

FUTURE NEWS

TO CONNECT, TO INFORM AND TO INSPIRE

IN THIS EDITION

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LIFECYCLE OF EMERGENCE

USING EMERGENCE TO TAKE SOCIAL INNOVATION TO SCALE

by Margaret Wheatley and Deborah Frieze

Despite current ads and slogans, the world doesn't change one person at a time. It changes as networks of relationships form among people who discover they share a common cause and vision of what's possible.

This is good news for those of us intent on changing the world and creating a positive future. Rather than worry about critical mass, our work is to foster critical connections. We don't need to convince large numbers of people to change; instead, we need to connect with kindred spirits. Through these relationships, we will develop the new knowledge, practices, courage, and commitment that lead to broad-based change.

But networks aren't the whole story. As networks grow and transform into active, working communities of practice, we discover how life truly changes, which is through emergence. When separate, local efforts connect with each other as networks then strengthen as communities of practice, suddenly and surprisingly a new system emerges at a greater level of scale. This system of influence possesses qualities and capacities that were unknown in the individuals. It isn't that they were hidden; they simply didn't exist until the system emerges. They are properties of the system, not the individual, but once there, individuals possess them. And the system that emerges always possesses greater power and influence than is possible through planned, incremental change. Emergence is how life creates radical change and takes things to scale.

Since its inception in 1992, The Berkana Institute has been experimenting with the lifecycle of emergence: how living systems begin as networks, shift to intentional communities of practice, and evolve into powerful systems capable of global influence.

Through our work with communities in many different nations, we are learning what's possible when we connect people across difference and distance. By applying the lessons of living systems and working intentionally with emergence and its

lifecycle, we are demonstrating how local social innovation can be taken to scale and provide solutions to many of the world's most intractable issues—such as community health, ecological sustainability, and economic self-reliance.

WHY WE NEED TO UNDERSTAND NETWORKS

Researchers and social activists are beginning to discover the power of networks and networking. And there is a growing recognition that networks are the new form of organizing. Evidence of self-organized networks is everywhere: from social activists and web-based interest groups to terrorist groups and street gangs. While we now see these everywhere, it is not because they're a new form of organizing. It's because we've removed our old paradigm blinders that look for hierarchy and control mechanisms in the belief that organization only happens through human will and intervention.

Networks are the only form of organization on this planet used by living systems. These networks result from self-organization, where individuals or species recognize their interdependence and organize in ways that support the diversity and viability of all. Networks create the conditions for emergence, which is how life changes. Because networks are the first stage in emergence, it is essential that we understand their dynamics and how they develop into communities and then systems.

Yet much of the current work on networks displays old paradigm bias. In social network analysis, physical representations of the network are created by mapping relationships. This is useful for convincing people that networks exist, and people are often fascinated to see the network made visible. Other network analysts name roles played by members of the network or make distinctions between different parts of the network, such as core and periphery. It may not be the intent of these researchers, but their work is often used by leaders to find ways to manipulate the network, to use it in a traditional and controlling way.

What's missing in these analyses is an exploration of the dynamics of networks:

- Why do networks form? What are the conditions that support their creation?
- What keeps a network alive and growing? What keeps members connected?
- What type of leadership is required?
- Why do people become leaders?
- What type of leadership interferes with or destroys the network?
- What happens after a healthy network forms? What's next?
- If we understand these dynamics and the lifecycle of emergence, what can we do as leaders, activists, and social entrepreneurs to intentionally foster emergence?

WHAT IS EMERGENCE?

Emergence violates so many of our Western assumptions of how change happens that it often takes quite a while to understand it. In nature, change never happens as a result of top-down, preconceived strategic plans, or from the mandate of any single individual or boss. Change begins as local actions spring up simultaneously in many different areas. If these changes remain disconnected, nothing happens beyond each locale. However, when they become connected, local actions can emerge as a powerful system with influence at a more global or comprehensive level. (Global here means a larger scale, not necessarily the entire planet.)

These powerful emergent phenomena appear suddenly and surprisingly. Think about how the Berlin Wall suddenly came down, how the Soviet Union ended, how corporate power quickly came to dominate globally. In each case, there were many local actions and decisions, most of which were invisible and unknown to each other, and none of which was powerful enough by itself to create change. But when these local changes coalesced, new power emerged. What could not be accomplished by diplomacy, politics, protests, or strategy suddenly happened. And when each materialized, most of us were surprised. Emergent phenomena always have these characteristics: They exert much more power than the sum of their parts; they always possess new capacities different from the local actions that engendered them; they always surprise us by their appearance.

It is important to note that emergence always results in a powerful system that has many more capacities than could ever be predicted by analyzing the individual parts. We see this in the behavior of hive insects such as bees and termites. Individual ants possess none of the intelligence or skills that are in the hive. No matter how intently scientists study the behavior of individual ants, they can never see the behavior of the hive. Yet once the hive forms, each ant acts with the intelligence and skillfulness of the whole.

