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EXPONENTIALLY ACCELERATING CUE BALL: WILL VIRTUAL REALITY'S IMPACT FRACTURE THE WESTPHALIAN INTERNATIONAL SYSTEM?

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Exercise *Solo Flight*

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> *Politics has often been intertwined with the other-worldly. From the thick ties between magic, religion and sovereignty in the ancient world through the reign of ostensibly divine representatives of God in the form of medieval European monarchies, there has been a symbiosis of the political and the imaginary, of power and mythos, of the concrete and the virtual.*
>
> – Caleb Gallemore, *2005 Northedge Prize winning paper*

INTRODUCTION

Scholars often use the billiard ball analogy to illustrate the nature of the international system. Some use the analogy to describe realist anarchic theories, positing that international relations can best be understood by studying how states – as the main actors in the system – interact with each other, and others use it to explain constructivism, illustrating each 'ball' with a unique colour representing its identity, which, constructivists argue, shapes each state's behaviour within the system.[1] Meanwhile, scholars and technological innovators in the computer science field have long observed the accelerating growth in the power of computing. As the products of this growth become increasingly powerful and prominent, will their influence simply evolve the ways existing actors interact, or will the impact of their lengthy acceleration ultimately hit the international system with the force of an extremely high-speed, giant cue ball, strong enough to fracture the actors?

This paper will investigate the possible long-term consequences of virtual presence technologies on society and the international system. It will argue that these technologies present an entirely new, powerful and transformative form of human interaction, where people will no longer require physical proximity to maximize common ground and trust. It will further argue that this new paradigm of rich, cross-border human interaction will enable the creation of new

[1] Daniel Nexon, *Intro to Constructivist Theory*, Georgetown University, 2006, https://www.youtube.com/watch?v=7yQITXWgd8k, retrieved 10 May 2016.

spheres of authority and global governance structures, which could fundamentally fragment the Westphalian international system.

The paper will take a "bottom-up" approach to develop the key arguments supporting the thesis. It will first look at the accelerating pace of technological development as a whole, with particular attention to emerging virtual presence technologies. It will then examine how these technologies will represent a fundamental paradigm shift for human social interaction and, ultimately, the development of common ground and trust – essential constituents of productive, cohesive groups. Finally, the paper will explore how the consequences of this paradigm shift could fracture the present Westphalian international system.

THE EXPONENTIALLY ACCELERATING CUE BALL

From the lineups outside Apple stores before each new iPhone release, to the growing technology magazine sections in airports, it is plain that rapid technological innovation has become part of everyday life – it is culturally accepted and *expected*. The first to observe this phenomenon was Dr Gordon Moore, who predicted in 1965 that the amount of transistors – the basic elements of electronic computation – able to fit on a computer chip of a given size, would double every two years. [2] His observation, now known as 'Moore's Law,' has withheld the test of time.[3] Although some critics have argued that progress will halt when transistor sizes shrink too close to the limit imposed by the electron, the general consensus is that exponential growth of overall computation power will continue past Moore's integrated circuit paradigm. It has been observed that the essence of Moore's Law – the regular doubling of computing capacity – started well before the invention of the transistor, has applied to virtually every area of electronic technology, and will likely continue into future forms of computing, such as quantum

[2] Gordon E. Moore, "Cramming More Components onto Integrated Circuits," *Electronics*, April 1965: 114-117.
[3] Ethan Mollick, "Establishing Moore's Law", *IEEE Annals of the History of Computing, 2006: 62-75.*

computers.[4] Long time inventor, futurist and current Director of Engineering at Google, Ray Kurzweil, coined his own law to extend Moore's, which he called the Law of Accelerating Returns.[5]

This doubling of the capabilities of electronic technology every two years, according to Kevin Kelly, founding executive editor of *Wired,* will soon bring about a transformative revolution in society, caused by the explosion of virtual presence technologies.[6]

