RESPONSIBLE TECHNOLOGICAL INNOVATION

Seventeen Haiku

First Printing: 2014
ISBN 978-0-692-35613-5

University of Michigan Risk Science Center
1415 Washington Heights
Ann Arbor, MI 48109
www.riskscience.umich.edu

RESPONSIBLE TECHNOLOGICAL INNOVATION

Seventeen Haiku

Andrew Maynard and Michelle Kasprzak

University of Michigan Risk Science Center
December 2014

CONTENTS

FOREWORD

On June 5th and 6th 2014, a group of researchers from widely differing backgrounds and experiences was brought together by the Risk Science Center at the University of Michigan, and V2_ Institute for Unstable Media in Rotterdam, to creatively explore the concept of responsible technological innovation. This was intentionally a naïve workshop. Few of the participants had formally carried out research into responsible innovation. Yet all of them were engaged in some way at the interface between technology, innovation and society. By convening experts from fields as diverse as art and architecture to business, public health and engineering, we set out to bring a fresh perspective to responsible technological innovation and its application.

The resulting discussions were stimulating and enlightening. They peeled apart the deep complexities in defining what responsible innovation is – even what innovation itself is. And they explored how multiple constituencies within society may benefit from thinking in different ways about responsibility and innovation.

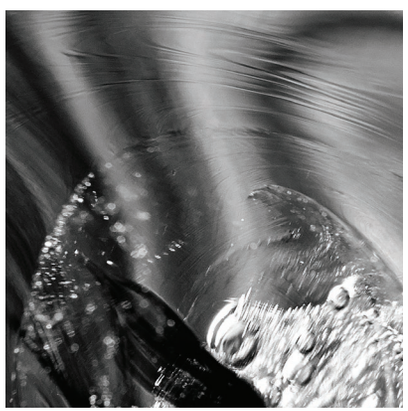
To capture the richness and depth of these explorations, the group unanimously decided to eschew the usual technical reports or academic papers that so often emerge from such meetings. Instead, we elected to compile a collection of haiku that captured our thoughts and ideas. As well as reflecting the nuances and complexity of our discussions, it was hoped that this collection would serve to stimulate further creative insights into responsible technological innovation – to become seeds of innovation in others as they approach developing technologies that are responsive and responsible to the societies they reside in, and ultimately serve.

Andrew Maynard and Michelle Kasprzak
Ann Arbor/Rotterdam, December 2014

PESSIMISM

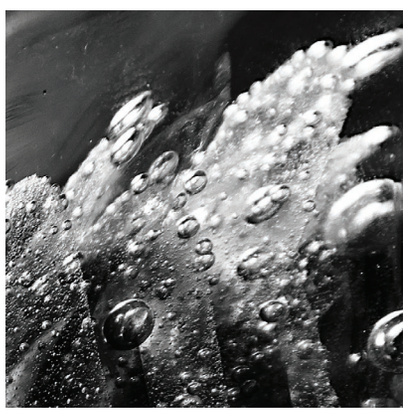
Innovation for the sake of innovation can lead to the formation of isolated paths, starting no-where and leading no-where. There is often pressure to conform to the expectation of innovation. Can innovation without purpose end up creating more challenges than it resolves?

An isolated path
Caravans of conformity
Meaningless journeys



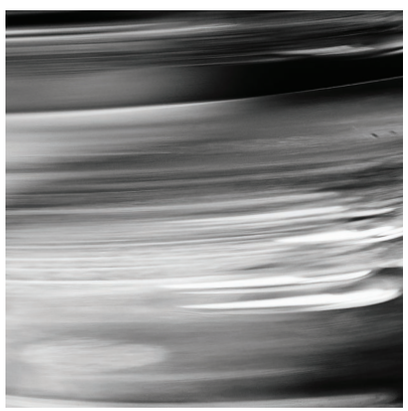
Innovation is often driven by need. Is there a danger of innovators becoming so wrapped up in their ideas and inventions that they lose sight of how useful they are to others?