This aspect of emergence has profound implications for social entrepreneurs. Instead of developing them individually as leaders and skillful practitioners, we would do better to connect them to like-minded others and create the conditions for emergence. The skills and capacities needed by them will be found in the system that emerges, not in better training programs.

Because emergence only happens through connections, Berkana has developed a four-stage model that catalyzes connections as the means to achieve large-scale change: Name, Connect, Nourish, Illuminate. We focus on discovering pioneering efforts and naming them as such. We then connect these efforts to other similar work globally. We nourish this network in many ways, but most essentially through creating opportunities for learning and sharing experiences and shifting into communities of practice. We also illuminate these pioneering efforts so that many more people will learn from them. We are attempting to work intentionally with emergence so that small, local efforts can become a global force for change.

THE LIFECYCLE OF EMERGENCE

Stage One: Networks

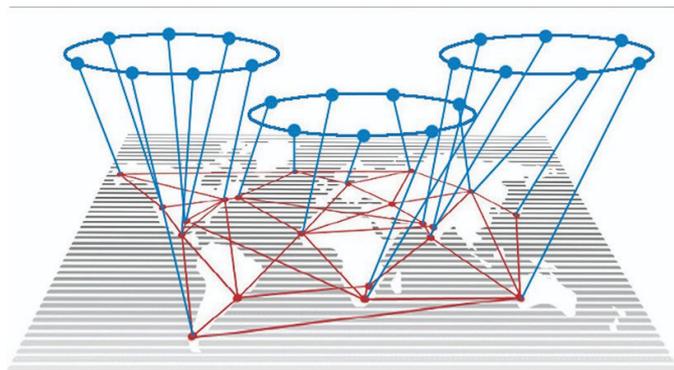


Networks: Discovering Shared Meaning and Purpose

We live in a time when coalitions, alliances, and networks are forming as the means to create societal change. There are ever more networks and now, networks of networks. These networks are

essential for people finding like-minded others, the first stage in the lifecycle of emergence. It's important to note that networks are only the beginning. They are based on self-interest: people usually network together for their own benefit and to develop their own work. Networks tend to have fluid membership; people move in and out of them based on how much they personally benefit from participating.

Stage Two: Communities of Practice



Communities of Practice: Developing New Practices Together

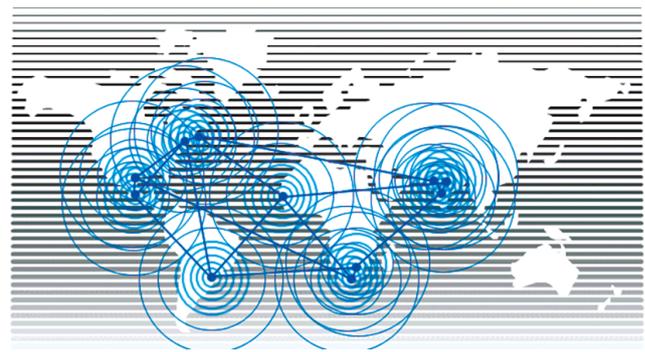
Networks make it possible for people to find others engaged in similar work. The second stage of emergence is the development of communities of practice (CoPs). Many such smaller, individuated communities can spring from a robust network. CoPs are also self-organized. People share a common work and realize there is great benefit to being in relationship. They use this community to share what they know, to support one another, and to intentionally create new knowledge for their field of practice.

These CoPs differ from networks in significant ways. They are communities, which means that people make a commitment to be there for each other; they participate not only for their own needs, but to serve the needs of others.

In a community of practice, the focus extends beyond the needs of the group. There is an intentional commitment to advance the field of practice and to share those discoveries with a wider audience. They make their resources and knowledge available to anyone, especially those doing related work.

The speed with which people learn and grow in a community of practice is noteworthy. Good ideas move rapidly among members. New knowledge and practices are implemented quickly. The speed at which knowledge development and exchange happens is crucial because local regions and the world need this knowledge and wisdom now.

Stage Three: Systems of Influence



Systems of Influence: New Practices Become the Norm

The third stage in emergence can never be predicted. It is the sudden appearance of a system that has real power and influence. Pioneering efforts that hovered at the periphery suddenly become the norm. The practices developed by courageous communities become the accepted standard. People no longer hesitate about adopting these approaches and methods and they learn them easily. Policy and funding debates now include the perspectives and experiences of these pioneers. They become leaders in the field and are acknowledged as the wisdom keepers for their particular issue. And critics who said it could never be done suddenly become chief supporters (often saying they knew it all along).

Emergence is the fundamental scientific explanation for how local changes can materialize as global systems of influence. As a change theory, it offers methods and practices to accomplish the systems-wide changes that are so needed at this time. As leaders and communities of concerned people, we need to intentionally work with emergence so that our efforts will result in a truly hopeful future. No matter what other change strategies we have learned or favored, emergence is the only way change really happens on this planet. And that is very good news.



