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Design Intervention to Augment Non-Traditional Security

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Article

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Abstract

The Covid-19 pandemic poses an unprecedented threat to human security, which recognizes health as an issue of national and international security in an interconnected world. While the pandemic may open the process of serious global engagement to deal with non-traditional security threats and find appropriate solutions, but the solutions will become effective only when they have incorporated new approaches to problem solving alongside the traditional ones. As such, combating this crisis not only requires path-breaking scientific and technological research, but also simultaneous design innovations and interventions. Solving complex and interconnected problems require a different and multidisciplinary approach. Design thinking which encourages out of the box ideations uses multidisciplinary approach to problem solving. It may be used to solve problems of non-traditional security as well.

Nobel Laureate Herbert A. Simon[1] says: "Everyone designs who devises courses of action aimed at changing existing situations into preferred ones." Corona pandemic has put the world into a situation for which it was not at all prepared. While the pandemic continues, world needs collective action to move towards a preferred situation. No doubt, the preferred situation at the moment will be to restore the status quo ante and then work out a collective strategy to save humanity from any such exigencies in future by augmenting non-traditional security and developing new strategies. Intervention of design at the tactical and strategic levels, at the level of systems, products and communication may help develop new strategies and insights. At the time of writing this paper the World Health Organization (WHO)[2] data confirmed 9,129,146 cases of COVID-19 infection and 473,797 deaths cases

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of death spread over 215 countries. In a globalized networked world augmenting non-traditional security has to be a common agenda. Since such global problems require collective action, individual strength and weakness of nations must be factored in. Thus, while launching the report on socio-economic impacts of COVID-19, United Nations (UN)[3] Secretary General Antonio Guterres drew attention to the reality of the interconnected world. He said, "Let us remember that we are only as strong as the weakest health system in our interconnected world."

From the perspective of design COVID-19 may be considered a wicked problem. In simple terms it means a problem with lots of complexity and interconnectedness. The term "wicked problem" first used by Philosopher Karl Popper was later adopted by design theorist Horst W J Rittel. He used it to explain the concept of *determinacy* and *indeterminacy* in design thinking wherein the earlier refers to problems with a definite condition and hence need a calculated solution while the latter suggests problem with multiple conditions and multipronged solutions. Rittel's idea of wicked problems has been explained by Churchman[4] (1967) as a "class of social system problems which are ill formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramification in the whole system are thoroughly confusing." The complexity of global health security qualifies to be called a typical wicked problem, hence, a design problem too. Consequently, the solution may also be sought with a freshness of approach and methods. Buchanan[5] (1992) explains design problems as "indeterminate" and "wicked" because design has no special subject matter of its own apart from what a designer conceives it to be. The subject matter of design is potentially universal in scope, because design thinking may be applied to any area of human experience." Design thinking can thus help in finding creative solutions and strategies for health security and other issues of non-traditional security.

Pandemic as a Wicked Problem

Looking at wicked problem from the perspective of design thinking even as the problem remains the same, the process of problem solving may involve different approaches and strategies. The problem of dealing with the pandemic of such scale requires scalable and adaptable solution as one solution may not be fitting all. Thus, different nations have adopted different methods and exercised different options. India for instance adopted social distancing and long drawn lockdown keeping in mind its enormous population and inadequate health infrastructure. Prime Minister Modi's first appeal for a *janta curfew* (self-imposed curfew) on March 22, 2020 had an astounding nation-wide support. It was a strategy to prepare the nation to accept government's decision to enforce next rounds

of nation-wide lockdown without much resistance. Consequently, by following social distancing and lockdown India has been reasonably successful in containing the infection and morbidity so far.

As per WHO [6] data from January 30 to May 10, 2020 there were close to around 500,000 active cases of Covid-19, and nearly fourteen thousand deaths (as of June 21) in India. However, the extended lockdown and suspension of all economic activities have also hit the Indian economy badly. Economic analysts have analyzed the better, worse and worst case scenario. According to the KPMG [7] report "Potential Impact of COVID-19 on the Indian Economy" in the better case scenario India's economic growth for 2020-21 may be in the range of 5.3 to 5.7 per cent. In the worse-case scenario it will be in the range of 4 to 4.5 per cent whereas in the worst case scenario the growth may fall below 3 per cent. The first strategy of Modi government was to save life. So its slogan emphasized "*jaan hai to jahan hai*" (if there is life, there is world). However, later on to strike a balance between life and livelihood Modi government changed the strategic and rephrased the slogan as "*jaan bhi, jahan bhi*" (life as well as world). It indicates its intention to nudge and reboot the economy in a cautious and phased manner.

