

From the Editor in Chief**LOOKING AT THE NATURE OF IDEAS
THROUGH NEW LENSES**

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What sets humans apart from other animals is not the use of technology: Many mammals are innovative in making simple tools to assist in life. But it is the sheer scale of technological development that distinguishes humans. Over the millennia, people have invented technologies, used them, and enhanced them. The once-innovative technologies become mundane elements of everyday contemporary life as human societies progress. The technological developments of the last decades have dramatically altered most humans' way of life and perceptions of the myriad elements of the immediate and distant environment. It would not be an exaggeration to view humans as standing at the cusp of profound social changes that are in line with those following the invention of writing or the steam engine. Therefore, now is a good time to stop for a moment and ponder the forces that make such new developments possible. What should we pay specific attention to when we attempt to make sense of where we have succeeded as a species, and where we have failed?

Certainly this complicated, multifaceted, and intangible question cannot be answered in the next three pages, or even in a thousand times that many: There are simply too many interrelated forces that form the necessary conditions for progress. But I can isolate one particularly relevant force to contemplate, one that underscores the human role amid the multitude of other factors: That force is the reception of new ideas.

Humans are a creative sort, continually imagining new ideas to address common and uncommon problems in daily life. But the success of an idea depends not solely on its conception: An equal partner of the potential of an idea is its social acceptance. The lack of ideas is certainly not an ideal situation, and one must remember that even a bad idea is better than no idea at all. Many bad ideas have been rethought, reworked, and reinvented into pretty good ideas. But new ideas are also a double-edged sword: While innovative thinking may propose a solution to a perceived problem, the inventor often finds that his or her "big idea"

causes problems too. For example, the questioning begins with the assessing the originality of the idea, and then moves to include logistical questions such as how to make the idea a reality, to economic and philosophical questions such as whether there is commercial or human value for it, as well as environmental questions such as whether this solution harms existing biological, interpersonal, or mechanical systems, and on and on.

These questions arise, however, only if the idea has some greater outlet than the inventor him- or herself. For example, the revolutionary ideas on genetics outlined in Mendel's laws could not assist farmers in their hit-or-miss hybrid farming practices of the mid-1800s because the concepts weren't generally known (O'Neil, 2006). Decades later, Mendel's work was rediscovered and, through experimentation over the last century, has been refined into common practices that allow for successful and replicable cross-breeding practices.

Other times, it is simply a matter of others not being intellectually sophisticated or astute enough to understand the value of the idea. Centuries before the Renaissance, the idea of experimental variation was invented. The study of phenomenon by means of systematic variation to and measurement of the effects on the phenomenon was devised by the Pythagoreans of the 5th century B.C. to prove that numbers are the essence of the world. This may have been revolutionary thinking, but no one understood what to do with it before Galileo Galilei (1638/1954) adopted it and began his study of the behavior of a pendulum using systematic variation. Thus a very old idea applied within a new context helped open the path to modern science and industry. Unfortunately, many generations of potential creativity built upon the Pythagoreans' inspiration have been lost.

Certainly ideas are not good simply because they have been created. The history of humankind is littered with instances of engineering and social science ideas that failed or never rose beyond disappointing levels (Petroski, 1994). As a result, many people remain skeptical about new ideas. On the other hand, if all new ideas were deemed valuable simply because they are new, our modern societies would be quite troubled and dangerous places to live. So, what should we do about new ideas?

The ultimate challenge, of course, is deciding whether an idea is good, is not good but has potential for development, or is simply inappropriate or invalid. Some of the decisions are relatively minor; all of us make these nearly every day, occasionally without much thought. Some decisions are larger, conscious, and can involve other people. Sometimes we find the decision on an idea difficult, and are happy to let others be responsible for deciding its goodness. And some decisions are so large that only a few people can play a role in their outcome. Yet, our general attitudes toward ideas, as individuals within a society, have substantive impact on every assessment of an idea by decision makers within our society. Our laziness toward the process of considering ideas from various perspectives can doom otherwise useful and beneficial ideas, which can have a long-lasting social impact. The example of Galileo remains valid today: Progress can move onward if we develop the right ideas at the right time. Had Galileo not accepted his responsibility to view the appropriateness of an idea—past or present—perhaps our world might still be awaiting a new Galileo, but awaiting from within a far more primitive society.