Margaret Wheatley (left) was co-founder and president of The Berkana Institute; Deborah Frieze (right) succeeded her. Berkana partners with people developing healthy and resilient communities worldwide,



Book Review

Reviewed by Alireza Hejazi

The Future is Yours

Dan Frey

CORE MESSAGE

This novel cautions readers on the benefits and drawbacks of forecasting the future. It depicts the story of two buddies who develop technology that they believe will be the next game-changer in Silicon Valley. However, while they work on the specifics, their friendship and other relationships, not to mention the fate of the planet, are jeopardized. The tale is recounted solely through emails, texts, blog posts, and transcripts, with future newspaper stories strewn throughout. The storyline seems intriguing, although the narrative isn't especially original. Friendship, ethics, love, commercial acumen, prediction accuracy, ambition, greed, envy, change, and the repercussions of acts are among the topics explored in the book. The novel is engrossing and thrilling. Its well-paced plot keeps readers on their toes. Even if science fiction isn't their favorite genre, readers may like this novel.

CONTENT ANALYSIS

Dan Frey is a well-known screenwriter. *The Retreat* was his previous novel. He has crafted a fascinating sci-fi story in his latest novel, *The Future Is Yours*, that will keep the reader engaged until the very last page. He's created an engrossing epistolary tale on the perils of future casting and the perils of friendship. Making us ask ourselves, "Are we destined to fulfill our future if



we can glimpse it? And what are the consequences if we oppose it?", the book reminds us of the difficulties of predicting the future and the benefits of living in an unpredictable environment. It features a fast-paced, extremely interesting tale with characters that you can't help but fall in love with.

Ben Boyce and Adhi Chaudry are the two main characters in the narrative. They've been buddies since their freshman year of college. Ben is a charming salesperson who aspires to be successful in all he does. Adhi is an introvert who also happens to be a talented computer engineer. When Adhi develops a hypothesis that uses quantum computing to allow a PC to display data from one year in the future, Ben views it as a chance to launch a firm that would dwarf Apple and Amazon. They aim to bring their technology to the rest of

the world by forming a company named The Future. They even obtain assurance that this is what they will do after Adhi gets the machine functioning, and they look forward a year to see how their organization will appear.

Even before they start selling everyone their machine, The Future has made them wealthy. There are disturbing elements to the technology, but with the knowledge of what they will accomplish, Ben and Adhi continue forward even as difficulties mount up and begin to strain their bond. Ben envisions billions of dollars in potential profits if they can harness this talent and offer it to the average man and woman. He defends everything by stating that the duty for exploiting future knowledge lies on the individuals who buy their equipment.

The concept of seeing into the future via a quantum computer is interesting and well-explained. However, the book doesn't unfold the technological details. It may have come off as strange or even supernatural, but Adhi's idea, coupled with the development process, ground it more than enough to make it appear plausible. The author has done some good work in a way that indicates he considered the ramifications of this technology even though his primary characters did not. As we see all of this unfold, it appears that the dysfunctional connection between Ben and Adhi is driving the plot.

Then comes the conclusion, with the issue of whether Ben and Adhi will be able to undo what they have unleashed in time to save the planet from killing itself. And that's an ending you'll have to make up for yourself because the author didn't write it. The finale reveals the entire plot, which may irritate some readers. As you may expect after witnessing the evil side of the machine they made, Ben and Adhi must decide since the monster they created has the potential to pull the entire universe into a horrific catastrophic annihilation. But they already despise each other's guts since selfishness and envy have ruined what remains of their union.

The narrative does not offer anything unusual or remarkable to the table. It's a little formulaic. From the start, you can predict how the tale will progress and finish. However, it remains a promising, engaging, and above-average moving experience. The book's structure is cool. Emails, messages, Tweets, blog posts, newspaper stories, government papers, and a variety of other multi-media are all written in an archival and historical style. It's not simply a smart gimmick, though; there's a purpose why it's narrated this way that becomes obvious later in the book. As a result, it is a fairly quick read.

While the narrative may have been more focused on technology, it appears that the author chose to change his original attention to how technology impacts the planet and its people by diving into human concerns. There are several sections of the book that readers may skip without losing sight of the main plot. While reading the book, readers

must be careful not to fall into the trap of fatalism, since some passages instill such an idea in their thoughts. Adhi and Ben, for example, do a series of tests that persuade them that knowing the future cannot affect it.

The publication of this book could not be more timely, as social media companies that made fortunes by allowing anyone to say pretty much whatever they want have now been forced to reckon with the consequences because it turns out that there are a lot of people who are shameless opportunists who lie constantly, and even more people who are willing to swallow everything they find on social media without question. Unfortunately, the global political landscape is rife with such opportunists these days.

CONCLUSION

This novel falls within the genres of science fiction, time travel, and techno-thriller. The readers also learn about venture capital and the office politics of the board of directors. The central question in this book is to predict what will happen one year in the future. The plot of the novel is based on a long-held fantasy: a gadget that can accurately anticipate everything! It warns readers that such a technology may have drawbacks or long-term ramifications, such as social, economic, political, and personal implications. It also cautions against assuming that humans would be able to overcome the technological, scalability, and ethical risks of such a system. The narrative engulfs readers in a fascinating mash-up of the problems and opportunities they would face if they had perfect knowledge of the future.