As against India's steadfast response to COVID-19 the response of the United States was a mix of extreme caution and optimism divided on the lines whether priority should be given to life or livelihood. President Trump's personal preference to underplay the pandemic in the initial days of the outbreak and insistence on continuing economic activities had the support of his Republican constituency while the Democrats believed the threat was real and profound. Trump's [8] open support to anti-lockdown protests in the country and his series of tweets viz. "LIBERATE VIRGINIA, and save your great 2nd Amendment. It is under siege!"; "LIBERATE MICHIGAN!" and "LIBERATE MINNESOTA!" came under widespread criticism. As per Al Jazeera [9] report, Washington Governor Jay Inslee retorted by tweeting: "He is putting millions of people in danger of contracting COVID-19. His unhinged rantings and calls for people to 'liberate' states could also lead to violence." He also accused President Trump of spreading lies even as he himself admitted that the "virus is real, it is deadly and there's a long way to go before restrictions can be lifted."

Bipartisan views are reflection of a lively democracy, but on issues of non-traditional security such as pandemic or other health emergency they may lead to confusion in decision making which was evident in the US response. Each state in the US adopted different methods to deal with this problem. The survey conducted by Green et al. [10] (2020) for Pew Research Centre during mid-March 2020 revealed that nearly eight out of ten Democrats and Democratic leaners (78 per cent) saw the outbreak as a major threat to health of Americans,

whereas a much smaller number of Republicans and GOP leaners (52 per cent) believed that way. As compared to the Republicans more Democrats believed that the pandemic is a major threat to the U.S. economy and their personal finances. Among the Democrats 74 per cent thought the outbreak will either lead to a recession or depression. Compared to them a smaller majority of Republicans (56 per cent) agreed with the view. The differences of opinion and methods between the federal and state governments and among the rival Republican and Democrats regarding imposing nationwide lockdown and lack of a common unified response may also be one of the reasons behind the highest casualty rate in America. The total casualty the US has suffered due to COVID-19 so far is in excess of 2 Million and counting while the number of those infected is over 1 million and growing-- which is the highest so far anywhere in the world. On the economic front, the impact has been disastrous. Collinson [11] (April 16, 2020) reported in CNN that: "The impact of social distancing measures that have closed down the economy was starkly revealed on Thursday with new data showing that 5.2 million Americans filed for unemployment benefits last week, taking the total of first-time claims since mid-March to 22 million." Notwithstanding the bipartisan threat perception and lack of common unified response, Gostin and Wetter [12] (March 31, 2020) believe even if the President wanted to take strong action it would have been hampered by America's federalist system wherein the constitutional authority to order any major public-health interventions lies primarily with the U.S. states. In India, healthcare falls under concurrent list and in case of any crisis of national scale Centre's decision prevails.

The difference of approach in dealing with this wicked problem in world's oldest and biggest democracies vindicates what Rittel-Webber [13] (1973) believe "there is no simple or straight forward method of solution." There has to be variance. Rittel [14] (1972) enumerates ten properties of wicked problems. Two of them explain that: "Wicked problems have no definitive formulation, but every formulation of a wicked problem corresponds to the formulation of a solution. ....Solutions to wicked problems cannot be true or false, only good or bad." The outcome defines whether the method applied was good or bad. Problem definition and problem solution are the two stages of design intervention. Buchanan [15] (1992) believes that while the earlier is an analytical process, the latter is a "synthetic sequence in which various requirements are combined and balanced against each other yielding a final plan". The impact of the response of India and the US towards finding solution to this wicked problem can only be judged by evaluating the intended outcome by both nations not as right or wrong but as good or bad.

