

ITHI Working Paper Series

#1. Triple Helix in the Coronavirus Era

by Henry Etzkowitz

Many organizations have experienced difficulties in moving from physical to virtual operation but for the Triple Helix Association (THA) it is business as usual. While we have an official physical address at the Accademei dei Lincei in the Palazzo Corsini on the Via della Langara in Rome, our modus operandi has always been to work from home, whether in Terni or Palo Alto, and beyond, interacting over the Internet. Yet, we did come together at least once a year for a Conference or Summit. That has all changed with Covid-19. Like many other Associations we are experimenting with an on-line meeting for our 2019 conference. (You should receive this Corner in time to join the event free as a THA member or, if not yet a member, you may join THA for that purpose and more!) We look forward to a report from the Tampere organizers about their experience in pivoting to virtual in the next Helice).

Post new-normal, even post-vaccine, the shelter in place experience is expected to have long-term societal effects, for example, on city and suburban living patterns, and regional location decisions, organizational and individual. Many metropolises are banning vehicular traffic, except for local residents, from a growing number of city streets allow room for socially distanced pedestrians, cyclists and café tables. Google has halted its purchase of offices and land in San Francisco, whether temporarily or long-term is not known yet. Indeed, some firms plan to extend work from home policies beyond the crisis e.g. Twitter or even give up central offices all together. Facebook, a firm that once offered employees a \$10,000 bonus for locating within ten miles of the company's Menlo Park Headquarters, is expecting reduced need for a physical presence (Streitfield, 2020). Indeed, reversing field; it is open to employees relocating from Silicon Valley to less expensive regions, albeit with reduced salaries. The virtual economy has thus far demonstrated that it can flourish under lockdown but it is, nevertheless, dependent upon an underlying physical economy whose workers' pay a disproportionately high health price.

Hopefully, a new regard for health care and essential workers in service, agricultural, logistics and manufacturing industries will persist beyond the pandemic crisis, with improvement in their conditions of work and remuneration but this is sadly unlikely. More predictable is that supermarket workers, drivers, slaughterhouse workers and other mainstays of the physical economy will disappear from focal attention once the health emergency recedes. It is indeed noteworthy that the 1918-1920 flu pandemic virtually disappeared from collective public memory within a relatively short time (Barry, 2004). As Arthur Miller expressed his honor for an underappreciated individual in *Death of a Salesman*: Attention must be paid. Neither the pandemic, its economic effects, and the persisting racial issues and social inequalities that they exacerbate, will dissipate without a concerted response to all. A Triple Crisis calls for a creative Triple Helix solution.

CRISIS RESPONSES

An interacting health, economic and civil society breakdown is at hand. The confluence of pandemic, potential economic depression, and demonstrations protesting police violence are creating a proto-revolutionary civil unrest situation in the US that may be resolved peaceably or violently, to various degrees. The original triple helix of university- industry-government collaboration was invented in New England in response to the Great Depression. The innovation created to develop new firms from academic research became the prototype for the contemporary venture capital firm (Etzkowitz, 2002). It also became the model for the Manhattan Project, a bottom-up inspired; top- down implemented university-industry-government crash program to develop an atomic bomb during the Second World War (Groueff, 1967). The closest to the former in the US is likely the crash program, by a high-tech firm located in the former Brooklyn Navy Yard, with support from the New York City Economic Development Administration to produce a basic ventilator device based on a student design project completed at MIT several years earlier (Somers, 2020). Another ventilator effort, organized by the Dyson firm, with its own funds in response to a British Government Call, produced a prototype in a few weeks' time but production did not ensue for reasons unstated, despite initial promises of a large British Government purchase order accompanied by a corporate donation (Bashir, 2020; Dyson Company website, 2020).

At the US national level the so-called "Warp Speed" vaccine development program has a General seconded from the Army to handle logistics and an Executive drawn from a biotech firm to administer the program. To date, there is no word of an R&D unit drawn from academia, like the Los Alamos Lab, run by Robert Oppenheimer as in the original Manhattan Project, but the program is likely drawing upon existing academic research programs, remaining in place. Unfortunately, an early ramping up of the project was hindered by the Trump Administration's short-sighted closing, in recent years, of various federal government units, and projects organized in previous administrations to respond to pandemic crises (Riechmann, 2020). Previous administrations also had their shortcomings. A more than a decade long visionary effort to subsidize design and production of a basic ventilator was lost, likely due to insufficient government oversight of the private sector (Klush, Kliff and Silver-Greenberg 2020).

What we know about these various efforts is based on news and organization reports. In due course, the above instances, and their counterparts elsewhere, will provide a strategic search site (SRS) (Merton, 1987) for the investigation of triple helix responses to a crisis or lack of same. We can expect the presence, or absence, of a convening authority to be a key dimension for investigation. It is likely that, as in the period between the 1929 stock market crash and the inauguration of President Roosevelt, the Triple Crisis will worsen. Renewal of infection rates may be expected, especially in areas where social distancing was not in place effectively or long enough to drive the coronavirus out. Economic patches will likely be too late or insufficient to avert losses of significant sections of the economy.