As this paper will present some rather bold claims about the transformative potential of virtual reality (VR), it is important to first address two main sources of common skepticism surrounding technological predictions in general. The first is the linear nature of human thinking, which inhibits our ability to think in the exponential manner required to predict, objectively, future technological capabilities. This causes us to become highly skeptical or dismissive in the face of seemingly incredible, albeit objective, predictions. Human minds are optimized to predict the future along linear progressions: if we plan to take twenty steps forward, we predict, afterwards, to be twenty steps away from our start point. Thinking in the exponential manner required to forecast technological progress objectively, means wrapping our minds around the concept that step size doubles with each subsequent step. So taking twenty steps equates to twenty *doublings*, after which we arrive 1,048,576 steps away from our initial start point, when measured against the size of the first step.[7] This difficult and counterintuitive logic is part of

[4] George Strawn and Candace Strawn, "Moore's Law at Fifty," *IT Professional (IEEE Computer Society) Vol 17 Issue 6, Nov-Dec 2015: 69-72.*
[5] Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology,* (New York: Penguin Books, 2006): 44-74.
[6] Kevin Kelly, "Ten Inevitable Forces that Will Shape our Future," *SXSW Interactive 2016*, (March 2016) https://www.youtube.com/watch?v=pZwq8eMdYrY, retrieved 9 May 2016.
[7] For a detailed explanation of this phenomenon, see Ray Kurzweil, *How to Create a Mind*, (New York: Penguin Books, 2012): 248-251 and 266-267.

what makes technological predictions beyond ten years – which is five doublings, or 32 times the current capacity – extremely difficult.[8]

Year	Technological capability factor
2007	1 – 1st generation iPhone released
2009	x 2
2011	x 4
2013	x 8
2015	x 16
2017	x 32 – 1st generation commercial VR systems released
2019	x 64
2021	x 128
2023	x 256
2025	x 512
2027	x 1,024
2029	x 2,048
2031	x 4,096
2033	x 8,192
2035	x 16,384
2037	x 32,768
2039	x 65,536
2041	x 131,072
2051	x 4,194,304
2061	x 134,217,728
2071	x 4,294,967,296
2081	x 137,438,953,472
2091	x 4,398,046,511,104
2101	x 140,737,488,355,328

Figure 1: Author's calculation of projected technological capabilities by year, according to Moore's Law/Law of Accelerating Returns, as compared to 1st generation iPhone

Coincidently, as Figure 1 illustrates, this is the amount of time between the first generation iPhone and the first generation commercial VR systems. Going back another 10 years, to 1997, Larry Page and Sergey Brin registered the (then) unfamiliar word 'google' as an internet domain name, one year before the site's official launch.[9]

[8] See Table 2, where the Gartner institute does not attempt to predict accurately beyond ten years.
[9] Google company, "Our History in Depth," last accessed 9 May 2016, http://www.google.ca/about/company/history/

The second common source of scepticism is what information technological research and advisory firm, Gartner, has branded as the Emerging Technology Hype Cycle.[10] Innovative ideas generate excessive hype causing unprepared markets to deliver under expectations in the short term, resulting in a tarnished brand for the initial idea, and leading to what Gartner calls the "trough of disillusionment."[11] It is within this period that people become most skeptical about the technology. As illustrated in Figure 2, VR and its cousin, Augmented Reality (AR), are currently in this period.