Revisiting Non-Traditional Security

COVID-19 pandemic has given two important lessons. One, the networked globalized world order has the propensity to convert localized problems into global ones. Two, the overarching militaristic approach to security has significantly diverted nations' attention from other non-violent vulnerabilities which may create multidimensional security threats, like the one created by COVID-19. Today it's the pandemic creating global emergency, tomorrow it could be bioterrorism, global migration, climate change-- we have no idea. However, it's clear that due to intricate global integration of nations non-traditional security concerns are becoming crucial. The problem may emanate anywhere but it may spread everywhere. That's the learning from Wuhan. However, the solution may not be to rush for de-globalization as it may further increase the socio-economic, environmental and other complications and unleash yet another cycle of global sufferings. Sen [16] (2000) warns: "The opposite of globalization is persistent separatism and relentless autarky." Even one of the most ardent critics of globalization Joseph Stiglitz also believes that it's not globalization but the methods of globalization which are creating problem. Globalization can still work. However, he also leaves a note of caution about the tradeoff between globalization and security concerns. Stiglitz [17] (2006) writes in *Making Globalization Work*: "The debate about security and globalization highlights—even for those who have been among globalization's cheerleaders—that values other than economic well-being are at stake. But these other values have been given short shrift in the way that globalization has been proceeding." COVID-19 has given the world a valid reason to revisit non-traditional security threats and reevaluate the preparedness to handle such crisis under globalization.

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The Concept of Security

Security is a response to threat both real and perceived, present and probable. Interestingly it's an interdisciplinary concept which permits scholars to study it within their own disciplinary framework; economics, political science, public administration, law, life sciences, design to name a few. In the classical Indian treaties *Arthaśāstra* [18] (Chapter V, Book IX) Kautilya describes security from the perspective of threat to the state and its political establishment. Kautilya's typology enumerates four types of dangers, which are: that which is of external origin and of internal abetment; that which is of internal origin and of external abetment; that which is of external origin and of external abetment; and that

which is of internal origin and of internal abetment. Among the four, he advises to get rid of the internal dangers first because the internal danger is like the fear from a lurking snake which is far more serious than the external threats. Most of the non-traditional security by nature are threat to internal security.

However, with the emergence of new thoughts and theoretical formulations the concept of security now presents multiple perspectives to examine individual and social vulnerabilities. While exploring a threshold based definition of human security Owen [19] (2004) examines various concepts of human security by twenty one scholars. He finds that: "the broad conceptualization by Leaning, Alkire, Thakur, Axworthy, Bajpai, Hampson and Winslow & Eriksen-- all suggest that human security means something more than violent threats."

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The term human security is interchangeably used with non-traditional security and also prominently figures in the discourse on human development. While the scholars referred above rule out violent conflicts alone being the source of security threat, their arguments give a substantive significance to a whole range of other issues, viz., poverty, disease and environmental disaster which prominently figure in the non-traditional security discourse. It becomes clear as Owen [20](2004) examines the views of Acharya who believes human security is a "rational response to the 'globalizing' of international policy. Governments at various scale must take on a wider mandate than simply economic growth, political stability, and invasion by foreign armies. Human security he suggests is the underlying rationale for this mandate."

In the post-Cold War era, the growing realization to look at security issues beyond military aggression and war necessitated the development of a broader and more comprehensive approach towards security. It meant to ensure safeguard against all possible threats or factors that may be unsafe for human survival. In the year 1994 United Nations Development Programme (UNDP) initiated this discussion in the broader framework of human development to ensure a more egalitarian global system. The paradigm of human development created by Mahbub ul Haq and strongly endorsed by Amartya Sen presented the first conceptual framework of human security for policy and action. Taylor [21] (2004) quotes Mahbub ul Haq who said: "Human security is not [only] a concern with weapons. It is a concern with human dignity. In the last analysis, it is a child who did not die, a disease that did not spread, an ethnic tension that did not explode, a dissident who was not silenced, a human spirit that was not crushed." In his address at the International Symposium on Human Security at Tokyo, Sen [22] (2000) endorsed the views of the Japanese Prime Minister Obuchi

Keizo who said: "Human security is the key idea in comprehensively seizing all the menaces that threaten the survival, daily life and dignity of human being and to strengthen their efforts to conferred these threats." The 1994 Human Development Report (HDR) identified two major components of human security which were: 'freedom from fear' and 'freedom from want'. In more specific terms it enumerated economic, health, food, environmental, personal, political and community issues as aspects of human security. Gómez and Gasper [23] (2013) explain human security as "a flexible approach and can be tailored to different contexts and topics, according to the specific context."