President Hoover was an effective leader in marshalling public and private resources in response to the European food crisis in the wake of the First World War, yet his conservative laissez faire instincts and the political context in which he operated precluded taking measures on the scale required at home to address the Depression. We shall likely suffer a sustained interim period of economic, social, political, racial and health instability until a new administration takes office with a mandate for thoroughgoing change thrust on it. Franklin Roosevelt did not run on a radical platform and neither will Joe Biden. Nevertheless, if a Biden administration takes office, it will likely respond to underlying racial and social issues, given its

strong base in the Afro-American community, as well as overt economic and health issues.

Of course, Trump could luck out. Warp-speed, the quasi- Manhattan project to achieve a vaccine could succeed in record time. The President could go with his instinct to spend whatever it takes to revive the economy by supporting a massive multi-trillion dollar infrastructure program that would lift all boats. During the 1980' s, when New York City was unable to repair the Wollman skating rink in Central Park, Trump volunteered his firm and successfully accomplished the job. During that same era, he demonized several young black and brown men who were later shown innocent of rape charges, brought against them by police seeking a quick solution to a highly publicized assault in that same park that led to their conviction and imprisonment. Which side of Donald Trump are we likely to see for the rest of his Administration? Perhaps both, alternatively.

A positive effect of the pandemic is the creative collaborations generated in response. THA members have initiated various projects including a special issue of Triple Helix, an on-line survey to generate data for a scenario development exercise, and the organization of national and regional teams to track different Triple Helix and societal responses to the crisis (See www.triplehelixassociation.org). You are invited to participate!

THE DARK SIDE OF SILICON VALLEY

Much has been made of the positive effects of social media, making it possible for ordinary people to publish and distribute text and images, semi-professionally. However, artificial intelligence and machine learning tools, abetted by data theft, has made it possible to target individuals and groups susceptible to misinformation, without their knowledge or virtually any ones' awareness as the content disappears into the void, retained only by the platform firms and perhaps the targeted persons. Both, the British Brexit vote and the US 2016 election were affected by the efforts of the Cambridge Analytica firm, since disbanded, primarily using Facebook, with the aid of the firm itself to influence these elections (Cadwalladr, 2019).

Social media has been effectively utilized to spread race hatred and fear of immigrants, successfully getting people to act against their own interests. Although such tactics are in the arsenal of demagogues, like Hitler, utilizing the mass media, an under-regulated social media industry, whose earnings increase as division and discord increase as a result of paid content, has made firms like Google, Facebook, and Twitter, reluctant to exercise control over the use of their platforms. In a recent modest exception to the rule, Twitter placed a modest warning tag on a Trump tweet, earning his ire and a chilling Presidential Executive Order in return. The potential of social media as a surveillance and control tool has been most thoroughly exposed by the Observer newspaper and a Parliamentary Commission, although bringing Facebook' s CEO Mark Zuckerberg to Westminster to testify has proved impossible to date (Pegg, 2019).

COLLATERAL CASUALTIES

In addition to direct responses to the medical emergency, we should also be on the lookout for analogous responses to the effects of the coronavirus crisis that may become the basis for a renewed Triple Helix.

While the rise of computer generated music and art has been mooted, these constructs are a long way from producing their “Picasso” so we may proceed on the assumption of relative irrelevance of longest-term effects, stated by JM Keynes in response to the Great Depression that in the long run we are all dead, and focus on generating a novel response to the crisis of our time, with the tools at hand or within reach. The Internet and Augmented Reality techniques accompanied by related streaming technologies for distribution of mechanical reproduction have the potential to recreate the “aura” of the original work of art. (Etzkowitz, Schofield and Kehl. Under Review).

As usual, artistic imagination provides a window into the future. A furloughed children’s theatre performer in Prague took the initiative to reinvent live theatre in the context of lockdown strictures. His initial project staged a reading from a small boat, quayside, but only one spectator appeared. His next effort, “Art Parking,” adapting the almost superseded drive-in motion picture theater to an open parking area adjacent to the city’s vegetable market was quite successful. A range of theater groups, from local to national, were invited to contribute performances from a platform in front of parked cars. More than eleven thousand persons attended in a month’s time, expressing their appreciation via car klaxon. The audience maintained social distance in their cars, with performers and audience visible to each other through auto windscreens (Kingsley and Vancon, 2020). Others who are waiting out the pandemic without reinventing themselves, like the family circus parked in a field on the outskirts of Rome that extended its rental for the duration, may fall by the wayside.