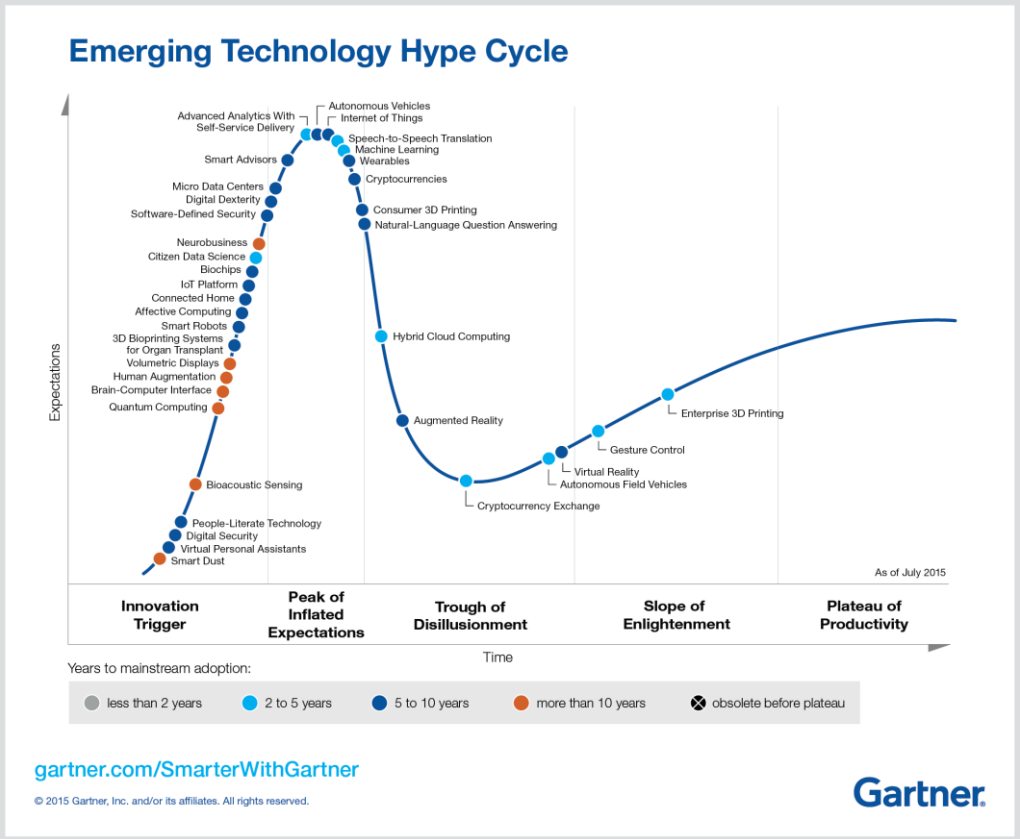

Figure 2: Emerging Technology Hype Cycle

Source: Gartner "What's New…"

[10] Gartner, "What's New in Gartner's Hype Cycle for Emerging Technologies, 2015," last accessed 9 May 2016, http://www.gartner.com/technology/research/methodologies/hype-cycle.jsp
[11] Ibid.

We therefore *overestimate short-term* technological progress as we are caught up in the hype, then *underestimate long-term* progress due to the counterintuitive nature of exponential growth. Accepting these prejudices for what they are, we can think objectively about the future potential of VR.

OUT OF THE TROUGH OF DISILLUSIONMENT, INTO *COPRESENCE*

The 1990s brought much hype around VR, with movies like The Lawnmower Man, Johnny Mnemonic, and Virtuasity, all promising great things for the technology. In 1995, Nintendo released the Virtual Boy in the hype's peak, promising that it would "totally immerse players into their own private universe."[12] Instead, what consumers got was a low resolution, monochrome, cumbersome head-mounted display that caused dizziness and headaches amongst users, and the Virtual Boy became one of the worst commercial failures in video game history.[13] The entire VR brand suffered as a result.

Yet as figure 2 demonstrates, VR is on the verge of entering the next phase, or the "slope of enlightenment." Recent developments clearly indicate this: In 2014, Facebook acquired Oculus VR for the impressive sum of two billion dollars, HTC just released the Vive headset, Sony is about to release the Playstation VR, Samsung recently released Gear VR, Google released Cardboard, and Microsoft will soon release their own device, called Hololens, which is specifically designed for the workplace. If virtually every tech giant is jumping into the VR race expeditiously, it is probably a good indication that the technology is finally ripening to soon

[12] Dave Smith, "Nintendo is Getting Back into Virtual Reality," *Business Insider*, 2 Feb 2016, http://mobile.businessinsider.com/nintendo-virtual-reality-is-coming-back-2016-2