FUTURISTS IN ACTION

A PRIMER ON FUTURES STUDIES, FORESIGHT AND THE USE OF SCENARIOS

by Joseph Voros



This article is the first of a two-part article designed to introduce futures studies and foresight to those less familiar with the field. The second part of the article will appear in the August edition of Future News.

THE NAME OF THE GAME

The ‘futures field’ is very broad, and goes by a variety of different names: ‘futures research’, ‘futures studies’, sometimes ‘futures analysis’, ‘futurism’, ‘futuristics’, or even ‘futurology’. The terms ‘futurism’ and (ugh!) ‘futurology’ are particularly archaic, and today have rather negative connotations of, respectively sloppy or very superficial work, or of excessively empiricist and overly-prediction-oriented work; they are actively discouraged by those who work seriously in the field. I will use the blanket term ‘futures field’, or just simply ‘futures’. Note that ‘futures’ in this sense has *nothing whatsoever* to do with stock market ‘futures trading’ or speculation. Instead, futurists use the plural of ‘futures’ because the master concept of the futures field is that of the existence of many potential *alternative futures*, rather than simply a single future.

THE THREE ‘LAWS’ OF FUTURES

Futures (or foresight) work is *not*, contrary to popular misconception, about prediction or crystal-ball gazing and trying to guess what ‘the future’ will be. Serious futurists are not in the business of prediction. Roy Amara, a former president of the Institute for the Future once suggested in 1981 that there are three fundamental premises upon which the futures field rests. I have adapted these and like to call them, not too seriously, ‘The Three “Laws” of Futures’.

The future is not predetermined. At the most fundamental level of nature, the physical processes of the universe are inherently indeterminate (this is the Heisenberg Uncertainty Principle of physics). Given this, how could any future stemming out of present physical processes be anything other than indeterminate also? Therefore, there is no, and cannot be, any *single* predetermined future; rather there are considered to be infinitely many potential *alternative futures*.

The future is not predictable. Although this sounds similar to the previous ‘law’, it is quite different, for the following reason. *Even if the future were predetermined*, we could never collect enough information about it to an arbitrary degree of accuracy (i.e., to an infinite number of decimal places) to construct a complete model of how it would develop. At some point, the errors introduced by not having infinitely-precise information would cause the model to deviate from ‘reality’ (whatever *that* is). And because the future is *not* predetermined, predictability is *doubly* impossible; we are therefore able, and forced, to make *choices* among the many potential alternative futures.

Future outcomes can be influenced by our choices in the present. Even though we can’t determine which future of an infinite possible variety will eventuate,

“ Serious futurists are not in the business of prediction..

nevertheless we can influence the shape of the future which does eventuate by the choices we make regarding our actions (or inaction) in the present (*inaction* is also a choice). These choices have *consequences* and so they need to be made as wisely as we know how.

All of these reflections add up to a need to take *responsibility* for our futures. The actual future (singular) which eventuates, and in which we will ultimately live and experience as ‘the present’ at *that* time, will be governed by our actions (or inaction) in *this* present, along with the choices we have made among many alternative potential futures (plural). Our choices and the passage of time reduce the infinite field of *potentialities* to a single experienced *actuality*, which then passes into history and cannot be changed. In other words, and this is the key point, we can only have an influence on the potentialities of the ‘yet to be’ and can do nothing about the ‘what has already been’. Therefore, let us try to create a better present moment (and thus past history), by choosing more wisely and responsibly among our potential alternative futures.

TYPES OF POTENTIAL FUTURES

It is useful to distinguish *four* classes of potential alternative futures (this taxonomy is a considerably adapted form of one described by Henchey in 1978:

Possible futures. This class of futures includes all the kinds of futures we can possibly imagine – those which ‘*might* happen’ – no matter how far-fetched, unlikely or ‘way out’. They might, as a result, involve knowledge which we do not yet possess (the ‘warp drive’ of *Star Trek* is a good example), or might also involve transgressions of currently-accepted physical laws or principles. I tend to characterise these futures as being reliant on the existence of some *future knowledge* (i.e., knowledge we do not yet possess) in order to come about.

Plausible futures. This class encompasses those futures which ‘*could* happen’ (i.e., they are not excluded) according to our *current* knowledge (as opposed to future knowledge) of how things work. They stem from our current understanding of physical laws, processes, causation, systems of human interaction, etc. This is clearly a smaller subset of futures than the possible.