The early response of exemplary arts institutions and the public to the strictures of the coronavirus point the way forward. The lectures offered by the Whitney Museum along with placing an increasing number of the Museum’s collection on-line has possibilities for recreation and enhancement of the physical museum experience, with or without the crowds, through augmented reality and three-dimensional presentations. Perhaps we may participate in future Internet conferences, with our avatars representing us in chat room spaces at virtual coffee hours and other traditional gatherings reimaged. Mixed modalities, making the arts more broadly and inexpensively accessible while retaining a modest local audience augur the future for scientific conferences as well as artistic presentation and performance.

CONCLUSION: WAITING FOR CORONAVIRUS

There has been debate within the Triple Helix community over the time frame for a vaccine and when regular conference activities could be retaken. An exceedingly tight deadline could conceivably be met for a COVID 19 vaccine, even as soon as late Fall 2020, according to Dr Anthony Fauci, head of US NIH Division of Infectious Disease. With everything highest priority and unlimited resources, as in the Manhattan Project, with close U-I-G collaboration and development stages collapsed into one another, it is possible! However, biological phenomenon is less tractable than physical, where once proof of principle had been achieved, the end result was virtually inevitable.

The coronavirus is not so simple. A wily natural creature may hold us hostage for longer or shorter. In the USA, we have seen a nonlinear model of grief: denial->acceptance; denial as well as denial-> acceptance, split according to political ideology. Under conditions of pandemic induced social breakdown, what type of analytical strategy is most appropriate? We suggest Weberian “real typical” extrapolation from emerging trends (Ringer, 1997). Viewed in interaction with each other, through a Triple Helix lens,

reasonable implications may be inferred e.g. persistence of virtualization, making superfluous for the foreseeable future a third runway at Heathrow; the unviability of Boeing and Airbus unless they collaborate to produce an advanced design, superseding the thousands of grounded craft that are unlikely to be fully relaunched anytime soon and, inter Alia, the riskiness of presuming resumption of full-scale international in-person scientific conferences in a year' s time.

We may expect comparable analogous effects to the arts on the future of scientific meetings and associations, a mix of return to normal and integration of innovation. Combined with an increasing wish to reduce one' s carbon footprint, a full return to previous levels of optional long-distance air travel may not occur. An Internet meeting has its pluses and minuses: on the positive side of the ledger, the sharply reduced expense of participating allows broader participation; on the negative, the strictures of virtual software, to date, will limit informal interactions. An intermediate model could be a virtual conference conducted in tandem with one or more regional meetings, allowing multiple local in-person gatherings, coordinated with an international virtual reach. Even post-pandemic, we may well wish to take advantage of the positive elements of each format and organize blended meetings, combining virtual and in-person elements.

REFERENCES

Barry, J. (2004) *The Great Influenza*. New York: Viking Penguin.

Bashir, N. (2020) James Dyson designed a new ventilator in ten days. He' s making 15, 000 for the Pandemic fight. CNN Business 19 March.

Cadwalladr, C. (2019) Facebook's role in Brexit - and the threat to democracy (Carole Cadwalladr, TED2019). www.ted.com/talks/carole_cadwalladr_facebook_s_role_in_brexit_and_the_threat_to_democracy?utm_source=tedcomshare&utm_medium=email&utm_campaign=tedsread.

Dyson Company Website. Ventilator Statement by James Dyson, May 2020.

Etzkowitz, H. (2002) *MIT and the Rise of Entrepreneurial Science*. London: Routledge.

Etzkowitz, H, Schofield, T and Kehl, L. (Under Review) *Ars Gratia Artis: Rethinking Industrial Policy for the Arts in the Coronavirus Era*.

Groueff, S. (1967) *Manhattan Project*. Boston: Little, Brown.

Kingsley, P and Vancon, L. (2020) The Drive-In Theater: Keeping Drama Alive During the Lockdown. *The New York Times*, 31 May,

Klush, N, Kliff, S and Silver-Greenberg, J. (2020) The US Tried to Build a New Fleet of Ventilators. The Mission Failed. *The New York Times*, 29 March.

Merton, R K. (1987) *Ann Rev Social*, THREE FRAGMENTS FROM A SOCIOLOGIST'S NOTEBOOKS: Establishing the Phenomenon, Specified Ignorance, and Strategic Research Materials, 13:1-28,

Pegg, D. (2019) Facebook labelled 'digital gangsters' by report on fake news. The Guardian, 17 February.

Riechmann, D. (2020) Trump disbanded NSC pandemic unit that experts had praised. Associated Press, 14 March. Ringer, F (1997) Max Weber's Methodology: The Unification of

the Cultural and Social Sciences. Cambridge: Harvard

University Press Somers, J (2020) The Engineers Taking on the Ventilator

Shortage. The New Yorker 11, May Streitfield, D. (2020) White-Collar Companies Race to Be Last to Return to the Office. The New York Times 8