[13] Benj Edwards, "Unraveling The Enigma Of Nintendo's Virtual Boy, 20 Years Later," *Fast Company*, 21 August 2015, http://www.fastcompany.com/3050016/unraveling-the-enigma-of-nintendos-virtual-boy-20-years-later

deliver on the old promises of the 1990s, and further, that these companies forecast a large market for VR. One such company already plans to re-tool in favour of this technology:

> At Magic Leap, the development team will soon abandon desktop screens altogether, in favor of virtual displays. Meron Gribetz, founder of Meta, says that its new Meta 2 mixed-reality glasses will replace monitors in his company of 100 employees within a year. It's no great leap to imagine such glasses also replacing the small screens we all keep in our pockets. In other words, *this is a technology that can simultaneously upend desktop PCs, laptops, and phones... this is what disruption on a vast scale looks like.*[emphasis added][14]

Tech consultancy firm Digi-Capital recently predicted $120 Billion in revenue generated from the AR/VR market by 2020,[15] and Wired magazine's Kevin Kelly, who has been covering technological developments for over 30 years, recently wrote that the "artificial reality winners will become the largest companies in history, dwarfing the largest companies today by any measure."[16]

So far, this section has argued that VR will be a very big, very soon, but for the purpose of this paper, the technology itself is less important than the potential it presents for society. One of the pioneers of the Internet, Brian Shuster, recently said that "Virtual Reality holds the promise to be even more transformative than the flat Web was."[17] Further, the cover of Vanity Fair's October 2015 issue featured a picture of Mark Zuckerberg, and below, the following statement: "He changed the world once. He says he'll do it again with Oculus Rift."[18]

Can VR truly change the world? What is special about VR as a means of social interaction, making it fundamentally different from existing social networks?

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[14] Kevin Kelly, "Hyper Vision," *Wired*, issue 24.05, (May 2016): 83.
[15] Digi-Capital, "Augmented/Virtual Reality revenue forecast revised to hit $120 billion by 2020," last accessed 9 May 2016, http://www.digi-capital.com/news/2016/01/augmentedvirtual-reality-revenue-forecast-revised-to-hit-120-billion-by-2020/.
[16] Kevin Kelly, "Hyper...", 112.
[17] Wired, "Could Virtual Reality Help Revitalize the Economy?" last accessed 9 May 2016, http://www.wired.com/insights/2014/10/virtual-reality-economy/
[18] Vanity Fair, October 2015.

To answer this question, one has to delve into the science of human interaction, and good place to look is at the workplace. At the dawn of the digital age, companies struggled to adapt to the influx of new communications means and understand the ways in which they could optimize workflows and productivity. New communications means such as email, video teleconferencing and collaborative software like Microsoft NetMeeting brought about the real possibility of virtual teams and distributed workforces. A plethora of academic speculation and research arose from this period and as early as 1997, senior editor at *The Economist*, Frances Cairncross, published *The Death of Distance*, where she argued that modern communications were making geography increasingly irrelevant to peoples' daily lives.[19] In direct opposition to this view, Gary and Judith Olson of the University of Michigan, countered in their paper *Distance Matters*, that "there are characteristics of face-to-face human interactions... that technologies are either pragmatically or logically incapable of replicating. Cairncross was wrong. Distance is not only alive and well, it is in several essential respects immortal."[20]

Two main themes in the literature support the supposed immortality of distance, namely the establishment of *common ground*, and the building and maintenance of *trust* amongst dispersed team members. Common ground refers to "that knowledge that the participants have in common, and they are aware that they have it in common."[21] Olson and Olson postulated that common ground could be achieved most effectively in person:

> We establish common ground not just from some general knowledge about the person's background but also through specific knowledge gleaned from the person's appearance and behaviour during the conversational interaction itself. If we say something based on an assumption about what someone knows, but their facial expression or verbal reply indicates that they did not understand us, we will

[19] Frances Cairncross, *The Death of Distance: How the Communications Revolution Will Change our Lives.* (Boston: Harvard Business School Press).
[20] Gary Olson and Judith Olson, "Distance Matters," *Human-Computer Interaction* (2000, vol 15): 141.
[21] Ibid., 157.

