Original Article

Agency, Cyberspace and Social Contract

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Abstract
The social contract has been about rights and responsibilities in human societies. Facebook and its role in manufacturing and sustaining a global social contract, a new "we" is clearly one of the research areas that needs more attention. A new "we" is coming of age in the new age of connectivity and communication with a new outlook toward responsibility and rights at individual and collective levels. Facebook purports to build a new world based on connection and communication which is based on progress and prosperity. However, a fundamental factor and feature of Facebook that needs attention and more research is that people and users are becoming increasingly lonely, separated and independent from each other in this process while connecting and communicating with one another. This new social contract and "we" thus have the new features of the relationship between the human agency and his/her social structures. Cyberspace is the product of human agency and clearly creates and sustains a specific social structure. This research seeks to study the relationship between human agency, changing technical tools of communication and connection and emerging and evolving social structures and social contracts. Bandura's "social cognitive theory" (2006) rejects a conflict and dichotomy between agency and social structure. As agency helps to build new social structures after destroying the old ones these new structures create and sustain a new social contract and "we" with a new sense of responsibility, obligations, and rights.

Keywords: Facebook, human agency, interdependence, social contract, social structure.

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Introduction

Continuity and change, destruction and construction, technology and culture, and rights and responsibilities in varying degrees and capacities in human life have been inevitable and indisputable features of human experience. Facebook and cyberspace are viewed from this angle for the purpose of this study.

Social contract is fundamentally about the rights and responsibilities among the members of the society on one hand, and the state and government on the other. Users of Facebook and cyberspace conceptually constitute an agency engaged in the process of deformation of the old and formation of the new structures of identity and relationship.

How the users' agency and social contract evolve while navigating the cyberspace that adapts and adopts rapidly throughout this exchange is of essential concern. In the interim, similar to any enterprise, studies indicate that technology and cyberspace will face obstacles to surviving in a society it eclipses or destroys, thus constant transformation is taking place (Helbing, 2015). Understanding how social contract evolves within cyberspace is critical in understanding its mediating role in the flow between agency and cyberspace. How agency- the sense of control (Moore, 2016) in navigating cyberspace interacts with social contract the agreement among people to form the society in which they live will be explored in this study.

Drawing from diverse theories and interpreting data which can be informative in understanding the rapid and intense interaction among these three components, namely Human Agency, Cyberspace and Social Contract constitutes the main and major objective and contribution of the research. According to Bandura, the past millennium has been marked with less genetic change than the rapid cultural and technological evolution which has surpassed it. Distinct changes in beliefs, values, social and occupational roles, cohabiting structures, family forms, and styles of behavior in diverse spheres of life have taken place in the past decades (Bandura, 2006).

Data collected by cultural anthropologists can inform us on how the exchange between cyberspace and human agency are seamless via their study and interpretation of how artifacts or products are intertwined across cultures with the formation of the self, in a process of social self-creation (Pfaffenberger, 1992). Cultural anthropologists concur that it is culture, not nature which defines necessity, that is why they perceive society as a result of sociotechnical system building. The sociotechnical system concept posits a universal understanding of human technological activity wherein the connection of broad and diverse social and nonsocial

actors, complex social structures, nonverbal and linguistic communication systems, the organization of labor, advanced product manufacture, and the social use of various commodities are all recognized as parts of a single multifaceted complex that is adaptive and expressive at the same time (Pfaffenberger, 1992).

Eliminating barriers of collaboration through successful modification of social and nonsocial actors so that they desist dissociation and failure is a benchmark to constructing sociotechnical systems; systems which resist dissolving or failing in the face of system adversities, carry on through social contract linking the social with the technological and economical matters. The reverse salient refers to problem challenges that prevent the system from advancing or put it at risk for dissociation (Pfaffenberger, 1992). The social technical system framework provides a structure in understanding how in exchange for services, tech giants exchange users' lucrative data as part of a social contract.

According to Pfaffenberger's concept of Socio-technical Systems, there is a creative force that underlies sociogenesis in higher modes of human cultural expression, although perceived needs exist as their culture defines them. Culture is a manifestation of how humans have chosen to define and pursue existence. Something that is simply used in one way is a starting point rather than an end point having different meanings in different cultural contexts. There are various ways of solving problems and establishing systems given a set of circumstances. Alternative strategy and methods, social choice and rethinking of needs and aspirations all play a role in the advancement of sociotechnical systems. The rise of such systems encompass a range of options, all of which come with different tradeoffs. Agency can be regarded as one of the trajectories that point out alternative paths to technological modernity.

On a more basic level, the industrial revolution changed the dynamic of using tools which promoted autonomy since one owns and controls one's tools, in order not to be dependent on or exploited by others. Cultural anthropologists such as Pfaffenberger considered this as a great division when the human beings lost their authenticity, and machines ascended to mediate control and the purpose once allotted to the persons who used them. Manufactured products generated by machines were no longer our own authentic products. In a world ruled by instrumentalism and superficiality, critical self-awareness shifted to the incompletely understood other who generates the artifact (Pfaffenberger, 1992).

