

Science and Media Communications: Turning Data Into Enlightenment

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Mankind stands at the edge of a dark night. Faced with enormous environmental and ecological challenges, we hesitate to take a first step, unsure of ourselves without a clear understanding of what is happening and what is at stake. But science can illuminate the future of this planet.



We ask a lot of science. It has done everything from having given us better-tasting ice cream to the hydrogen bomb. It has answered fundamental questions about the existence of the universe and shown us how to hold up our pants with Velcro. And now we seek solutions to environmental problems - mostly of our own making - that threaten the survival of thousands of species, including us.

In a world where communication can be near instantaneous and pervasive, we look for guidance to make the right decisions

that can ensure a future for this planet. We are looking for subject matter experts who can speak to us - simply and effectively - and science has been doing its best.

But it is just the tip of the iceberg. Science is not doing enough.

In the years that I have spent as a nature filmmaker and media producer, I have come to find that there is an enormous amount of data being generated from countless research projects, expeditions, and studies that is not reaching the people. It's not reaching the policy- and decision-makers. It is not having the impact on the future of this planet as it should.

To a large extent, this is understandable. Scientists, researchers, and academics spend years developing the skills to study, hypothesize, and analyze. They are trained to *make* science but not necessarily to *sell* it. To effectively communicate in today's world requires scientists and researchers to consider an additional discipline to their work, one that understandably may not be a part of their background or comfort level: [Media Communications](#).

Media Communications

The techniques of communicating effectively to a general or targeted audience by utilizing today's available technologies that best transmit a message, generate a response, and invoke action.

This is an exciting time for media communications. The ability to reach people through a variety of communication mediums or formats is literally exploding. But to do it successfully requires strategic planning. One must examine what is to be communicated and then match the appropriate audience with the right communication vehicles to maximize the power of the message. Media communications itself is part science, part art form. And it requires an experienced hand to formulate, execute, and manage an ongoing, dynamic plan.



To demand this expertise of the scientist or researcher is not fair. After all, there are people who devote entire careers to media communications. After having spent over a dozen years in television commercial production, I migrated into corporation communications and marketing. I had seen the power of the visual image in delivering a message and then spent a decade dealing with the full range of message delivery through print, word-of-mouth, visual and audio broadcast and, of course, the ubiquitous Internet.

With the issues facing the world today, the old formula of writing a paper for publication in a scientific or academic journal, followed by a press release from the supporting university or research organization, is becoming wholly inadequate. In fact, as important as it is to the scientists involved or however much it adds to the prestige of the supporting organization, it actually is doing a disservice - it is shortchanging the potential of that research to really make a difference. And that's what is at stake here: making a difference in the future of planet Earth.

Being Proactive

To say the [Internet](#) has become quite a game-changer for message delivery is indeed a gross understatement. From websites to videos to blogs, there is a mind-boggling amount of information awaiting the curious user at the end of a few keyboard clicks. And many academic and research organizations have done what they can to take advantage of this medium with informational websites and videos that document their research or illustrate the results. This is a good step forward, but its one weakness is that it is not necessarily a [proactive](#) step.

To consciously and deliberately bring information to a specific audience, one must be proactive and the Internet does not lend itself to a proactive approach. Fundamentally, it depends on the user to be *seeking* the information. The user either searches for the information via search engines like Google, Bing, Ask or others, or the information is compiled for them by complex search algorithms (like suggested [YouTube](#) videos or products on eBay).

Word of mouth plays a significant role in information delivery on the Internet. The "viral" effect that can bestow a YouTube video with millions of hits within a short period of time is definitely a plus. However, it is more in the hands of others and less of your own making.



Now, none of this is meant to imply that one should disregard the Internet. To the contrary, it is an absolutely vital component of a comprehensive media communications strategy. Its effectiveness can be enhanced by carefully selected keywords or a more traditional promotional approach through the use of banner ads - all designed to nudge the user in your direction.

However, overall, it is more of a "pull" rather than "push" delivery system, and a complete media communications battle plan must have proactive initiatives that bring the information to those who need it most. Someone who is interested in, say, [ocean acidification](#) can find a lot of information on the web, but how do we reach the person who, at this moment, is completely oblivious to the issue? How do we get this information in front of a politician or governmental regulatory body? Do we wait for them to ask or do we find ways to bring to their attention?