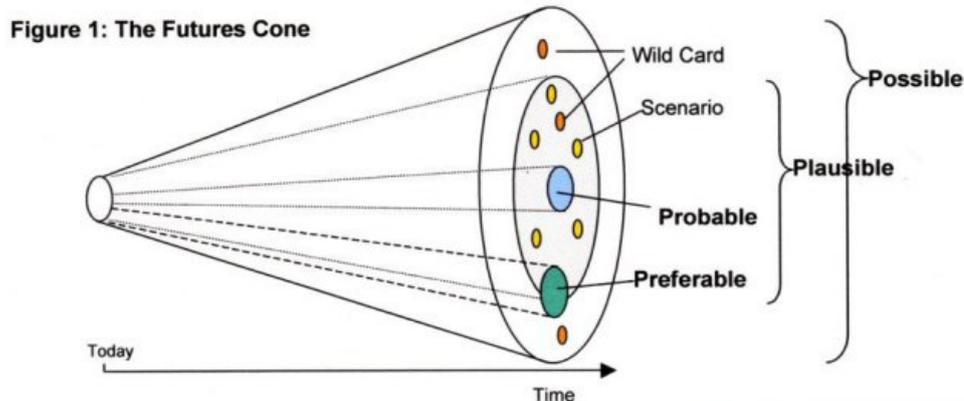
Probable futures. This class of futures contains those which are considered ‘likely to happen’, and stem in part from the continuance of *current trends*. Some probable futures are considered more likely than others; the one considered most likely is often called ‘business-as-usual’. It is a simple linear extension of the present. However, trends are not necessarily continuous over long periods of time, and discontinuities in the trends may occur. Some trends may fade out suddenly, while new ones may emerge unexpectedly. Some people think that studying or ‘reading’ trends is the whole game of foresight or futures work, but it is clear from this description that merely reading trends gives rise to a *much smaller* class of futures than the previous two.

The three classes of futures described above are all largely concerned with *informational* or cognitive knowledge. The fourth class, *Preferable futures* is, by contrast, concerned with what we ‘want to’ happen; in other words, these futures are largely *emotional* rather than cognitive. They derive from *value judgements*, and are more overtly subjective than the previous three classes. Because values differ so markedly between people, this class of futures is quite varied. Preferable (or *preferred*) futures can lie in any of the previous three classes.

The Apollo Moon Landing, for example, was a preferred future of President Kennedy which began as merely *possible* but not yet *plausible* (from the perspective of 1961) because the knowledge did not yet exist at that time to

achieve the goal. The requisite knowledge was created during the decade of the 1960s until the idea of actually achieving the landing in the desired time-frame moved into the realm of the *plausible*, then the *probable*, and was finally actualised as reality in 1969. It is now, of course, a key event in human history. This example indicates an important point regarding thinking about futures: the judgement of what is possible, plausible and probable (and perhaps even preferable) depends on being 'situated in time', and the assessments may change as time goes on. Preferable futures may be so desirable that we consciously seek to move them out of the realm of the merely possible and into the realm of the distinctly plausible by actively *creating* the knowledge needed to bring them about as reality. It is this ability to envision and then move towards desirable preferred futures (or to consciously move away from undesirable futures) which gives humanity its greatest chance for further survival.

Figure 1 shows a graphical representation of these four types of alternative futures, using a well-known metaphor: the 'futures cone,' which expands from the present on the left into alternative futures on the right. Visible in the diagram are 'scenarios', depicted as regions in the Plausible realm. Also visible are 'Wild Cards' – low-probability events or mini-scenarios (hence they are outside the Probable realm) which, if they occurred, would have very high impact. They can be either Possible or Plausible, according to the above definitions. Examples would include an asteroid or cometary impact with Earth (plausible), or very-high-speed interstellar space travel (possible).



LEVELS OF DEPTH IN FUTURES THINKING

Richard Slaughter has distinguished four levels of 'depth' in futures thinking. These may be conceptualised as follows.

'Pop' futurism. This is the shallowest and most superficial level of futures thinking; it is also by far the most widespread, well-known and popular. It is usually highly media-oriented and is found in most TV programs dealing with 'the future', in newspaper magazine articles, popular books, 'sound bites' on the news etc. This is the level of 'reading trends' which, as we saw earlier, only reveals a very small segment of the potential futures which may await us. I often call this type of future 'techno-wow!' because of its frequent up-beat preoccupation with technology. There is often little insight found at this level.

Problem-oriented futures research is more serious, and attempts to look at deeper issues and their causes. It is often concerned with how organisations and society might, or ought to, respond to challenges lying in the nearer-term future. It is where most corporate strategic thinking is conducted and, in the public sector, often touches upon the 'big-picture' problems, such as climate

change, soil erosion, ozone-layer depletion, salinity, etc. Most futures work takes place in this realm.

Critical futures studies attempts to “probe beneath the surface” of the social causes of the problems being addressed at the previous level. This level of depth deals with how we *create* the problems in the first place through our worldviews and deep, unquestioned assumptions. It is concerned with how we create meaning in a social context, and with what we consider important; there is re-questioning of what constitutes social life, often questioning taken-for-granted notions such as ‘growth is good’, and the treating of nature merely as a resource to be exploited. There is as yet relatively little work done at this level of depth, although this is now changing.