The technological revolution has the potential to diminish authenticity even further. Apps come with terms and conditions, if you want to use the tool, you must agree with its prerequisites. As you give up your privacy,

Apps can sell your data, target users with personalized ads based on online activity, take photographs and record audio with your device without you knowing it. Former Google employees convey that "they give you everything you want but take away what really matters" (Edwards, 2016).

From the perspective of Cultural anthropologists, tech plays a guiding role similar to rituals acts in magic or religion by which people seek to control nature. Tech processes or objects embodying its purposes embedded in ritual and mythic narrative can be enveloped in myths of unusual power. Some of its technical features represent a political aim to alter the issuing of power, prestige or wealth. Consequently, the sudden deployment of a competing system may exceed the capacity of native system participants to process their circumstances and make the needed adjustments. The local mode of deploying human and material resources, material and human, no longer works thus, influencing which people establish their viability (Pfaffenberger, 1992).

Creating Purpose and Social Contract

Mark Zuckerberg (2017) urged Harvard graduates to "not only create progress but create purpose, direction for the world," he explained, "so that you don't have to be there, the way they think will be the purpose you created." By encouraging Harvard students to create a world "where everyone has a sense of purpose," he tied a sense of purpose to one of progress, stressing a need for social contract. The notion of progress is linked to the tools playing a role as sources of meaning. In the past, Zuckerberg (2017) stated that these tools meant jobs which are currently diminishing as automation takes the place of humans or churches and communities whose memberships are declining. Bots are beginning to replace jobs such as waiters and hotel room service deliveries (Taylor, 2018) and careers in industries from real estate agents to funeral home services are being replaced by Apps.

Characterized by a sense of connectedness, cyberspace and its giants such as Facebook and Google are creating a new sense of purpose framed in terms of meeting basic human needs outlining a social contract. Interfaces are built to provide a sense of agency. The purpose created by giants such as Facebook and Google delineates selections and routes defining priorities that will maintain the sociotechnical system working together thus resisting dissociation.

The Actor Network Theory provides a framework for how users' agency and social contract evolve while navigating cyberspace. The ANT framework sees the sociotechnical world we inhabit by explaining how size and power function and are made durable instead of taking

these for granted. From the ANT perspective, everything is both an Actor and a Network. Technologies, governments, knowledge, texts, money and people are simultaneously Actor Networks, and cannot be reduced to either one since they play equally important roles. Instead of viewing non-human materials as passive, requiring human actors to become activated, M. Callon (1987) sees both users and non-human factors as actors whose activity is networking diverse elements. These actors are also a network that is able to redefine and transform its origin. What matters is the process of how and what happens during these connections. Mapping out the way in which actors "define and distribute roles, and mobilize or invent others to play these roles" takes precedence (Callon, M., 1987). This perspective provides a framework from which one can explore how agency is tied to cyberspace and social contract and how the network affects agency.

As social creatures, humans need each other to survive. Cyberspace facilitates a basic human need exemplifying a sense of connectedness (Salzman, 2018). As the tools used for creating meaning evolve, how does purpose or the sense of making meaning evolve? ANT allows us to look at the process and to where it is leading. Social contract necessitates a 'we'. The users' role is what 'we' means within the emergence of these technologies can also be conceptualized through the ANT framework. The concept of social contract proposes "the view that persons' moral and/or political obligations are dependent upon a contract or agreement among them to form the society in which they live" (Friend, n.d). What happens in the process as sociologist engineers seek to "create purpose" (Zuckerberg, 2017)? Zuckerberg (2017) suggested that non-human actors be imbedded with a purpose "you created". Tools which symbolize progress combined with purpose as sources of meaning operate as actors and networks. ANT gives the same status to tech and humans since each one plays a role in the connections, in the same way as humans input into tech what comes to their mind, tech is organized to program what comes to the person's mind through algorithms reinforcing brain circuits.

An example of creating progress and purpose simultaneously can be seen in what M. Callon discovered while studying the development of electric cars in France during the 1970s. He found that as techno-scientific problems were being addressed, French social structure would also change radically. By engaging in social and technical problems at the same time, engineers were having some bearing on a debate between competing sociological delineations of the future of French society. Both a technological and social world in which the technology had a place

was being designed simultaneously. These actors are not designing tech apart from the social world. Sociologist engineers are constantly defining ad re-defining a sociotechnical world (Callon, M., 1987).