Effects far afield
Inventors' myopia
Relieves no burdens



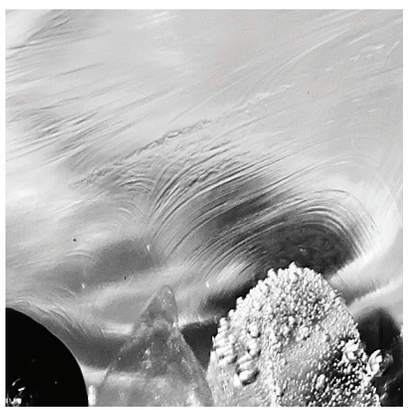
Dreaming tomorrow
We only see yesterday
Silicon Valley

At times, does the desire to recreate the past become so great
that it obscures the possibility of creating something new?



The pace of innovation is accelerating, spurred on by an increasing emphasis on rate of change as a prime measure of progress. Is there a danger that, in the rush to change, we are losing sight of why change is needed in the first place?

Faster and faster
The countryside is a blur
Do we miss the view?



Innovation leads to consequences that are often hard to predict. Some may be good; others not so much. These consequences often ripple through society, touching lives in unexpected ways. Who is responsible for ensuring the ripples of influence do more good than harm, and that they don't turn inadvertently into tsunamis of destruction?

Ripples reverberate
Dreams and nightmares awake
Who is responsible?

REFLECTION

Shared values can help build strong connections between innovators and society. As well as material needs, how important is it that these connections respond to and reflect aesthetic, spiritual, and emotional, needs, desires, and aspirations?

Isolated conflict
Shared values bring harmony
Growing together

What defines true innovation? Is is simply change. Or doing things differently. Or following the latest ideas and trends. Or is there a greater depth to innovation?

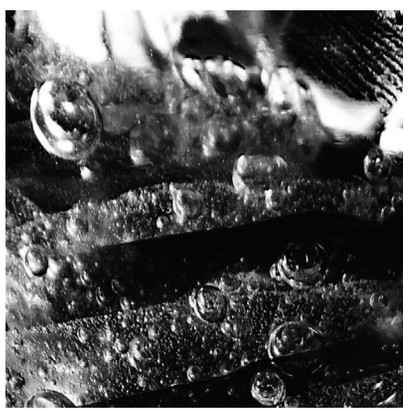
The flock turns again
Is that true innovation?
If thoughtful, and strange

Innovation cannot be fostered without creativity. Yet creativity depends on individual voices, identity and content. And individual voices cannot emerge and be heard within a homogeneous society. How should individual creativity be fostered and utilized to ensure innovation that is responsive to the needs of society; and is responsible to the communities it impacts?

The lone genius
Is the whole society
Both chicken and egg

Innovative designs always come with potential risks, and deciding which innovations to pursue depends in large part on being able to make tradeoffs. The question though is not which risks are acceptable now, but which risks might be more or less acceptable to our future selves? Especially when we can only imperfectly imagine what life will be like and what we will care about in the future.

Choosing among risks
We need imagination
Of lives yet unlived

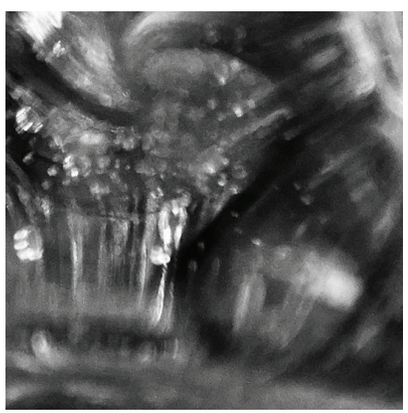


Problems, like speed bumps,
Jolt static minds to react
On to the next problem

Challenges are potent stimuli for innovation. With the right environment and support, can anyone become part of the process of innovation?

Innovation – like all forms of progress – can never be risk-free. A particular innovation may yield great benefits (or not) or cause great harm (or not). Because of this, resilience against unexpected consequences requires a portfolio of innovation. How can responsible innovation recognize the value of a broad portfolio or ideas, not just the most transformative ones?