The Human Development Report 1994 was a pioneer in the sense that it managed to shift the focus of security from external to internal factors. Jolly & Deepayan,[24] (2006) describe it as a shift "from the protection of the state and its borders by military means to the protection of individuals from a wider range of threats to their well-being and security, and by a wider range of measures and policies, from the local and community levels to the national and international arenas." Later the UNDP [25]2002 report drew attention towards the growing non-traditional transnational threats from HIV/AIDS to climate change aggravated by a global economic system which is responsible for creating crisis in many parts of the world. The report identified seven aspects of human security namely: economy, food, health, environment, personal security, community security, and political security. In the journey from Millennium Development Goal (MDG) (2000-2015) to Sustainable Development Goal (2015-2030) the global priority towards non-traditional security got further strengthened. Most among the seventeen enumerated goals, viz., poverty, hunger, health, climate action, sustainable city-- directly concern both non-traditional security and design. The conflict and disaster prone zones of the world time and again get affected by natural and man-made disasters and pose serious threat to human security. The methods to deal with them require a human-centric approach and

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empathy (same as in design) to ensure human development, welfare and social justice, which the spirit of sustainable development also represents. The spirit of sustainable development is also incorporated in the agenda and action points of international associations for regional cooperation. The Association of South East Nations (ASEAN) for instance try to ensure non-traditional security by cooperating on "global environmental issues, notably the ones relating to the ozone layer and toxic and hazardous wastes. They also cooperate in managing and preventing transboundary environmental pollution including trans-boundary haze problems." (Sembiring and Wei, 2015) [26]. Similarly, the

ASEAN Socio-Cultural Committee (ASCC) tries to investigate health issues under Pandemic Preparedness and Response as part of disaster management.[27]

Security and SDG Interface

Parameter	Traditional Security (TS)	Non-Traditional Security (NTS)	Sustainable Development Goals (SDG)	SDG-NTS Interface
Idea	National Security Defending Border, Assertion of national interest with hard power, Diplomacy	Securing people, Communities, Human Society, Fostering cooperation for human survival	Underscore the need of sustainable human development	To bring the idea of development and security on the same page
Objective	Defending essential values and interest of the state, Political Sovereignty	Ensuring human dignity, Improving quality of life	Ensure better health, Climate change, Eradicate hunger, Water and sanitation among other	To ensure harmonious relation between people, planet and life. To design systems for safeguarding human dignity, peace and prosperity
Actors	State, Defence establishment, International coalitions	State, People, Organizations, Global agencies	Global agencies, Governments, People, NGOs, Philanthropic organizations	Individuals, Communities, Governments, Global agencies
Methods	Use of physical/cyber force, diplomatic engagements, Design innovation at product, communication and systems level	Policies, Law, Legislation, Cooperation, Design innovation at product, communication and systems level	Global cooperation, People's participation, Policy advocacy and intervention, Design innovations, Scientific research	Providing creative solutions to achieve development goals and address security concerns by collaboration and cocreation
Effect	Prevention of loss of Life and Property, Collateral Damage, Instability	Safety, Social, Cultural, Environmental Sustainability	Better quality of life through sustainable designs, safer and prosperous planet for all	Development and Security to replace conflict and insecurities. Increasing human resilience to withstand emerging challenges

Health as Non-Traditional Security

"Countries with well-functioning and inclusive health systems are more likely to catch an outbreak early when the chances of rapid containment are best." Thus wrote WHO [28] (2017) in its report titled *Health Security: Is the World Better Prepared?* However, the outbreak of COVID-19 proved just otherwise. The most advanced nations with well-established healthcare infrastructure are churning highest number of corona infected persons and morbidity. Countries like the US, Italy, France, UK, Germany with highly advanced and robust healthcare infrastructure appear as clueless and ill-prepared to cope with the disease and control morbidity as nations with underdeveloped and fragile health

infrastructure. From Yellow Fever, Zika, Ebola, Sars and now COVID-19; the pattern of their growing impact and outbreak reveal that in the globalized world order we need more robust global health administration and infrastructure. To contain the disease and restrict its outbreak from becoming global, early reporting is crucial. With regard to COVID-19 one of the major contentions of America is that both WHO and China did not share the information about the virus early on.