For Latour (1981), delegation designates the reciprocal relationship between the social and the technical. ANT describes any use of technology as delegation or translation of a major effort into a minor effort. Translation can be considered as the general movement of technological development over time involving connecting things that were previously different to form homologies (Callon, M.L., 1981: 211). The process through which ideas and plans become staffed research labs, of how people and institutions are shaped to duplicate what that engineers believe, and how users can transform the technology to better meet their goals represent moments of translation. Delegation refers to a particular instance of translation through which the social and the technical co constitute each other, reading the social from the technical is likewise reading the technical from the social (Latour, 1991).

Power, Process and Agency

The ANT framework views power or the lack of it and connectivity as being intertwined. ANT poses that a variety of political, social and economic elements as well as science, engineering, and the contextual histories of these practices are part of technologies. Power is not considered to be the result of success; rather it is related to the effect of sets of varied and distinctively successful strategies to enroll others (Law, 1986). An effect brought about by other actors make up power rather than a permanent condition. The ANT perspective views power as the illusion people get when they are obeyed. After it decreases, they realize that it was made of the wills of all the others (Cressman, 2009).

Latour points to technical objects not as things but more so as processes. The relationships between the heterogeneous actors that come to stand behind tech will always be competing ideas and initiatives. These are never unchanging and are often a temporary situation seeking to unlock static domains within larger actor networks (Cressman, 2009). The Artificial Intelligence revolution propelling toward a full-scale arms race can be viewed as a current example. After being left behind, the Chinese have made great efforts to be ahead of the AI revolution with Europe and the US joining the trek.

The ANT framework becomes more relevant as human and non-human actors interact with devices becoming extensions of the self. Giants provide free services with the incentive to get your attention and sell it to advertisers and politicians. In this context, we can better

understand Zuckerberg's perspective of "building a world where you don't have to be there the way they think will be the purpose you created." Exploring and interpreting data relating to how cyberspace is impacting human agency and shaping social contract can shed light on how this rapid exchange is evolving.

Historian Y.N. Harrari (2017) studies the means through which the next thought that comes into the human beings' minds may be the result of an algorithm that knows you better than yourself. Consequently, this does away with the idea of a sovereign individual with free will. Based on your own data, legacy and death Apps can keep tweeting or posting for you based on your previous behavior. With powerful influence machines that control billions of minds that can understand your innermost feelings better than you, tech is exploring alternative forms of government. Thus, voting may become irrelevant as choices and opinions do not reflect free will (Harrari, 2017). Tech also lends itself to less subtle ways of behavior modification. Tied to a punishment and reward system, China assigns social credit scores for online behavior (Ma, 2018). Results from the 2018 presidential election in Brazil were based on elaborate disinformation campaigns through What Sapp blasts using the names and social security numbers of unknowing elderly citizens (Nalon, 2018). There are differences between human and non-human actors, what the ANT framework allows for is recognizing the active role which non-human actors play in social dynamics (Callon, M.L., 1997). Bandura poses that habitual behavior can be reduced or its direction even reversed by changing its functional value in different times and contexts (Bandura, 2012). Agency can be one of these conduits that point out alternative paths to technological modernity.

Why is agency relevant? Having agency or a sense of control is important since the activities and environments individuals chose have an effect on the course their lives take. Based on Bandura's theory, agency is intertwined with the environment and is a combination of learning and self-regulating. Agency, the actual ability to influence one's functioning during a task or situation is not static but influenced by self-efficacy, one's perceived ability and beliefs about being able to do so. Research on agency shows that perceived capability to master the constituent competencies affects agency. Perceived capability aids in navigating the journey as part of the process, not just in reaching the final destination (Bandura, 2012).

Akin to cultural anthropology and ANT, Bandura's Social cognitive theory also rejects a duality of human agency and a disembodied social structure. Social systems are the product of human activity, and social systems, which

in turn, help organize, guide, and regulate human affairs. Agency involves not only the purposeful ability to make choices and action plans. The ability to formulate suitable courses of action and to motivate and regulate their implementation is also necessary. The gap linking thought to action is characterized by this multidimensional self-directedness as it operates through self-regulatory processes (Bandura, 2006).

Agency and the Adaptive Use of Cyberspace

When the car was invented it changed people's lives. It changed the ability for transportation and interaction. Television was media 101. These still did not change the real-life problems that people faced. There is a mine of data, however its nature is to promote less and less effort, for some, an unregulated relationship with the medium poses the danger of being swept away for a lifetime of remote and distant surfing with purpose created by algorithms. How does this purpose created by algorithms affect self-efficacy? If the purpose is designed by algorithms to hold your attention how can personal and collective agency be enlisted to mediate in cyberspace to make it serve your interests?

Bandura's social cognitive theory is a theory of predicting behavior, learning and effecting personal and social change. Agency includes four functions: (1) intentionality which includes action plans, (2) forethought which includes setting goals, (3) self-reactiveness or self-regulation and (4) self-reflectiveness or self-examination resulting in a functional self-awareness (Bandura, 2006).