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Developing a Strategy

There are many pieces to a media communications strategy and no two plans are alike. Though there can be a methodical process to building it, the end result should be unique to each project. A good starting point is to explore three fundamental and interdependent questions: *what* you want to say, *how* you want to say it, and to *whom*?

The first question we'll explore in more detail shortly. "How you want to say it" opens the door to a vast array of communication vehicles at your disposal. Besides the traditional academic paper, there are solicited or self-written articles for non-academic publications, summary brochures or booklets, press releases, media opportunity announcements, educational curriculum materials, books, direct mail, email, informational websites, blogs, and many, many more. And that's just in the *print* medium.

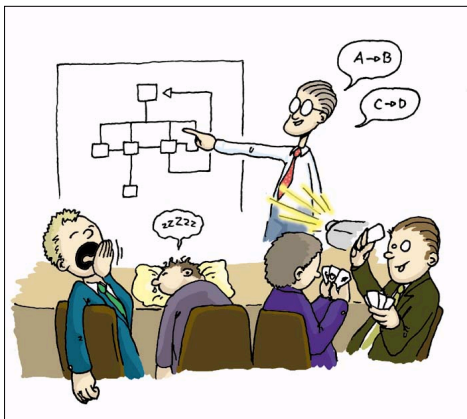
Then there are the visual arts: photographs, slide/"powerpoint" presentations, lectures/speaking engagements, videos/films - either for broadcast, online, or DVD/download distribution, PSAs (public service announcements), webcasts and podcasts, retail digital and outdoor signage and, again, many more. Combined with other high-tech distribution methodologies and outlets, there is a seemingly endless number of avenues to pursue.

But you can't have it all. Some of the determining factors in narrowing down the field to the most appropriate communication channels can be resources (the almighty dollar), time, and even the participants themselves. Is the project best served by having the project members before the camera, before live audiences? Can they be another Carl Sagan? Or should there be qualified stand-ins or representatives; or should the data simply speak for itself?

Tied in very closely with all of this is the question of to *whom* you want to say it. Basically, who it is you are trying to reach. In the business world, this is referred to as identifying your markets. A company considers the best way to reach its different market segments - and a scientific research group developing an outreach program would be doing the exact same thing. Do you wish to reach politicians and other policy- or decision-makers? Adults? Men or women? School kids? Younger children? National or international audiences, particularly ones with different or even opposing cultural perspectives? Even if your decision was to reach all of the above, careful consideration must be given as to how best to speak to each group.

Data Translation: *What did he just say?*

"In polar bear plasma samples no binding of [125I]-T4 to TTR was observed after incubation and PAGE separation. Incubation of the plasma samples with [14C]-4-OH-CB107, a compound with a higher binding affinity to TTR than the endogenous ligand T4 resulted in competitive binding as proven by the appearance of a radio labeled TTR peak in the gel. Plasma incubation with T4 up to 1 mM, a concentration that is not physiologically relevant anymore did not result in any visible competition." - excerpt from a study abstract.



What you want to say usually requires translation. The language of science can be precise and detailed. It can also be obscure and arcane to a non-scientific audience. A media communication strategy succeeds only when it is able to relay a message, a story, to a particular group of people on a level that can be easily understood and appreciated.

However, this does not mean that one must appeal to a lowest common denominator, to "dumb it down" as it were. An effective translation is, in a sense, not a vertical exercise but a horizontal one. You are sidestepping from one language to another. I never underestimate the capacity of any audience to grasp

complex subjects. The difference is in the steps one takes to lead the audience to the conclusion you want them to comprehend.

There are exercises that I take a client through to distill the data down to an easily understood message. While which exercise I choose may depend on the nature of the project or the people I am working with, all have a common trait: they are simple but repetitive, running the data through a linguistic filter over and over again until you are left with just the valuable nuggets of information.

Often, the desired message is one that is relevant to the audience, impacting their lives and provoking some sort of response or action. In advertising, this is the "call to action" - what gets someone off of the couch to order the chrome-plated swizzle stick and deep fryer combo shown on TV. But it must *never* be deceptive or misleading (as can be the case in some advertising). This is critically important. The data depended on scientific accuracy and precision; a successful message depends on credibility and integrity.