CNBC[29] (March 19, 2020) quotes President Trump: "It would have been much better if we had known about this a number of months earlier." It further writes that the President argued "American officials would have been able to act faster if China's government had fully shared information about the outbreak, which began around the city of Wuhan." China has refuted America's contention at several occasions. It has its own counter-conspiracy theory to narrate which blames the US for this outbreak. Gitter, et al.[30] write in *Foreign Affairs*: "By March 12, Beijing launched its most bombastic tactic yet: blaming the United States directly for the coronavirus outbreak. To be sure, conspiracies of U.S. plans to undermine China are a regular feature of the Chinese internet. But this time the MFA (Ministry of Foreign Affairs) itself was the source. Zhao (Foreign Ministry spokesperson Zhao Lijian) unleashed a tweet storm accusing the U.S. Army of bringing the virus to Wuhan in October." However, besides polemic and counter-polemic, health security eventually lands up at the doorsteps of the nations and they will have to find their own way out. Whether or not WHO failed to send early warning about the pandemic is also a matter of investigation. But as a global institution dealing with health security WHO[31] itself believes that: "prompt and transparent reporting is compromised when the certainty of economic damage outweighs the prospect of financial and technical support."

Many contemporary scholars who among other include Barry Buzan and Ole Waever believe security is a socially constructed notion. The idea of describing health issues, particularly those associated with infectious diseases, as a security threat and thus analysing it from the 'securitization theory' framework is meant to highlight the danger to human security. The theory gives the framework to analyse the nature and propensity of the threat to harm human existence. Anthony[32] (2006) observes: "Some of these securitization studies, particularly in East Asia, argue new perspective in treating these issues as no longer just medical issues but as security threats to the region requiring the immediate attention of policy makers, defence and security officials. As a result, studies on the broad issue of public health and security are no longer confined to the scientific and medical community." Hence, healthcare and now health security is becoming a subject of multidisciplinary study as the risks, stakeholders and intervention required are multiple.

Therefore, from the perspective of securitization, the healthcare sector as a whole also needs creative options to improve the overall health security environment and service delivery. Design thinking may provide a new framework not only for problem analysis but also for offering multiple creative solutions. They may help to deal with the health security issues which eventually require interventions at the level of systems, products and communication. In their study of design thinking in healthcare, Altman, et. al. (2018) [33] observed that: "There is much enthusiasm for the use of Design Thinking in health care, from intervention development to large-scale organizational and systems changes. However, health care settings present different challenges than do other domains, so it is important to consider these challenges in assessing whether Design Thinking provides added benefit over traditional approaches."

As a matter of fact, design intervention is not meant to replace the existing methods of providing healthcare security but work alongside to improve end user experience, efficiency and other associated aspects. A perceptible shift is also being observed from the 'securitization' paradigm associated with pandemic to ensuring better regional health governance of late. The 2016-20 health agenda of ASEAN emphasises good health and wellbeing, which finds place in Sustainable Development Goals (SDG) as well. The vision of ASEAN Post 2015 Health Development Agenda [34] is to create a healthy, caring and sustainable ASEAN community. To achieve its objectives it seeks to promote a healthy and caring ASEAN community. The emphasis is on achieving maximal health with healthy lifestyle. Access to safe food, healthy diet and healthy environment are considered important for health security. ASEAN seeks cooperation on the following four agenda: (a) promoting healthy lifestyle, including prevention and control of NCDs, (b) responding to all hazards and emerging threats, (c) strengthening health system and access to health care and (d) ensuring food safety which includes access to safe food, safe drinking water and sanitation. This endeavour adds another perspective to analyse and find solution to the concerns of health security in a more decentralised manner.

Health security has both local and global interfaces. The possibility of the outbreak of a disease at a global level is far more probable today than ever before due to the world becoming one networked village, though not in spirit, but in transactions. Thus, health security needs to find ways to connect organizations of health governance and enhance opportunities to build intersections. The effort may lead to creation of multiple responses and different frames for problem solving by allowing diverse perspectives (Bennett, et al. 2017) [35]. Due to the impact of 'securitization' theory (Ole Wæver: 1995 [36] and the exponents of the Copenhagen School: McDonald: 2008; [37] Haacke and Williams: 2008; [38] Ciută: 2009 [39] et. al.) the very concept of security has also become more flexible to accommodate new

meanings and framework through which other concerns of security may also be evaluated. It opened the possibility to evaluate health from the security perspective and allowed a large number of discourse to begin wherein health was problematized as a security concern having potential to threaten existence of the local and global community. Oftentimes, health security creates chaos, exceptional and unprecedented existential threat as COVID-19 seem to have created. Making decision under chaos is difficult. However, from a multidisciplinary perspective there seems to be a possibility. For design, chaos brings the opportunity to create order. Allinson [40] refers to design theorist Victor Papnek who believes design is a conscious effort to impose meaningful order. In order to complete design's premise it should be read together with Buckminster Fuller's view who believed the opposite of design is chaos. So in other words, design is a process to bring order out of chaos. The creativity involved in design thinking and its human-centred approach to problem solving offers new insights to deal with the complex problem of health security too.