Bandura sees self-efficacy as playing a role in human self-development, adaption and change at both individual and collective levels. Since individuals are less likely to act on their self-efficacy beliefs when social and physical constraints are imposed, use of the internet may mediate agency. Likewise, enactive experience and modeling result in increasing positive self-efficacy (Bandura, 2012).

Bandura offers a four-facet structure of how people's beliefs in their self-efficacy are developed. Mastery experiences are of particular interest since this entails the idea that if people only experience easy triumphs, they come to expect quick results and are easily discouraged by setbacks and failures. Resilience requires experience in overcoming obstacles through perseverant effort and by learning to manage failure so that it is informative rather than demoralizing. The full human experience requires a great deal of effort. Circuits geared towards short posting, can begin to replace human relationships with machinelike ones reducing them to minimal effort (Oliver, 2012). Less amount of effort is needed to tell someone you like something about them. In real-life, this

requires a significant amount of confidence, but in FB it is only one click. How does this affect the human skills necessary when not connecting online? When you do not have to push yourself to communicate with someone and just pressing like is enough, what does that have to say about the context of that skill in something like pushing yourself to do other things? What does that do to the whole collective human ability to have those skills? Turkle (2015) notes that "the practice tends toward impatience, expecting the world to respond like an App, quickly and efficiently" and can show up in friendship as a lack of empathy. Agency is one of the ways which can bring to light alternative paths to technological modernity while at the same time being shaped by it.

The second facet of Bandura's structure is social modeling, being able to see others similar to oneself succeed through perseverant endeavors raises the viewers' beliefs in one's own capabilities (Bandura, 2012). One can only be what one can see; therefore, different types of models are key to owning real choice. Third is social persuasion; if people are persuaded to believe in themselves, they become more perseverant in the face of difficulties, increasing resolve thus having a positive effect on success. Bandura encourages people to measure success by self-improvement rather than the triumph of others (Bandura, 2012). Resolve, requires your attention which is a major target in cyberspace.

Since agency does not operate in a vacuum, self-awareness and asking some basic questions regarding the role of agency in the actor/network can expand choice: What circuits and associations within my brain are becoming stronger as I use cyberspace? Is this association stronger than another one? How is it affecting my relationships, sense of self, physical and mental health? Is the structure I am using what I want to forge my path and determine the process I want to walk on? How is it affecting my quality of life? Am I reaching my goals? Am I becoming dependent on this? How many times a day do I use?

Fourth, according to Bandura, people partly rely on their physical and emotional states in grudging self-efficacy (Bandura, 2012). Reducing anxiety and depression, building physical strength and stamina strengthen self-efficacy beliefs. Diminishing real time relationships for screen time can intensify loneliness. On the other hand, when used with authentic agency, cyberspace can be used to enhance all aspects of self-efficacy. Peoples' beliefs in their self-efficacy influence whether they think pessimistically or optimistically, in self-enabling or self-debilitating. Beliefs in coping capabilities play a pivotal role in people's self-regulation of their emotional states. This affects choice. Such beliefs affect the slate of options people consider and the choices they make at important

decisional points. By their choices of activities and environments people set the course of their life paths and what they become (Bandura, 2012). Tech's drive for attention is designed to affect choice, "the way they think will be the purpose you created" (Zuckerberg, 2017).

The environment is not a monolithic force. Bandura's agency perspective distinguishes among three types of environments - imposed, selected and constructed. How people perceive the structural characteristics of their environment– the impediments it erects and the opportunity structures it provides also influences the course of human action. The imposed environment acts on the individuals, whether they like it or not. However, they have some leeway in how they construe it and react to it. For the most part, the environment is only a potentiality that does not come into being unless selected and activated. And finally, people create environments that enable them to exercise better control of their lives. Graduations of environmental changeability require increasing levels of efficacy-based agency activity. Social cognitive theory provides actionable knowledge on how to enable people to develop desired attributes and improve their living conditions broadening the scope of agentic influence. Agency to get things done regularly in the face of impediments (Bandura, 2006).

Social contract is to link creating order with the purpose of improving and protecting the self through others. How can agency be used to regulate exchanges within cyberspace and the meaning created out of these experiences? How can you use cyberspace to serve you, and supplement your needs without being drawn into a mindless and endless game supplanting purpose or allowing algorithms to determine your thoughts?

Agency, Relationships and Virtual Connectedness

Cyberspace makes it possible to connect and transport people into each other's virtual space aiding and expanding a network of family and friends. How is this virtual connectedness changing human interactions and relationships? Is it enhancing our close relationships and will these relationships be fulfilled in cyberspace? In what way does this affect the skills needed for interpersonal relationships? Since physical presence requires more effort, will users be able to give people their full attention and go the extra mile or will complicated human behaviors be replaced with uncomplicated machinelike ones which are technologically mediated and constructed? Networks can refer to particular forms or structures as well as being seen as a verb, a process which occurs within networks wherein people, other entities and institutions interact. In either case they are inseparable aspects of the same phenomenon (Cressman, 2009).