It is important that any scientist or group of scientists, who wish to enlist the aid of a media communications specialist, have a good working relationship and a clear understanding with their media counterpart. Veteran nature film producer Chris Palmer described it in his book, *Shooting in the Wild*, when discussing ethical film making, *"It's important to choose partners carefully. Before they begin, the parties need to agree on both the goals of the project and the most ethical way to accomplish them. If a film tells a scientist's story well, it's easier for that researcher to find funding for further study and to cultivate a scientifically literate public."*

Three Message Goals

Often when the data has environmental or ecological significance, a good message can be derived by focusing on three sequential goals: issues, implications, and solutions.

The media communications expert works with the scientific team in translating the data and its results into clearly defined issues. What is at stake here? What does this mean to the audience we are addressing? One might think that it would be fairly obvious and easy to glean from the research, and most of the time it is. However, there are situations where the data is so observational, it takes time to define the conclusions that will resonate with a non-scientific audience.

Issues lead to implications. This is where the message, in essence, becomes *personal*. One of the best ways to get the attention of any group is to show how an issue will affect them personally. For the most part, mankind is a pretty self-centered species. And conservation or



realizing the seriousness of global warming.

environmental issues can seem remote or obscure until the implications to our day-to-day lives can be shown. Research can often identify a cause and effect - that's the issue. But in that complex puzzle we call nature, one effect often cascades into another and another; and from there implications can be ascertained. Part of the success of Vice President Al Gore's slide show presentations and subsequent documentary, *An Inconvenient Truth*, was his ability to take the data and present it as issues and then implications, many of which jarred the viewer into

Providing *solutions* is where the call to action comes into full force. Without solutions, the message then is driving the audience right into a brick wall: What are we to do? What should our political or business leaders be doing? How can I help? The solutions can be specific, directed towards individual or governmental action, or they may simply infer a direction for others to pursue. In any case, providing solutions is as equally important as presenting the problem.

In the opening passage to this article, the importance of a message's issues, implications, and solutions was expressed, ". . . *unsure of ourselves without a clear understanding of what is happening and what is at stake. But science can illuminate the future of this planet.*"

What is happening: issues. *What is at stake:* implications. *Science can illuminate:* solutions. Three fundamental components to an effective media communications strategy.

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"Data for data itself is not very powerful. When data turns into information, it's very powerful. But if it only has a limited audience then it has a limited effect. And so, you have to get that information to the people that make decisions." - Ed Cassano, CEO, InMER.org

To implement a media communications plan to support any scientific research project, it must be considered a vital component of the project, not an afterthought. It needs to be included in the early planning stages - hypothesis, methodology, logistics, analysis, *and* media communications. Depending on the nature of the project and the type of communication plan chosen, documentation and distribution of information could be ongoing throughout, as opposed to a "now that we're done, let's talk about it" approach. This could entail press releases, blog postings, or several other communication channels that can provide expedition updates.

Does this tack pose the hazard of discussing results prematurely, letting the cat out of the bag as it were? Not necessarily. A lot depends on how the communiques are fashioned and how true to scientific objectivity the project is trying to maintain. In any event, whether communication is distributed during the project or not, it must at least be involved from the get go to ensure that all appropriate documentation takes place for future use.

Establishing a New Paradigm

Realistically, some media communication strategies would be less robust than others based on the specifics of the project. A study of, say, oceanic temperature variations throughout the Arctic over an extended historical period may relate to broader themes and issues than a project devoted to the migration patterns of one particular species of insect along the Arctic border. The former could more easily connect with an audience on the larger issue of global warming than perhaps the latter.

For research that has a more narrow or specific focus, *cooperative consolidation* with other researchers can help in bringing together similar or related data that can then be communicated under a unified topic or issue. However, this requires a new paradigm shift in thinking for many



researchers and their supporting academic institutions. A protective, insular attitude often exists regarding research sites and data to ensure maximum credit and attention is paid to those who have worked so hard to either conduct or fund a particular research project.