Innovate broadly
We can’t know which will work out
Portfolios help



Responsible innovation requres thinking about future consequences of actions. How can we avoid becoming so obsessed with every conceivable future outcome, that the only response is paralysis?

To enter the dawn
Lay beyond understanding
Conscious of the day

OPTIMISM

Societal narratives have a profound impact on progress and growth, and the ability of communities to recognize, make sense of and address needs and opportunities. How can the power of narrative be used to enable an engaged and informed dialogue on innovation, and empower communities to support mutually beneficial forward trajectories?

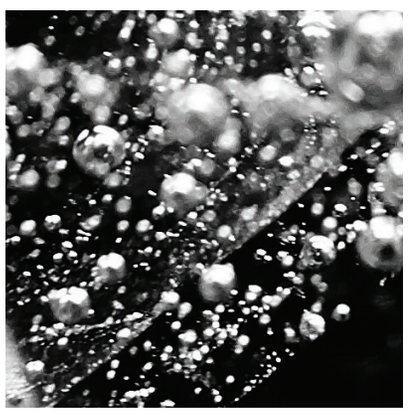
Narratives open
Innovations responsive
To lives of users

Responsible innovation emanates from and is grounded in a dynamic discourse with communities. How can such discourse be used to forge partnerships that empower citizens to become innovators?

Willing and able
Embolden our citizens
Now active agents

Risk is endemic to progress: it drives it, it fuels it, and occasionally it blocks it. How can better understanding and use of risk in the process of innovation support faster progress toward sustainable solutions to pressing challenges?

Incentivize risk in various disciplines for stunning results



To be successful, innovations must be meaningful to the people they touch. Yet often the true value – and the true potential – of innovation is masked under a cloak of technical details. How can stories help remove this cloak, and reveal potential ways forward to both innovators and the users of innovations?

Compelling stories
Reveal opportunities
Hidden by data

Resilience through innovation depends on a divergent co-existence of ideas. Responsive and resilient solutions to societal challenges and opportunities – and solutions that can be adapted or substituted within a rapidly changing and uncertain world – require a rich feedstock of divergent, novel ideas that can be combined in creative ways. How can such a rich diversity of ideas best be nurtured?

Divergent ideas
Coexisting in harmony
Resilient Progress

BACK STORY

INNOVATION IN EXTREME SCENARIOS

This workshop was part of a research project on Innovation in Extreme Scenarios, which was instigated by V2_The Institute for the Unstable Media in reaction to the introduction of an innovation agenda for the arts as part of the Dutch government's ambition to be "one of the world's top five knowledge economies" by 2020. V2_, based in Rotterdam, the Netherlands, has a 30 year history of working at the intersection of art, design, culture, and technology, and in 2012 became part of the "e-culture" grouping which is subject to this innovation agenda and its aims.

At V2_ we became curious about the use and abuse of innovation as a buzzword, and began exploring the notion of innovation not as an imperative from politicians, but as a result of real life extreme scenarios which compel innovation. Our starting point was the incredible World War II story of the invention of a new material – Pykrete; a kind of super ice which can withstand bullets and takes a very long time to melt. This material was proposed to Winston Churchill as a substance to create an aircraft carrier to combat the German U-boat problem. As a result of a dramatic meeting of the Allies wherein a bullet ricocheting off this new super ice nearly killed one of the Americans, Churchill authorized the construction of a prototype in a then-remote location of Canada. Ultimately the war ended before the boat could be fully developed and this material was largely forgotten. When considering the conditions for innovation today, we asked ourselves: what is the U-boat problem of today, and how can art & science innovation address it? How do new materials figure into this mix, and what are the risks and benefits involved?

As a way of directly addressing this policy shift, V2_Lab began undertaking research into the nature and application of innovation through a series of expert meetings, workshops, site visits and interviews over the course of 2013-14. The final outputs of the project, which will comprise project commissions and a final publication, will be used as a tool to engage with the policy conversation on innovation in a more profound way. To date, expert meetings and interviews have been held in the Netherlands, Canada, Hungary, Denmark, and the US.