Research data indicates that growing autonomy from the real-world amounts to a form of self-alienation as well as giving up of will power (Olivier, 2012), Turkle's studies point out that technology is great for a plethora of things, but not for recreating the human experience. She points out that your phone is always on and always on you (Turkle, 2015). The average person taps, types and swipes their smartphones 2,600 times, and checks their phone 150 times a day in front of children, during meetings, while eating and while should be sleeping (Harris, 2017). Phones act as extensions of self (Ward, 2017).

Dissociating mind and body while using cyberspace can diminish real life human bonds by releasing attachment hormones which shift attachment to the medium. With less time to invest, there is less time to invest in offline relationships in the real world. Turkle posits that although we are more connected than ever, we are also lonelier than ever because we expect more from technology and less from ourselves. Relationship shifts to the device with the promise of connection. People are together but attention is on their devices. The mere presence of a phone diminishes the amount of conversations which take place as well as the content of the conversations to less profound topics requiring less attention. This in turn shrinks peoples' ability to develop empathy (Turkle, 2015). Impulses begin to replace values.

Further, Turkle (2015) poses that this diminishes our ability for self-reflection, since some of the most important conversations happen with one's own self. She suggests that solitude allows us to learn to focus and imagine, to listen to ourselves. These skills are needed to be fully present in conversation. Turkle (2015) explains that how you get from connection to isolation is a result of not cultivating the capacity for "solitude, the ability to be separate, to gather yourself. Solitude is where you find yourself so that you can reach out to other people and form real attachments". Without the capacity for solitude, other people become sources for reducing anxiousness or of feeling alive. Instead of appreciating them for who they are the relationship mirrors the use of spare parts to support our fragile sense of self (Turkle, 2012). These effects have shown to be most detrimental to teenagers' mental health (Harris, 2017).

Loneliness arises in the unraveling of social bonds and lack of meaningful structure. In contrast, benefits in psychological well-being have been shown when cyberspace is used for communication with strong ties, for planning interaction, for increasing social support available. This in turn reduces depression, stress, loneliness and improves mood and physical health. When cyberspace is used as a substitution for interaction

with strong ties, cyberspace will have the opposite effect because it will diminish helpful relationships (Kraut, 2015).

Research on agency shows that a person's actions can be predicted by unconscious neuronal activity (Fried, 2011). Research data has also indicated that motivations did not originate with consciousness but that conscious thoughts interacted with existing motivations (Baumeister, 2010). Implying that human nature prompts behavior towards one direction, on the other hand agentic behavior entails conscious evaluation of these tendencies disallowing what is maladaptive supports Banduras emphasis on self-regulation. It also reinforces the concept of type 1 agency- an actor's ability to maintain a program of action, and Type 2 agency- an actor's ability to act independently of the constraining power of social structure (Campbell, 2009). Whether conscious or unconscious, thoughts affect behavior, and it is more accurately interplay between these two (Baumeister, 2010). Resilience research shows that repelling from attractors is not uncommon (Masten, 2001). Consciousness can therefore be a reorganization of existing knowledge, with destiny not being imposed by the situation, instead, by whether a person resists or accepts it (Al-Hoorie, 2015). Data pertaining to virtual technology use affects human behavior informed by Social Cognitive Theory indicates the importance of bringing the role of human agency into awareness as an actor/ network in developing, maintaining and regulating adaptive paths to technological progress.

Communication Predecessor to Connectivity and the Digital Divide

Blurring the lines between progress and purpose is not new. Before connectivity, communication was at the apex as a New Savior. Appalled at atrocities resulting from the atomic bomb, MIT mathematician Norbert Wiener became a pacifist and founded cybernetics in the 1940's. He "saw in communication and its regulation among living beings, machines and social processes the capability to restructure society in such a way as to curtail its self-destructing effect (Calheiros, 2014) s". In order to make cybernetics a discipline, Weiner and neurologist Warren McCulloch congregated hundreds of scientists during the *Macy conferences* in New York from 1946 to 1953. These included mathematicians, psychologists, logicians, practitioners, historians, philosophers, economists, sociologists as well as anthropologists, such as Gregory Bateson and Margaret Mead. These scientists were willing to construct a general science addressing the working of the spirit relying on cybernetics as the "New Science" able to encapsulate all forms of knowledge to promote a broad improvement of human conditions (Calheiros, 2014).