The deepest level identified by Slaughter he calls *epistemological futures inquiry*. This is where the foundational areas of the futures field feed into the whole futures enterprise: philosophy, epistemology, ontology, cosmology, macrohistory, the study of time, the nature and influence of consciousness on the human endeavour etc. It is at this level, the deepest, Slaughter suggests, that the most powerful and insightful forms and approaches to futures work operate, “unfreezing the everyday life we take for granted” and “identifying new sources of freedom and new ways ahead”.

This ‘layering’ of futures thinking has been used to develop an analytical method, *causal layered analysis* which is also very useful in workshop settings to get to the deep issues beneath the ‘litany’ of problems and themes which tend to capture and divert our attention and paralyse us into inaction.

APPROACHES TO THE IMPLEMENTATION OF FORESIGHT

Slaughter has also suggested three broad types of *implementation* or application of foresight work.

Pragmatic foresight is mostly focussed on competitive advantage in business and industry. It seeks new markets, new challenges, innovation, is highly entrepreneurial, and looks at the future as a competitive space within which one needs to manoeuvre in order to gain advantage. Most of the foresight work undertaken in the corporate world is of this nature.

Progressive foresight. Whereas the pragmatic approach is about competing *within* industry, the progressive approach seeks to *redefine* or *transform* industry and the way industrial processes are conceptualised and carried out. In other words, the very notion of what constitutes industry (or competition) is called into question. The concepts of cooperation, sustainability and sustainable development are some of the key aspects of this approach to implementing foresight.

Civilisational foresight is aimed at not only transforming industry, but re-conceptualising human activities and transforming the *whole of society*. It seeks to take a large-scale, big-picture ‘global view’ of human activities world-wide, and is concerned with finding ways to change the current trajectory of humanity away from nightmarish Dystopian futures towards futures that “sane people would *want* to inhabit”. This is the most urgently needed application of foresight (i.e., at a social level), yet it is also the least common.

Clearly, then, there are different aspects to futures work: the *type* of futures concerned, the level of *depth* at which the work is conducted, and the *approach* to implementation. There are, of course, many other aspects to futures, but these few paragraphs of brief introduction should serve to begin to widen and deepen an understanding of what is still a largely misunderstood knowledge discipline.

Signals in the Noise

THE TOP 12 RISKS AND OPPORTUNITIES FOR 2022

By Mathew Burrows and Robert A. Manning

This is the second part of a story, the first part of which ran in the April 2022 edition of Future News.

TOP OPPORTUNITIES

1. World Trade Organization members make needed reforms

If the Biden administration wants to make good on its rhetoric about upholding an inclusive, rules-based international order, halting economic fragmentation and COVID-fueled protectionism should be a priority. That requires fixing a broken World Trade Organization (WTO), which governs [as much as 80 percent](#) of global trade. Absent the WTO setting rules that allow nations to raise concerns and settle their disputes, the world would drift toward trade restrictions and regional blocs dictated by major economic powers. In a [well-received recent speech](#), US Trade Representative Katherine Tai issued sharp criticisms of the WTO but pledged a US commitment to reforming it. Such reforms are necessary and doable, starting with a reinvented dispute-settlement mechanism that avoids litigation and boasts an effective oversight board. They should also include transparency on subsidies, new digital-commerce rules, a greater role for climate and labor rights, and trade liberalization focused on specific sectors.

Probability:



2. Researchers develop a universal vaccine against all coronaviruses

By now, most of us have realized that SARS-CoV-2 is not going away anytime soon. Heading into the third year of living with the virus, we're seeing more waves of infections even in areas where there are relatively high vaccination rates—along with a highly concerning new

variant, Omicron. Then there are the hundreds of other COVID-type viruses of varying strength in existence, a small minority of which could prove deadly. New research suggests that [other animals besides bats](#) could be carriers of SARS-like coronaviruses. We need a universal vaccine against all coronaviruses, including SARS-CoV-2 variants present and future, and some promising research along these lines is already underway. Scientists at the University of North Carolina's [Gillings School of Global Public Health](#), for example, have been working on just such a vaccine and seen encouraging results with mice. Their approach is similar to that of the Pfizer and Moderna vaccines, except they merge mRNA from several coronaviruses. Many [other scientists are engaged](#) in parallel efforts. All of this could yield the key to containing the next outbreak. The US government should make this research a national priority and scale it so everyone in the world can benefit from the results.

Probability:



3. World powers cooperate on new AI standards and regulations

AI applications—from facial recognition to employment screening—are increasingly being deployed across industries and will become ubiquitous during this decade. Yet there are few agreed-upon global rules or standards in this realm. Though AI is a technology dominated by the United States and China, the European Union is seeking to create a regulatory framework that can establish such standards. A [draft](#) Artificial Intelligence Act before the EU Parliament and European Commission sets detailed strictures for AI use and commerce based on a hierarchy of risks

Signals in the Noise

THE TOP TWELVE RISKS AND OPPORTUNITIES FOR 2022

(with job recruitment, critical infrastructure, and law enforcement among those identified as high-risk). While there is widespread overlap in declarations on AI ethics by the United States, the EU, Japan, and China, common ethical values have not been put into operation. The EU's initiative should spur the United States to forge global AI norms. The new US-EU Trade and Technology Council should prioritize building a transatlantic consensus on these issues, which can lay the groundwork for a broader agreement among the Group of Twenty (G20) nations.

