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Foreword

TMI: Values Matter When You Are Sipping from the Fire Hose

An introduction to the University Dialogue, 2010

JOHN ABER, PH.D.

PROFESSOR OF ENVIRONMENTAL SCIENCES AND PROVOST

Maybe this is interfering with my homework!” Five years ago, when Instant Messaging was relatively new (and how last decade is that), I asked my students in a 444 Honors Seminar to do a simple observational experiment of their choosing to demonstrate the steps in the scientific process (hypothesis, observation, conclusion). Two students asked the same question: “How many IM messages do I get in 30 minutes?” Both made similar observations—about 20! My opening sentence above was the conclusion drawn by one of those students. This was my first direct encounter with the new, distracted environment of today’s college students.

IM was a laptop-based, pre-Wi-Fi technology. Users had to be sitting somewhere with wired access to the Internet; a dinosaur technology in comparison to the multiple gadgets now providing continuous access to the world. Both access and distractions have multiplied.

A backlash is brewing. A recent column by David Brooks¹ focused on the value of books in the home for increasing student outcomes. In that essay he refers to *The Shallows* by Nicholas Carr, one of the more popular of a phalanx of books decrying the loss of focus and lack of time for deep analysis and complex thought in the instant-response world. As I write this (July 18), this week’s *New York Times Book Review* section has no less than three essays and reviews on the impact of new communication technologies on learning and world events.

All of which makes this year’s dialogue topic, “Decision Making in the Age of Information Overload,” exceptionally timely and relevant.

Part of good scholarship is being aware of historical precedents for your question, and it may be comforting to know that the concerns around superficiality and shoddy scholarship as a result of technological advances are not new. In *Hamlet’s Blackberry* (as reviewed by Laurie Winer²), William Powers traces similar concerns back to Socrates, who felt scrolls would erode thought by allowing people to look things up rather than “remember[ing] them from the inside, completely on their own.” Powers also mentions a 15th-century Italian

scholar who said of Gutenberg’s press that it would “disregard that which is best and instead merely write for the sake of entertainment.” For a U.S. precedent, we can look to Thoreau who said famously in *Walden*, “We are in great haste to construct a magnetic telegraph from Maine to Texas; but Maine and Texas, it may be, have nothing important to communicate.”³

So, questions on the value of new ways to transfer information and to communicate are ancient ones and are really about the values that drive the human experience, as well as how to turn information into knowledge and outcomes. The scale and complexity of the issue grows at a pace described by Moore’s law on the doubling rate of computing power.⁴ The analogy of “sipping from a fire hose” applies, and the force of the information flood coming from the hose grows exponentially.

I first encountered the “fire hose” analogy in the world of satellite remote sensing where data rates and storage are measured in terabytes (10^{12} or 1,000,000,000,000 bytes) and more. Making sense of such huge amounts of information depends entirely on placing each piece in a larger context set by the value of the surrounding “pixels” and other data on location, landform, etc. Does this work by analogy in other fields? Is the context of information—the relationship of each “byte” to others—how we are to avoid drowning in the data stream? If so, does that change the way scholarship works, especially if the needed context comes from another discipline?

I love a good essay. The format requires brevity, organization, focus, tight thinking. Given the topic of this dialogue, essays may become the longest kind of writing in our future!

The essays presented here are excellent demonstrations of the genre. While picking diverse contexts, and built from a wide range of disciplines, many of them sound similar themes of immense value to students here and now: be open but critical, evaluate sources, draw on the abilities of others, work in groups, go deep, don’t settle for the quick or superficial.

ANN DONAHUE AND CAROLYN GAMTSO urge us to evaluate sources critically. Students in particular should avoid using only comfortable and unchallenging methods for accessing information and should draw on the expertise of those who understand the reviewed and critiqued databases.