The framework subordinated life to communication. To be alive is equated to participating in a constant stream of influences from the outer world. In this context, the human being is not at the center, and instead is supplemented by information exchange with the mind existing only by and through exchanges. Thus, for some, purpose develops through random exchanges and random exchanges are purpose in and of it. Since communication is at the center, Weiner claimed that it becomes "the cement of society, who maintain open the lines of communication are the people on who the perpetuation or fall of our civilization chiefly depends" (Calheiros, 2014).

Following Weiner's death in 1964, enthusiasm for cybernetics faded away among scientists since it was unable to answer all the questions it raised. The void was filled by spirituals as well as religious aspirations. Thus, knowledge produced by sciences influenced reflections around the working of the spirit and have found some answers within the North-American counterculture as well as within new religious movements. These movements seek a world where science and spirituality can be reconciled. This counter culture perspective popularized and understood the mind as an information influx, no longer tied to the unity of thought but to exchange, interrelation, complementariness and totality (Calheiros, 2014).

The idea that Global consciousness would become alive in the internet and would be apprehended thanks to software analyzing the data circulation therein, evolving and negotiating is a California counterculture ideal much like the ones subordinating life to communication. Cyberspace is considered to generate connectedness, transcend individual thoughts for creating a world community. From this perspective, tech sciences are expected to bolster beliefs in a spiritual connectedness of humanity**, t**he millennial identity without nation, race or religion. Alternatively, research results indicate that cyberspace reinforces circuits and keeping them in a box of like-minded friends, who keep reinforcing each other from clusters of opposing polarizing views (Calheiros, 2014).

The study of the Arab spring in Egypt brings this to light. Wael Ghonim, activist and engineer of the Arab spring in Egypt who did not foresee that the movement would be handed over to the military, notes how, what started as an online revolution deteriorated to intense polarization and hate speech fed by trolls, lies and hate speech. Ghonim ascertains that the speed and brevity of social media leads users to jump to conclusions and favors broadcasting over engagement, posts over discussions, shallow comments over deep conversations. Users tend

to talk at each other instead of talking with each other, writing sharp opinions which then live on the internet. Social media magnifies the impact. Escalation of hatred and fake news quickly descends into angry mobs coopted by the elite (Ghonim, 2015).

He suggests engaging in conversations instead of broadcasting opinions and tracking how many people are changing their minds with purpose or become accountable to write more thoughtfully rather than, appealing to the people that already agree, liking because I just confirmed their biases. Ghonim (2015) also suggests using agency to develop effective crowdsourcing mechanisms and fact checking the social media ecosystem to create new media platforms for conversations about divisive issues that matter.

The use of cyberspace can social engineer all aspects of life. Some activities also offer users more opportunities and resources in moving forward in their career, work, education and societal position than others that are mainly consumptive or entertaining. Digital divide researchers found that adult females are more likely to use the Internet's communication tools, whereas adult males are more likely to use the internet for information, entertainment, commerce and online gaming (van Deursen, 2014). Persons of higher socio-economic status employ the Internet more productively and to greater economic gain than that of their less privileged, but connected peers. Higher levels of education are associated with the use of the Internet in more beneficial ways, for health-related information, financial transactions and research. People with a lower level of education make less use of information and use the internet for casual browsing, playing games or gambling online which are more time-consuming activities using the internet for more hours a day (van Deursen, 2014). Hargittai (2013) found higher socio economic status correlates with using the internet for capital enhancing activities such as seeking out news, information about health, finance, and government services and concluded that those in already more privileged positions are reaping the benefits of their time spent online more than users from lower socio-economic backgrounds.

The internet is just the advancement in communication technology with its usage determined by education, however, including more functions than traditional media have. It not only reflects social inequalities present in the offline world but creates an even stronger division consequently being a potential accelerator of social inequality (Hargittai, 2013). Harrari (2017) warns creating a useless class. In this context, the call for universal income from Mark Zuckerberg (2017) becomes clearer. Zuckerberg also points out that "success comes from

the freedom to fail," when, "it easy for everyone to take lots of shots The freedom to fail is a privilege. Much like communication, cyberspace connectivity producers have more social capital in creating purpose, direction and access to innovation. Agency can influence how people integrate cyberspace into their lives.

In December 2017, Facebook launched and marketed its Messenger Kids as the best experience it can be for families, with no ads, strict parental controls, and safety features. Doctors, educators, and child health experts subsequently petitioned Zuckerman to remove the App for children as young as 5-year-olds 5-year-olds. Dr. Sherry Turkle, MIT Professor of Social Studies of Science and Technology, described this as powerful enticement for children to move their friendships online which is "the last thing the youngest among children need when the technology landscape already is stunting children's emotional growth" (Gibbs, 2018). All major tech executives in Silicon Valley are limiting screen time, among them Tim Cooks Apple CEO and Bill Gates. The consensus among long time tech leaders is that risks of screen time for addiction and stunting development are high. Previous Ex executive assistant at Facebook Athena Chiara, now at the Chan Zuckerberg Initiative is convinced that "the devil lives in our phones and is wreaking havoc on our children." Chief executive at a robotics and drone company Chris Anderson deems that on a scale between candy and crack cocaine screen time is closer to crack cocaine going straight to the pleasure centers of the developing brain. A review of Silicon Valley engineers and tech specialists involved in producing the technology shows a consensus on views limiting their children's use of screen time confirming research by digital divide scholars positively relating education and economic to self-regulation.