Design Thinking

From the perspective of health security COVID-19 has posed an existential problem to humanity. It has created constraint that is pushing the whole world to transform (Peck, 2020).[41] Its impact on human life and social environment is going to be huge. People are being advised to accept the ensuing changes in human behaviour, environment, technology etc., as the 'new normal'. It's a problem never experienced before. From design's point of view the source of this problem and its impact are both wicked in nature as they are complex, ill-defined and have multiple linkages. So they need solutions which result from out of the box thinking. Design thinking is meant to deal with such problems. To put it simply, design thinking is a methodical process to tackle complex problems.

'The Sciences of the Artificial', a seminal paper published by Simon [42](1969) left profound impact on design thinking and subsequent design theories. His seven stage model comprising of components and activities cast influence on all the major subsequent development of design thinking. As against scientists who describe how things are, Simon believes that designers are "concerned with how things *ought* to be . . . in order to *attain goals* and to *function*" (Simon, 1969/1996, pp. 4-5). Later, in 1990s the design consulting firm IDEO popularized the concept of design thinking. It proposed a three phases thinking model which included **Inspiration, Ideation**, and **Implementation**. Kelly brothers, who served as important members of IDEO management, considered creativity a natural part of human thinking and behaviour (Kelly & Kelly, 2013: pp 9) [43]. A decade later with the introduction of design as a course at university level, Stanford started teaching design thinking. Design thinking enables design to engage with the problems at multiple levels by going through a

systematic process of divergence and convergence to gather all possible information and then narrow down on the key issues. In the year 2005 British Design Council developed the 'Double Diamond' model which divided design thinking into four stages namely: **Discover, Define, Develop** and **Deliver.** Ball [44] (2019) explains the 4 Ds as various stages of design thinking wherein to 'Discover' means to begin the process by questioning the challenge (problem) leading to identification of user's need. 'Defining' is the phase which makes sense of the findings, knowing how the need of the user and the problem align. To 'Develop' is the stage where potential solutions are fostered, tested and refined. And finally, 'Deliver' stands for the phase where the best solution is opted for application.

The Stanford model of design thinking as against the UK Design Council Model proposes five steps which begin with **Empathy** and then moves on to **Define**, **Ideate**, **Prototype** and **Test**. Beginning the process of design thinking with 'Empathy' reinforces the need to adopt a human-centric approach for problem solving. The stage of defining involves collating the information gathered at the first stage and analyze them from a human/user-centric perspective and then define the core of the problem. This is the stage of problematizing the findings or the concerns. 'Ideation' is the stage to stimulate free 'out of the box thinking' using various processes such as brainstorming, brain write, identifying worst possible idea among other. Prototyping is the stage of converting ideas into solution. It's the experimental phase which also allows the best idea/solution to be tested. This leads to the final stage which is 'Testing'. As an iterative process 'Testing' allows the solution to be revisited and possible changes and refinements to be made.

Brown, [45] describes design thinking as: "a human-centred approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success." In order to create a theoretical framework Brown attempts to fuse interrelated concepts of people's need on the one hand and possibility of addressing them with innovative methods on the other. In his conceptual schema innovation holds the key to design thinking but it needs to be driven by a human centred approach. So in other words, design thinking offers an alternative approach to think about human problems and their innovative solutions. Curedale [46] (2013) explains design thinking as the integration of **People, Process** and **Place** commonly referred as 3Ps wherein 'People' stands for human beings, 'Process' for problem solving process and 'Place' as working spaces. Design thinking doesn't prescribe a 'one fits all' kind of template for problem solving, but rather discrete responses to each problem by going through a series of processes leading to a rational conclusion.