Probability:



4. The United States and the European Union forge a transatlantic approach to digital regulation

The EU is beginning to define its concept of “tech sovereignty” as a means of making the union more competitive. A [package of pending legislation](#) mainly targets large US tech firms that the EU sees as “gatekeepers” in setting the terms of data commerce. This regulatory approach would rein in US companies and change their business models, widening the transatlantic gap on tech regulation. The US Congress should see the EU's ambitions as an opportunity to move on the United States' own digital regulations while the Biden administration should prioritize efforts to find common ground with the EU on digital matters. A US-EU consensus would create leverage for establishing global standards on these issues.

Probability:



5. The United States helps avoid another Ukraine crisis

The growing crisis triggered by Russia's threatening troop movements against Ukraine should be turned into an opportunity to put relations between Russia and the United States on steadier ground. One step to slow

the current momentum toward a dangerous confrontation would be for the United States and European Union to broker talks designed to get Moscow and Kyiv to adhere to an updated [Minsk II](#) framework. The United States should not assume that increasing sanctions on Russia or arms shipments to Ukraine will deter Putin; just as likely, they will goad him into making further incursions against his neighbor before it becomes too costly for him to do so. The conflict in Ukraine can no longer be set aside in Biden's efforts to stabilize the US-Russia relationship by establishing red lines on cyber warfare and other strategic issues. If Washington finds ways to finally lower tensions over Ukraine, it could open up more opportunities to reduce friction with Moscow—at a time when the United States would rather focus on China.

Probability:



6. China and the United States reach a détente

Though [media reports portrayed](#) the Biden-Xi summit as [merely more words](#), the nearly four-hour meeting in November appeared to signal a recognition by both leaders that relations between the two superpowers are spinning out of control and toward conflict—at a time when Biden and Xi must also focus on difficult domestic agendas. The summit, [as Biden said](#), was intended to put in place “guardrails” to reduce risk and incrementally create a framework for managing a competitive coexistence between the countries. The two leaders, in effect, set a mandate from the top to their respective senior officials and bureaucracies to unwind the building confrontation and work through the thorny differences that brought them to the brink. In response, the US and Chinese governments [restored](#) senior-level military-to-military talks. Perhaps most importantly in light of [Beijing's buildup of its nuclear-weapons arsenal](#), Xi seemed to reverse China's stance for more than a decade by [moving toward engaging](#) in a nuclear-arms dialogue with the United States—reflecting

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the fact that new mutual vulnerabilities with regard to nuclear weapons could motivate the two countries to establish new guardrails. Possible areas for cooperation include shared interests related to trade, climate change, and energy security along with addressing the challenges posed by instability in Afghanistan and the nuclear programs of Iran and North Korea. It remains unclear whether the US-China relationship will reach a new normal or revert to the downward spiral of distrust characteristic of recent years. But there is now at least an opportunity to test each other's intentions.

Probability:



7. The United States launches an Asia-Pacific digital-trade accord

US Indo-Pacific strategy has a gaping hole on trade. The United States should plug it with a big opportunity: fast-growing digital commerce, which accounted for [17 percent of global retail trade in 2020](#). There is a compelling case for a regional agreement that builds on high-quality digital-trade language in the US-Mexico-Canada Agreement, the US-Japan Digital Trade Agreement, and the Trans-Pacific Partnership (before the United States withdrew from the pact). A new type of accord—akin to the [Singapore-New Zealand-Chile Digital Economy Partnership Agreement](#) (DEPA), which some officials in the Biden administration see as a model—could pioneer a more inclusive worker- and small business-friendly approach. DEPA takes that tack with provisions on e-invoicing, express shipments, interoperable fintech (e-payments), trusted networks, and AI cooperation. And it's modular, permitting nations to accede to only parts of the agreement.

Probability:



8. The world seizes low-hanging fruit on climate change

The [COP26 final statement](#) fell short of putting the planet on a path to limit global warming to less than 2 degrees Celsius. But stopping deforestation, slashing methane emissions by 30 percent, and establishing global carbon-trading rules could all have significant payoffs in greenhouse-gas reductions if those pledges from the climate conference are actually implemented over the next decade. The US-China climate accord also announced in Glasgow could help accelerate those goals by, for example, contributing to a push for a 50 percent methane reduction by 2030. Ramping up US natural-gas exports to China, the world's largest coal consumer, would be the fastest way to phase down growing Chinese coal use. Another useful step would be to add enforcement provisions to the carbon-trading rules delineated at COP26. The G20 could flesh out the conference's vague deforestation pledge by encouraging nations to plant one billion trees by 2025 with the assistance of public-private partnerships. Governments could give farmers credits for improving their land to better capture carbon. The [bipartisan infrastructure law](#) recently signed by Biden will retrofit buildings to make them more energy efficient, fund hundreds of thousands of electric-vehicle charging stations, and invest billions of dollars in smart grids so that utilities make more use of renewable energy, while the Build Back Better legislation, whose passage [is now in doubt](#), [devotes half a trillion dollars](#) to fighting climate change. These initiatives don't amount to the big-bang climate solutions that many hoped would come out of COP26. But they're not nothing either.