Cyberspace was created by human agency. Having the ability to reflect upon oneself and the adequacy of one's thoughts and actions is the most distinct human core property of agency. People who develop their skills and aptitudes, self- regulatory skills, and empowering beliefs in their efficacy are able to generate a wider possibility of options. This expands their freedom of action, generating success in realizing desired futures, more so than those with less developed agentic resources. Since human agency does not come with built in values the challenge exists on how to use these capabilities in ways that shape a better and sustainable future (Bandura, 2006).

Social Shaping of Technology

Artifacts, the things humans have produced, relate to most of the ways human beings interact with each other. Langdon Winner

undermines the view that technologies are neutral, what matters is the way in which societies choose to use them. Tech can be designed to open certain social options and close others. In certain social circumstances, some technologies are well-suited to some social relations than with others. Material resources including artifacts and technologies, such as walls, prisons, weapons, writing, agriculture constitute society and have a share in what makes large scale society possible (MacKenzie, 1999).

According to MacKenzie (1999), a passive attitude towards technological change focuses our attention on how to adapt to tech change, rather than on how to shape it. From science, engineers seek to solve their problems. This emphasizes the process and not to look for answer in one place, but to look at the problems themselves. Invention is not a flash of inspiration but rather the fine tuning and meticulous modification of existing technology. It results from perceiving ways in which existing devices can be improved, and in expanding the scope of techniques successful in one area into new areas. Users help improve tech. Zuckerberg grasps this when he notes that, "cyberspace is the small contributions of many" (Zuckerberg, 2017). Individually, small changes may eventually add up to considerable changes in design, productivity, and effectiveness. Learning by doing, or feedback from experience of use to both the design and way of operating things, both have crucial practical outcomes (MacKenzie, 1999).

As discussed above, learning by doing and by using as well as frequent focus on removing weak points reverse salient from technologies tend to improve tech, it follows that the actual process of adoption be likely to improve the performance of those technologies that are adopted. Early adoptions can lead to permanent superiority over competitors because success tends to breed success and rejection can turn into ignorance, resulting in permanent inferiority. Which technology ultimately succeeds is not determined by intrinsic worth alone but by their histories of adoption (Pfaffenberger, 1992).

Resources can be used in many ways; the same paradigm is often developed differently under different circumstances. According to Pfaffenberger, engineers define the reverse salient as a set of critical problems that will correct the situation when solved making sense only if a tech system is seen as oriented to a goal. Economics - reducing costs and increasing revenues is usually a major part of system goals. Inefficient means uneconomical. Reverse salient is an inefficient or uneconomical component (Pfaffenberger, 1992). Surveillance, or knowing the market is expensive, however, massive computerized

information makes it easier. The more technology can get into the mind, the more detail it can provide.

Tech plans out our time and attention for its own profit. Drug dealers and tech both refers to customers as users (Zomorodi, 2017). "When we wake up in the morning and turn our phone over to see a list of notifications it reframes our experience of waking up in the morning," says Tim Harris former Google engineer, "if you control the menu you control the choices" (Harris, 2017). He further explains how apps are coded to work like slot machines to retain users' attention by linking user actions to a variable reward showing up as notifications and the like. Addictiveness is maximized when the rate of reward is most variable like pulling a lever in casinos and getting either an exciting reward or nothing. Harris (2017) claims that tech's race for attention is a race to the bottom of the brainstem, going lower into emotion, impulse outrage and what he calls the "lizard brain". Netflix CEO recently explained how real the race is, "our biggest competitors are Facebook, YouTube and sleep" (Stewart, 2016). The average person among its 2.2 billion monthly active users spends 50 minutes a day on Facebook.

Technological decisions are also economic decisions, affecting the way a society is organized. And thus, the nature of technological change within it. A wide-ranging commitment of resources that could produce rapid advancements in technology at Facebook and others such as Elon Musk's Neuralink is in BCIs (Brain Machine Interfaces). These are electronic microchips that are embedded into the brain connecting it to computers. Regina Dugan, former director of the Defense Advanced Research Projects Agency (DARPA) was hired by Zuckerberg to run Facebook's experimental technologies division, known as Building 8. The division is an actor-network of 60 full-time scientists and engineers and hundreds of millions in funding (Stibel, 2017). Musk seeks to add a third layer to the brain that will allow for super human cognition and eliminate the lag between users and smartphones or smart watches (Kaufmann, 2018).