COURTNEY MARSHALL puts this concept in a culturally charged context, urging us to recognize that unchallenged assumptions about the social implications of language are especially active in the “invisible” world of the Internet, and that differences in ethnicity, race, orientation, and socioeconomic background do not disappear just because individuals cannot be seen. Differences still do matter, and the need to understand those differences is only amplified in a better-connected but semi-anonymous world.

VANESSA URCH DRUSKAT puts this concept into the group meeting context, stressing that information has value, but that solving complex problems involves teamwork, and effective teamwork requires some of the same skills used to judge information. She urges us to be open, to understand factors like relative status, social relationships, and others that might inhibit good ideas from entering a team’s conversation. She offers that trust is central to allowing good ideas to surface, entering into productive discussions, and avoiding “group-think.”

It is the lack of deliberate thinking and the quick acceptance of unsubstantiated and even dangerous ideas that leads to ARTHUR GREENBERG’s discussion of the random or sometimes well-planned planting of ideas that “go viral” on the Internet or in the blogosphere. Perceptions, rumor, downright lies can all be transmitted, accepted, and multiplied at light speed. He gives several examples where long-term, in-depth studies were required to counteract bad ideas that had achieved a semi-permanent life of their own in the virtual world.

ROBERT MCGRATH applies the same principles to understanding what determines health in the U.S. While focusing on the complex problem of organizing and understanding data related to treatments and outcomes, he also highlights the simple numbers that drive the inquiry: we will soon spend 20 percent of GDP on health care, more than any other nation, and still suffer poorer “health” and longevity than many. More interesting still is the claim that active health care accounts for only 10 percent of health outcomes in our population.

GENE ELIZABETH HARKLESS also uses health care as her platform, this time advocating for the active use of

available, but complex outcome information as a basis for consumer decisions. She cites significant variation between data-based recommendations for testing and usual practices to support the idea that health care consumers become aware of information sources and use them in their interactions with clinicians.

STACY VANDEVEER poses an even more daunting challenge in the context of consumers who want to make environmentally enlightened choices in the marketplace. Even if we did know the impact of every step in the production chain of a product, how would we summarize those to consumers, who very well might want to know? He discusses the role of government in setting policies that reflect the true costs of production and distribution.

SARAH STITZLEIN and NICK SMITH offer two very different perspectives on our future and the role of the university.

Smith questions the nature of the human experience and its uniqueness, or its contribution. At what point does human thought cease to add significant value to the onslaught of information, which can certainly be “processed” more quickly by machines? As robotics and artificial intelligence grow, will we be the “stupider” part of the equation?

Stitzlein offers a more human-centered view, and one that you can take with you into the classroom and your other experiences here on campus. She urges us to be proactive, not passive. Move from a consumer of information to a creator of knowledge. Ask insightful questions. Craft evidence-based answers.

So we end where we began (also a nice feature of an Essay—round out the question). Values matter. Good discourse requires stepping back from the fire hose occasionally to understand the context and look deeply into important questions, with help from your colleagues. Use media, don’t be used by them.

Finally, what to do with these essays? I hope you will use them in your classes, and your discussions outside of class. Students, *print* them (share them with a friend, and then recycle them—be sustainable!). Take them outside, sit under a tree. Read them, absorb them, *think* about them. Talk about them with others. Be critical, open, willing to leave your own comfort zone, willing to accept, but not without challenge. Master the flow, sip from the fire hose. Your UNH education is about information, but even more, your education is about learning *what to do* with information.

Endnotes

1. Brooks, David. "The Medium is the Medium," *New York Times*, 8 July 2010.
2. Winer, Laurie. "Born to Check Mail," *New York Times Book Review*, 18 July 2010.
3. Thoreau, Henry David. 1854. *Walden*. (Reprinted 2004 by Beacon Press with forward by Bill McKibben).
4. Although the actual source of the concept is debated, Gordon Moore, cofounder of Intel, is the one whose name is associated with the statement that computing power should double every two years due to reduction in the size of components on, and increase in computational speed of, the integrated chips that drive computer functions (Wikipedia, "Moore's Law").