Probability:



9. The United State, China, and Russia start cooperating in space

On November 15, Russia fired a missile to destroy one of its satellites and created more than 1,500 traceable pieces of debris in low-earth orbit, forcing crew members of the

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International Space Station to take shelter in their spacecrafts in case the station was hit. Moscow [claims](#) the missile test was needed because of US plans to upgrade its strategic missile-defense systems. The United States, China, and Russia have all added debris to space over the years, and they increasingly see space as a key domain for military competition. Hundreds of thousands of pieces of debris [are now hurtling](#) through space at around 15,500 miles an hour, threatening human space flight and the nearly [five thousand active satellites](#) in orbit. Our tech-dependent way of life would be imperiled if communications satellites are disabled, and the dangers are only increasing: By [one estimate](#), there could be one hundred thousand satellites in orbit by 2030. No international system of space-traffic control [exists](#), and there is no independent global body providing data on satellite positioning and trajectories. A good first step would be for the United States, China, and Russia to reach some understandings on their moon missions. The Russians [have rejected](#) an invitation to join the NASA-led Artemis project, citing the “departure of our American partners from the principles of cooperation and mutual support,” and are instead joining with the Chinese to create a competing International Lunar Research Station. While it might be too late for all three powers to cooperate on a single lunar initiative, they could derive mutual benefit from sharing their plans and the results of their explorations.

Probability:



10. The United States takes the lead in responding to an ailing Latin America

Latin America has been hit especially hard by COVID-19. The middle class there could lose its foothold and, in a repeat of the 1920s and 1930s in Europe, [turn away from democracy](#) as a result of impoverishment. In response, the Biden administration must do more than just increase foreign aid to the region to stop migrant flows. A Bill Clinton-style Free Trade Area of the Americas is likely a bridge too far given the aversion of the Biden administration and Congress to large-scale

regional trade agreements. But the United States can still play an active role in fostering debt relief, assisting with climate-change adaptation and mitigation, building up an existing [high-tech base](#), and nurturing greater regional cohesion. While increasingly focused on China and Asia, the United States can’t afford to ignore its own region, particularly since many of the day-to-day issues Americans worry about—immigration, the drug trade, climate change (via the destruction of the Amazon rainforest)—have their roots there. Next year’s Summit of the Americas is an opportunity for the Biden administration to clarify America’s commitment to its neighbors.

Probability:



11. Congress strikes an immigration-reform deal

There’s an immigration deal to be had if Republicans and Democrats can get beyond their dug-in positions and move toward a reform package that balances the Republican goal of a more secure border with the Democratic desire for citizenship for the eleven million undocumented immigrants estimated to be in the United States. The [last major bipartisan reform effort in 2013](#) garnered sixty-eight votes in the Senate and would have fulfilled both objectives along with updating immigration criteria to attract more high-skilled immigrants, but House Republican leaders never gave it a vote. The Build Back Better legislation recently passed by House Democrats provides [work authorization—but not citizenship—for up to ten years](#) to an estimated 6.5 million undocumented workers who have lived in the United States since 2011 and prevents the expiration of hundreds of thousands of unused visas. Even if these measures pass the Senate, which [is unlikely](#), they fall well short of comprehensive immigration reform. Congress should remember that immigration is of growing importance for the future of the country: Without new immigrants, the US population is [slated to start declining](#) in the 2030s.

Probability:



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12. The United States backs the European Union's strategic autonomy

It's in the US interest for Europe to take on more responsibilities as a global actor and increase its capabilities. The Biden administration should welcome EU [strategic autonomy](#) instead of worrying about whether it will harm NATO. So long as the threat posed by Russia persists, Central European countries will want a major role for the United States and NATO in European security. But Russia is not the only threat to the security of Europe, which also faces challenges in the Middle East and Africa in the form, for example, of state failures or refugee and migrant flows. If the Biden administration is serious about making Asia its primary geopolitical focus, it would benefit from Europe equipping itself to manage these other issues on its own.

The EU [defines](#) strategic autonomy as ensuring its “capacity to act autonomously when and where necessary and with partners wherever possible.” That does not exclude cooperation

with the United States, but European leaders want the ability to act independently where it suits their interests—including their exercise of economic power in realms such as technology. The EU has become a norm-setter on data privacy and is venturing into new competition rules to curb the power of US tech giants in Europe. To an extent, [transatlantic economic differences](#) are nothing new, and debates between Europeans and Americans on an issue-by-issue basis can actually be beneficial for both sides. But arguing with Europe over its right to achieve sovereignty will only undermine the alliance over the long run. Being an ally of the United States should not be equated with subservience to Washington. The United States, which helped facilitate European integration after World War II, should continue to be its chief proponent.

Probability:



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