Former Facebook and Google executive Mary Lou Jepeson announced that her New Company Openwater is working on ultrasound and infrared light technology that will allow portable low cost and better than MRI machine resolution technology which could potentially be worn by patients. In addition to detecting blood flow tumors and disease and replacing some forms of surgery, it would also be able to tell doctors if brain diseases are being treated effectively with drugs. Because of its higher resolution, it can potentially read user's minds allowing them to transmit their thoughts and feelings electronically (Wolverton, 2018).

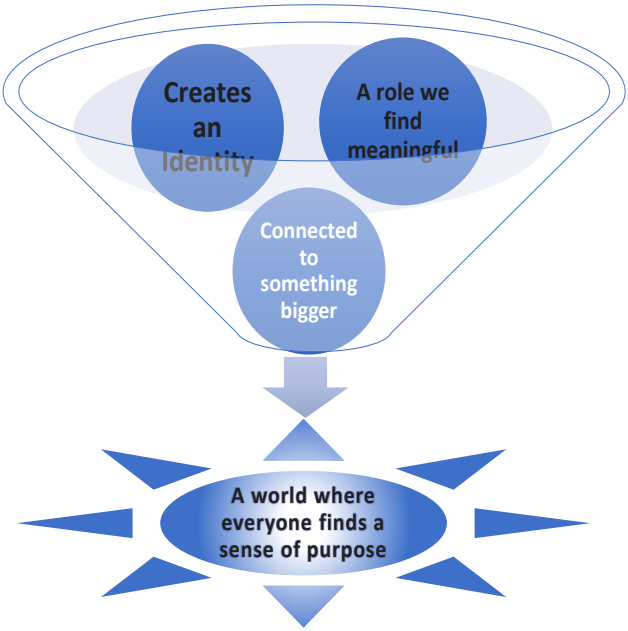

Figure 1. The relationship between identity, role and a sense pf purpose in the world

Conclusion

Not enough is known about what happens during the multilayered and high speed flow between billions of users and the technology they use in cyberspace. A review of pertinent data regarding this flow within the framework of diverse theories furthers the understanding in interpreting the data and contributes to the ongoing research in the field. As purpose, or the sense of meaning evolve alongside the tools used to create meaning designed by sociologist engineers seeking to create purpose, the ongoing and rapid exchange modifies users' behavior by reinforcing some pathways in the brain and diminishes others. Between automaticity and algorithms predicting behavior to the concept of agency, the process of navigating cyberspace affects people in various ways, either enhancing opportunities or lessening them by distracting users, therefore acting on the organization of society.

The seamless flow between cyberspace and agency mediated by a rapidly evolving social contract is being driven by diverse actors/networks. Studying how and what happens in the process of these connections, the way in which roles are distributed, and how users are mobilized provides a framework from which to explore how agency is tied to cyberspace and social contract and how the network affects agency.

An overview of pertinent theories and data indicates that despite many trajectories and alternative paths to the use of cyberspace, tech giants' usually factor in the economics– increasing profits and reducing costs as a main goal. Agency is one of the resources that users can activate and employ to attain their own goals as they navigate the journey through cyberspace.

The numbers show that cyberspace giants are meeting their purpose which feeds off from your attention. What is, do you have, and are you meeting your purpose? Much like the car and mass media communication, cyberspace can aid or deter fulfilling human needs and solving real life problems, depending on who at–the dashboard and wheel of our voyage is. The realm of the mind can cause delusions, the impression, and perception of doing something. Ordering of the world to think that they should derive meaning from within a certain framework or connection or medium creates a feeling and pathway in the mind that the users are part of something bigger. Is there evidence that this feeling is accurate in the non-virtual world? Some may interpret the sense of the higher order need for connection as being met by searching and/or connecting through the internet, and may regard this as core accomplishment of something major. What do you have to show for this and how is it working for you? Where is it going and how can you improve it? Who is controlling the menu? Self-efficacy can help you improve your quality of life at different stages of development and increase a sense of agency.

While this study does not offer a conclusive answer to the question of how agency is activated in cyberspace, it does focus on a combination of theories and data that produce further understanding of the unseen and rapidly evolving process between tech giants and users. The research raises important questions about the possibilities and role of Type 1 and Type 2 agency in navigating and shaping cyberspace. As a result of conducting this research, I propose that policymakers require education systems to provide learning on the risks as well as opportunities involved in the medium for children and teenagers with developing brains as well as skills such as creativity, critical and systems thinking and adaptive life-long learning that can aid in enhancing agency and self-efficacy. Further research is needed concerning sustainable sources of meaning which can replace the void caused by automation as well as the effects of cyber activity on the social organization of the offline world and life of users order to clarify the evolving and diverse destinations where technological evolution is headed for. Thus, the research can contribute to that evolution.

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