> revise our assumptions about what common ground we share and say something to repair the misunderstanding.[22]

Clark and Brennan, further deconstructed, as illustrated at Figure 3, all available forms of human interaction and described how each enabled various expressions and negotiation of common ground.

Medium	Copresence	Visibility	Audibility	Cotemporality	Simultaneity	Sequentiality	Reviewability	Revisability
Face to face	•	•	•	•	•	•		
Telephone			•	•	•	•		
Video conference		•	•	•	•	•		
Two-way chat				•	•	•	•	•
Answering machine			•				•	
E-mail							•	•
Letter							•	•

Figure 3: Characteristics that contribute to achieving common ground that are inherent in various communications media.

Source: Gary Olson and Judith Olson, "Distance Matters."

According to Clark and Brennan, copresence is the one characteristic of effective human interaction that only face-to-face communications can achieve: "A and B share the same physical environment. In face-to-face conversation, the participants are usually in the same surroundings and can readily see and hear what each other is doing and looking at. In other media there is no such possibility."[23] Olsen and Olsen further defined copresence as "access to the same artifacts

[22] Ibid.
[23] Herbert H. Clark and Susan E. Brennan, "Grounding in Communication," *Perspectives on socially shared cognition*, ed. Laurne B Resnick, John M. Levine, and Stephanie D. Teasley, (Washington: American Psychological Association): 141.

to support the conversation, allowing diectic references (references to objects or ideas made by pointing and gesturing and using the words *this* and *that) and shared context."*[24]

Yet the entire re-emerging VR market discussed earlier is betting precisely on the technology's forthcoming ability to solve this exact limitation, and if those in the industry who are pouring countless dollars into the technology are right, and the insiders who have trialed the latest prototypes are to be believed, *remote copresence* is just around the corner. For example, Mark Zuckerberg recently posted that the Oculus Rift can "make you feel like you're actually present in another place with other people."[25] Kelly, who is in the unique position of being able to trial the latest prototypes from various companies, speaks to the ability of emerging VR technologies to fool our senses:

> One of the interesting surprises to me was... say a video game that has a first person view, like Call of Duty... When you put it into a VR, it shifts your point of view. Well you say "how can it shift your point of view? You're already first-person." What happens it that it moves you to what I call the you-person. The thing about a shooter game is that you're still kind of watching it. When you get to VR, you're not watching it anymore. It is happening to you. And one of the common descriptions of people who leave [the VR environment] is that they aren't remembering it as something that they watched, but as something that happened to them. That shift is very, very strong. And one thing we have noticed is that the kind of gruesome or gory things that happen in a first person [shooter video game] become too strong once you're in the you-person... There's a demo...which is showing how to capture 3D in a resolution where you can come up to the person talking and you can see the fabric on their clothes... And I even found it uncomfortable to get too close to the virtual people, like I was invading their space. That's the degree of realism we can do right now. Add to this ways to read your face... you can actually have telepresence of someone who lives in Bangalore and they're going to be sitting next to you and you really will feel like they were there. And the secret by the way is eye-contact, and once you bring this into these worlds, and the person is looking at you when you're speaking, you are utterly convinced that there is somebody there.[26]

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[24] Olson, "Distance...," 159.
[25] Mark Zuckerberg, *Facebook post*, 25 March 2014, https://www.facebook.com/zuck/posts/10101319050523971, retrieved 8 Feb 2016.
[26] Kevin Kelly, 12 Inevitable Tech Forces That Will Shape Our Future, *SXSW Interactive 2016*, https://www.youtube.com/watch?v=pZwq8eMdYrY, retrieved 9 May 2016.