Given the types of limited communication strategies that have existed in the past (typically, a published paper followed by a press release and perhaps a lecture or two), these kinds of self-centered attitudes are understandable but not productive when one considers the broader, global

effects that the data can have in addressing critically important ecological issues. With cooperative consolidation, combined with a more proactive media communication plan, a greater good is served at a time when it is most needed and equal credit can be bestowed on all of the participants, from which all will benefit.

When I have spoken with scientists and researchers about this new paradigm, their enthusiasm becomes palpable. You can see the spark that originally ignited their love for exploration and scientific study suddenly burn bright again. But it can be fleeting. "Sounds great but that's not how the system works." "It's what we should be doing but our university just won't go for it." The challenge is in finding and supporting those who will be the drivers, the leaders, of this new way of thinking.

Bucking the System

Change will need to come from the top down. Whether demanding more effective, proactive media communication and outreach strategies or reshaping the system through cooperative consolidation, those who will change the system will be the ones at the top of the pyramid - in many cases, that means the *funding sources*.

As a media communications consultant and filmmaker, I am more than prepared and willing to assist any organization in reaching broader audiences. However, truth be told, my position is near the bottom of that pyramid. My interests are both global and self-serving and I am a *support* member to the project team, albeit one with unique expertise. The scientists or researchers are farther up the pyramid, with much greater influence, but they have others to answer to who may be less willing to change established protocol.



Change will come from those who greenlight these projects, whether it's private foundations, universities, investors, or government agencies. The [National Science Foundation](#) (NSF), one of the leading sources of scientific research funding in the United States, now requires an outreach component in all grant proposals submitted for consideration. Coming from a major government-supported funder of research projects, this is a significant step.

Some of the major NGOs (non-governmental organizations) - like [Conservation International](#), [Oceana](#), [WildAid](#), and others - are making great strides in combining scientific research projects with their own fund-raising operations and international outreach efforts. [Seaweb](#) directs their specific resources towards issuing newsletters that include collections of abstracts from published scientific studies - although not "translated" for the general populace, imagine receiving 25 to 35 abstracts on, say, climate change or commercial fisheries each and every month. Would these issues be less questioned if the information were proactively disseminated?

We could very well be on the cusp of a major change in expectations from funding agencies. With media communication strategies designed to reach greater audiences, supporters of scientific research will benefit from increased *return on investment* (ROI), to borrow a term from the business world.

And why shouldn't they? In today's world of limited economic resources, funders are willing to invest more in projects that will further educate target audiences, generate more quantitative and qualitative results (like shifts in public opinion or changes in government or international policy), and bring greater recognition to the supporting organization itself. They expect more than a published paper that ultimately collects dust on a shelf. With ecological and environmental issues pressing down on us, the stakes are too high to demand anything less.

Scientific Research - Time to Reach Out

Having been scuba diving for over 25 years, I have seen the decline in marine habitats, both locally and worldwide. Working in television commercial production and corporate marketing communications for several decades, I came to appreciate the power of the message in reaching a variety of audiences.

Now, as I focus on conservation issues at this stage of my life, deep down in my own personal, ideal world, I visualize a future where messages on coral reef protection share digital signage space with sales at Bloomingdale's at the local shopping mall; where protection of our natural resources is as much a part of our day-to-day psyche as is pondering what we shall have for dinner. A fanciful dream perhaps, but there is no time like the present for science to begin moving in that direction. And media communications can help do that.



Media communications can:

- Reach those who can/should demonstrate change through personal awareness
- Bring forth issues to policy- and decision-makers for direct action
- Provide exposure which can open doors to other research opportunities
- Generate a better qualitative return to facilitate future funding

Throughout history, science has often lead the way in innovation and advancement, but today the world is faced with serious issues that require comprehension and consensus among peoples, their leaders, and their economic interests. Science can provide many of the answers to these pressing issues. However, to do that requires information - ready available, understandable information.

About the author: As media producer, filmmaker, and marcomm consultant, [Richard Theiss](#) has provided high definition images for broadcast networks and non-profits in addition to developing and implementing marketing strategies for multi-billion dollar corporations. From sweeping Arctic vistas to pensive human interaction to the power of the great white shark, Richard Theiss/[RTSea](#) adheres to the principle of "Making the Message Matter."

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