conflicts about basic issues. For example, many Americans believe that a woman should work outside the home. A contradictory assumption, held by many of these same people, is that women should stay in the home and nurture children. Though contradictions such as this one often find partial resolution (e.g., through the contemporary American notion of the "Supermom"), typically such deeply held beliefs are compartmentalized, i.e., only one will be invoked in a given context.

Cognitive analysis first identifies the relevant deeply held models to which a given subject such as "School" is connected (literally or through metaphor). Second, it attempts to map the fault lines that predict which of the models will be expressed as action in a given situation, often triggered by particular cues. Third, it suggests a picture of the dynamic relationship between public messages, cultural models, and individual action around a given topic.

Metaphors

It is a universal finding of cognitive linguistics that people use metaphors to think, speak and reason about the world, even on topics as familiar as "weather" – i.e., some of the cultural models used to reason about any given topic are metaphoric models. For example, teenagers are sometimes metaphorically understood as unfinished objects, materials that haven't been formed into their final shape. The metaphors people use to think and talk about teenagers contribute to guiding adults' behavior towards adolescents, including whether and how they choose to nurture, ignore, discipline, or otherwise engage with adolescents.

Cognitive interviews

Because cultural models tend to be organized into distinct and recognizable patterns, they lend themselves to qualitative investigation. The cognitive interview format is designed to approximate a "natural conversation" (Quinn 1994). In an interview situation people are often most comfortable providing cultural theories (explicit and familiar explanations which are known to have general currency); the semi-structured interview puts them in a situation which encourages them instead to do their own reasoning about the issues we are interested in, i.e., to use the relevant cultural models.

Skilled interviewing shifts the informant away from a "performing" mode and toward a "training" mode. The natural give and take of a conversation puts informants in a position of teaching the interviewer how to think about a given issue. The analyst's job is to identify cultural assumptions, first in the interview setting by responding to and subtly challenging or asking for clarification of intuited premises, and second in the analysis of transcripts by making these assumptions explicit.

Subjects and sample size

Because a culture is defined by a set of broadly shared understandings and assumptions, studying cultural models is analogous to studying the structure of a natural language. One does not need a large group of speakers to determine the basics of a language's grammar and syntax – a few speakers will typically suffice. Similarly, working with only a relative few subjects, one can identify the commonly held belief system typical of those subjects' culture. In-depth work with a relatively small group of informants has been the norm in cognitive anthropology, allowing researchers to work more closely with subjects than is possible using large-scale methodologies. Findings from cognitive interviews may subsequently be expanded upon and refined through quantitative methods, which may establish, for example, how strongly particular models are held in different segments of the population. Where the cognitive approach identifies the nature of the models, carefully devised quantitative research, using fixed-form surveys for example, can establish how widely the models are distributed (see Kempton et al 1995).