One of the benefits of modern ICTs is that they enable us to communicate faster and further than at any time in human history. The good news in this is that ideas—the good, the bad, the undeveloped—can reach new “Galileos” around the world perhaps in minutes, as compared to centuries. The bad news is whether modern societies are truly prepared—

mentally, critically, alertly—for this new culture of discovery. If we turn blind eyes and deaf ears to new ideas, if we are unable or unwilling to seek out new concepts and visions, if we cannot be imaginative in exploring new applications for old or underdeveloped ideas, then progress is slowed and we may miss an opportunity to develop our societies and our futures. Surely if a society is unable to recognize, evaluate effectively, and adopt in various ways new ideas and new ways of thinking, then improved communication is of little use.

An ICT society can be seen as simply a technical revolution and little else if its members cannot understand that the technologies themselves are only part of the equation. Equally important is the mental revolution that must accompany technology: the creative ability to use the mechanisms to enhance social well being. ICT societies are new idea societies only when the new ideas are allowed to make progress possible. However, to make practical and creative use of new ideas, some old attitudes toward ideas must fall away.

For centuries, some have viewed knowledge (i.e., augmented true opinions) as eternal truths. All of science has pointed toward discovering these truths and to evaluating anything new within a framework built around these pillars of our culture. Whatever did not coincide with what we held as truth was promptly discarded. Yet this approach limits the potential for innovation and progress.

Perhaps what is needed today is simply a new approach, a new way of thinking. Without rejecting the established laws, we can look at ideas more dynamically. By using multiple lenses we can begin to imagine different possibilities for innovation, potential solutions for currently unsolvable problems (Laudan, 1977). But most importantly, we must be able to look at ideas with an eye toward tomorrow. This presupposes that we are wise enough to recognize that not all ideas are in usable form today. We must be able to see the potential in an idea: The decision should not be “This idea is useless to us today,” and then not only allowing the idea to die but also become forgotten; rather, the decision should be “This idea is okay,” and so it is allowed to progress. We must allow for the evolution of ideas, for the re-tooling of ideas, for the taking of current ideas to new levels, for seeing how more than one underdeveloped idea can be united with other ideas to form a greater good, and even allowing an impractical idea for today to survive long enough for it to have value and use in a more receptive and appropriate future.

We must make decisions about ideas, but we must do so from a more open-minded, imaginative, and thoughtful stance. Our societies are progressing at an incredible pace: We must find a way to capture the potential of ideas of today that will provide the necessary potential for development and progress in our societies of tomorrow.

Our current issue of *Human Technology: An Interdisciplinary Journal on Humans in ICT Environments* shows how looking at current practices and research a bit differently can enhance new knowledge and create new advantages. Each of the articles reflects the authors’ inspired thinking in raising the understanding of a concept to a new level or different application. The first article, by Mäyrä, Soronen, Koskinen, Kuusela, Mikkonen, Vanhala, and Zakrzewski, looks at the human experience of smart home technologies of the future. However, since these technologies currently do not exist, they innovatively created small experiences to help the users gain a feel on a limited scale of what embedded smart technologies could be, especially in the comfort of home environments that the study’s informants have. And they approached this research from multiple scientific disciplines,

thereby allowing new ideas and their potential to be collaborative. Looking at the concept of flow in relation to games is the focus of the article by Kiili. Building on prior research in the gaming world, he seeks out the elements of flow that might have implications for creating educational games. The third article by Linja-aho looks at the learnability of complex systems. She posits that the process for learning is more complex than the current literature indicates, and provides guidelines to assist developers in creating systems and training that are more learnable, particularly for novices. Finally, Chesney extends the current research on the technology acceptance model (TAM) by testing the relationships between perceived enjoyment, ease of use, usefulness, and intention to use for “dual” systems, those information systems used for both utilitarian and pleasurable purposes.

Research such as this demonstrates the social benefit of looking at current science and current human needs through the lenses of many disciplines, as well as creativity, open-mindedness, and the potential for the future. Good ideas are needed for human progress, but even good ideas can be enhanced, rethought, and taken to a new level when society looks at the ideas from a new stance.

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