RESPONSIBLE TECHNOLOGICAL INNOVATION AND THE EVOLUTION OF SEVENTEEN HAIKU

As part of the Innovation in Extreme Scenarios project, a workshop was convened at the University of Michigan to explore new and creative insights into responsible technological innovation. Experts from a broad range of disciplines were brought together in a "naïve workshop" designed to generate new insights around responsible technological innovation, without the constraints of prior knowledge and assumptions. Over the course of two days, we conducted a number of thought exercises to stimulate our thinking and collective dialogue on the subject of responsible innovation. On the first day we examined a number of contentious case studies, including a patented and expensive ready-to-use therapeutic food product for famine regions, and an ambitious plan by a technological juggernaut to fly balloons over Africa to deliver internet access. Through various brainstorming techniques, we analyzed these cases for success and failure as examples of technological innovation which may be considered responsible or irresponsible.

Following an analysis of case studies, we continued to explore the issues raised by the activities of the previous day. Our initial idea on reporting out from the workshop was to write a white paper, making recommendations on responsible innovation as it relates to policy that could be delivered to various stakeholders in the Netherlands and the EU. The group quickly began to realize though that the domain of responsible innovation is too complex and context-dependent for a series of recommendations to have substantial weight or relevance. We also felt that a formal report would not accurately reflect the subtleties, nuances and creativity of the "naïve" insights we had gained through our interactions. As Herman Van Rompuy, the former President of the European Council, is an avid poet, we decided that a more interesting and relevant approach to capturing our thoughts and presenting them publicly would be in Van Rompuy's favorite poetic form – the haiku.

The seventeen haiku included here were written by workshop participants, and capture the essence of key insights from the two days we spent together. The abstract images and questions accompanying each are designed to further stimulate creative ideas around responsible technological innovation. In this respect, the hope is that the collection acts as a stimulus for new ideas around responsibility and innovation that match the needs and opportunities of specific contexts.

CONTRIBUTORS

Michael Bianco
University of Michigan Penny Stamps School of Art and Design, Ann Arbor, MI

Boris Debackere
V2_
Rotterdam

Joyce Lee
University of Michigan Medical School, Department of Pediatrics, Ann Arbor, MI

Bill Lovejoy
University of Michigan Ross School of Business Ann Arbor, MI

Michelle Kasprzak
V2_
Rotterdam, Netherlands

Andrew Maynard
University of Michigan Risk Science Center Ann Arbor, MI

Karen Peterson
University of Michigan Department of Environmental Health Sciences, Ann Arbor, MI

Eric Rabkin
University of Michigan Department of English Language and Literature, Ann Arbor, MI

Jean Shope
University of Michigan Transportation Research Institute, & School of Public Health, Ann Arbor, MI

Max Shtein
University of Michigan Department of Mechanical and Structural Engineering, Ann Arbor, MI

Kathleen Sienko
University of Michigan Department of Mechanical and Structural Engineering, Ann Arbor, MI

Nick Tobier
University of Michigan Penny Stamps School of Art and Design, Ann Arbor, MI

U Sean Vance
University of Michigan School of Art and Architecture, Ann Arbor, MI

Ann Verhey-Henke
University of Michigan School of Public Health Ann Arbor, MI

Brian Zikmund-Fisher
University of Michigan School of Public Health Ann Arbor, MI

With grateful thanks to Annie Whalen, Ishani Hewage and Caren Weinhouse

THE IMAGES

The abstract images in this book are taken from close-up photographs of an artisan glass paperweight. I was looking for images that were sufficiently non-identifyable to prevent preconceived ideas leading the reader on. At the same time, I wanted visual prompts that would stimulate the reader to interpret each haiku creatively.

The paperweight was initially used as a test object – it happened to be one of the first things I grabbed one Saturday afternoon while trying out different ideas. However, when rendered in black and white, it became clear that the subtle variations in form and tone that could be teased out of the images provided a wonderfuly coherent and expressive compliment to the haiku, while remaining removed from any recognizeable object.

The result was a series of seventeen abstract black and white images, each uniquely coupled to a specific haiku, while belonging to a coherent whole.

Andrew Maynard
Ann Arbor, December 2014