Thinking as a cognitive process manifests as autistic and rational type (McKellar, 1957) [47] wherein the earlier unfolds immense human capacity to imagination while the latter leads to thinking with a purpose. Design thinking subsumes both imagination (not into abstraction) and solution into its cognitive process. Design thinking is not thinking about design, but thinking through design. The reason is design itself is not a product, it's not something that can be held in hand, it's the culmination of a creative process and approach which eventually solves a problem. Design, as per Ambrose & Harris [48] (2010) is "an iterative process and design thinking is present in each stage of the journey from client brief to finished work. Different solutions can be produced for any given brief and these can differ widely in levels of creativity". The wherewithal of design lies in its capacity to produce solutions – multiple, varied and creative. Creation and creativity are the twin fulcrums of design, hence it's just natural if in the popular perception design is primarily considered to be as an aesthetic expression. Walker [49] (2003) quotes Apple CEO Steve Jobs who tried to clarify this popular misperception when he said: "Most people make the mistake of thinking design is what it looks like. People think it's this veneer -- that the designers are handed this box and told, 'Make it look good!' That's not what we think design is. It's not just what it looks like and feels like. Design is how it works." Job's view extends the boundary of design not only in terms of function but also application.

The models of design thinking may appear to be a linear process where one stage leads to the other, however, in practice it encourages non-linearity where each stage can go back and forth if needed to find the most appropriate creative solution. Design thinking thus gives a new framework to redefine problems from a new perspective and develop solutions humans in mind. Its logical approach not only helps solve design's own problems but also those of other domains viz. management, public policy etc. It can also be a useful tool to solve the problems of non-traditional security.

Conclusion

We live in a complex world which has interconnected structure with interacting elements. In the sociological literature the problems having non-linear systems and heterogenous elements are discussed under Complexity Theory (Törnberg 2011). [50] The main assumption of the theory is that traditional approaches and linear methods often fail to identify the real source of problem and the solutions thereof. Hence, new approaches are required for problem solving. The concept has a resemblance of the 'wicked problems' discussed under design thinking. The non-traditional security problems by nature are both complex and wicked because they too have interconnected structure and interacting elements whether it's health, climate change, irregular migration and their like. The ongoing

humanitarian crisis created by the COVID-19 pandemic has made it abundantly clear that the source of this problem is not only the highly contagious nature of the virus. More than that, it's the large-scale human interaction indispensable for the socio-economic, political and cultural survival of the globalized world which has turned an epidemic into a pandemic. It's impacting not only the physical but also mental health, economy, livelihood and other aspects of life. Nations across the world are faced with the Hobson's choice - to save life or livelihood. To save life governments in India and elsewhere have opted for lockdown and physical distancing. But it has led to other problems such as major unemployment and global economic recession everywhere. In India, the problem is further compounded by large-scale exodus of labour. Obviously, solution to such complex problems require far more creativity.

While, it's imminent to find suitable answer to the problem of health security, it's also imperative that the answer must address the problem at different levels. Design thinking may create innovative insights to address this wicked problem. For example, to reduce chances of infection maintaining personal hygiene and physical distancing have been recommended. However, this requires major behavioural change which may be attained with the help of design thinking. It will first help identify the nature of problematic behaviour and then design solution in terms of products and systems. To avoid physical contact and face to face interaction design intervention in personal digital devices are being explored. Online teaching, work from home, telemedicine, etc., are going to be the part of the new normal. However, successful design innovations will be possible only by applying coordinated design thinking.

Diversity has its own problems that a country like India faces in such situations. For example, a design option which is technologically feasible may not be economically viable and culturally adaptable here. To appreciate this problem design thinking may recommend an empathy based solution. Similarly, information anxiety during pandemic is another big problem caused due to information overload. It's being addressed by User Experience Design (UX). UX tries to reduce the anxiety by reducing the cognitive load of the anxious people by providing only such information which are necessary. Complicated situations require uncomplicated and simplistic solutions. The experience of design thinking tells us that if the choices and complexities are increased, the time taken in decision making may also increase which may be detrimental for health security.

Finally, analyzing a problem in the larger perspective of systems – the series of interconnected interactions, is what design thinking stands for. Norman [51](2010) underscores the need of systems thinking in the whole theoretical framework of design

thinking. He says: "What is design thinking? It means stepping back from the immediate issue and taking a broader look. It requires systems thinking: realizing that any problem is part of larger whole, and that the solution is likely to require understanding the entire system." Solving problems of non-traditional security also requires understanding of the entire system because of its interconnected structure and interacting elements. Application of design thinking in the process may thus provide useful creative insights. Applying design thinking to solve problems of health security in particular and non-traditional security in general may be the new way forward.

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