The second theme discussed in the distributed workforce literature is the difficulty with the building and maintenance of *trust* within virtual teams. For this reason, experts recommend dispersed workforces to conduct face-to-face team building events at the beginning of major endeavours, and to schedule these at various intervals within the life of a given project. According to Olson and Olson, development of trust comes most strongly through shared experiences.[27] Remote teams "have been reported to be less effective and reliable than face-to-face teams, based on the observation simply stated as 'trust needs touch'"[28] But if technology can provide solutions to enable true *remote copresence*, and members remember virtual team-building events as *something that happened to them*, could this not provide the shared experiences necessary to maximize trust? Kelly offers a poker game test – which he believes VR will soon pass – described as such: "Do the avatars sitting across from you convey sufficient subtle eye contact, body language, and social presence that you can tell if they're bluffing?"[29] Once VR passes this test, it is reasonable to deduce that if one can detect bluffing across the VR medium – which is essentially a form of faked sincerity – one could just as easily recognize the pure sincerity required to establish trust.

Copresence is the one type of critical human interaction that technology currently cannot bridge, and it coincidentally is the most powerful enabler of *both common ground and trust*, which are together, the most important characteristics of remote team effectiveness. VR will soon rival collocation itself in providing copresence. Perhaps Cairncross was right back in 1997 about the death of distance, and just wrong about the technologies that would bring it about; her thesis simply needed ten extra steps, or *doublings*.

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[27] Olson, "Distance...," 168.
[28] Ibid.
[29] Kelly, "Hyper...," 111.

In addition to copresence, VR will enable telepresence of virtual individuals, allowing users to travel, from the comfort of their homes, to a real location and truly experience events as they unfold. This experience is already available in demo form on the Samsung Gear VR, where users can be transported to Pyongyang North Korea virtually, and see citizens going about their daily business, families walking together, and kids playing.[30] The experience is pre-recorded but is nonetheless eye-opening. In the near future, with the Internet of Things and real-time translation – both due to reach maturity within the same timeframe as VR (see figure 3) – it is not difficult to imagine being able to project our senses through VR and become a true "fly on the wall" anywhere an open 3D camera is installed. VR users will be able to march with protesters in Iran, or project their senses to join media reporters anywhere in the world, and feel as if they were right beside them.

The ability to project our senses to experience events in a distant land will not be unidirectional. Moderate and opposing voices in oppressive regimes will be able project their presence, *together*, to a café in Toronto for example, sharing experiences only possible within a free and democratic society. A new era of soft power will emerge. 500 years ago, the social networks of the day helped propagate the ideas that brought about the Reformation, and lately, modern social networks helped bring about the Arab Spring.[31] And if trust and collaboration within opposing forces brought down the Berlin Wall, as Dr Mary Elise Sarotte argued in a recent *New York Times* article,[32] then the most powerful large-scale trust and collaboration enabler in human history has the potential to break down many more walls indeed.

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[30] Author's own experience with the Gear VR (seeding the original idea for this paper).
[31] Tom Standage, "Social Media in the 16th Century: How Luther went viral," in *The Economist*, 17 December 2011, http://www.economist.com/node/21541719?zid=315&ah=ee087c5cc3198fc82970cd65083f5281, retrieved 10 May 2016.
[32] Mary Elise Sarotte, "How the Berlin Wall Really Fell," *The New York Times*, http://www.nytimes.com/2014/11/07/opinion/how-the-berlin-wall-really-fell.html?_r=0

Could it even break down the walls of Westphalia?

IMPACTING WESTPHALIA'S BILLIARD BALLS

There is little doubt that the promise of VR to enable remote copresence will change society. Exactly how these changes will affect the international order is less clear, and difficult to determine.

One of the reasons for this, as offered by Rosenau, is the scarce presence of sociological analysis into the study of international relations (IR):

> My own preference would be to witness a wholesale shift into IR by sociologists. We need some of the prime conceptual inclinations. Most notavly perhaps, IR can benefit from the micro-macro theories, methods, and approaches that sociologists bring to their inquiries. Their system-subsystem orientations – theories premises, hypotheses, and data that seek to draw the links between people at the micro level and collectivities at the macro level – are woefully lacking in the study of IR today.[33]

This causal link between the people at the micro level and the collectivities at the state and international level is missing, and as a result, it is difficult to predict, with a reasonably high level of probability, the ultimate impact of a revolutionary social technology like VR. But this did not prevent some IR theorists from forecasting, at the same period Cairncross wrote *Death of Distance*, the fragmentation of the Westphalian system. Similar to Cairncross, their logic may have been correct and they too were simply missing the exponential steps required for remote copresence to enable their theories to blossom.[34]

One such scenario was offered by Stephen Kobrin in 1998, when he argued that in the future, history may remember the peace of Wesphalia as a detour humanity took between medieval universalism and the coming neomedievalism, or in his words, "the modern era may be

[33] James Rosenau, "Unfulfulled Potential: Sociology and International Relations"
[34] Perhaps we can draw parallels with Gartner's Graph. IR theories hitting a peak of inflated expectations followed by a drought of disillusionment?

a window which is about to slam shut."[35] This could occur, according to Kobrin, as the "scale and complexity of technology and the emergence of electronically integrated global networks render geographic borders and, more fundamentally, the basic construct of territorial sovereignty problematic."[36] As discussed in the previous section, VR is exactly the kind of technology that promises to erode the meaning of geography and borders – much more so than any other technology to date.

Rosenau similarly argued that technology and globalization has created *distant proximities* that will ultimately result in the creation of new cross-border spheres of authority (SOA):

> I think it is probable... that spheres of authority other than states designed to cope with the links and overlaps between localizing and globalizing dynamics will evolve and render the global stage ever more dense. Some of the actors who preside over the SOAs will prove to be rivals of states, while others will become their partners, but in either event SOAs...seem likely to move to the center of world affairs...[37]

It is possible to argue that creating such strong cross-border SOAs will require members belonging to a given sphere to achieve common ground and trust, which will be made immensely more effective with VR technology, thus further strengthening existing SOAs and rapidly spawning newer, perhaps more powerful ones. Rosenau further describes what kind of new SOAs could emerge:

> Some of these SOAs may be partially founded on territoriality, but none are fully grounded in the same kind of geographic space that has marked the nation-state era. Rather, the boundaries of the bargaining agents, the SOAs, are *defined by those entities to which people accord salience and thereby attach their loyalties.* [emphasis added] Thus an SOA can be an issue regime, a professional society, an epistemic community..., a network of the like-minded, a truth commission, a corporation... a social movement, a local or provincial government, a diaspora, a

[35] Stephen Korbin, "Back to the Future: Neomedievalism and the Postmodern Digital World Economy," *Journal of International Affairs* (Spring 1998): *364.*
[36] Ibid.
[37] Rosenau, *Distant Poximities*, 294.

> regional association, a confederation of NGOs, a transnational advocacy group, a paramilitary force, a credit rating agency... a transnational network, a terrorist organization and so on, across all the diverse collectivities that have become sources of decisional authority in the ever more complex multi-centric world.[38]

This, according to Rosenau, will lead to a profound fragmentation or disaggregation of the authorities of states and lead to new kinds of authority structures:

> ...while many states manage to cling to sufficient authority to be viewed as legitimate by their own populations, the advent of SOAs with their own emerging brand of legitimacy in the multi-centric world has reduced the number of states that have the kind of unqualified authority granted their counterparts in the past.[39]

In his 2005 Northedge Prize winning paper, Gallemore offered that a Neomedieval Europe could emerge as the "discursive and economic patters of the information society are slowly displacing the relevance of formal political governance structures by providing *new forms of mobility, sources of power, and means of belonging to society* [emphasis added]."[40] While this paper makes no specific claims about a potential "Neomedieval" emergence in China, the forces Gallemore wrote about are certainly at play today, at least with the younger generation. A recent Chinese paper reporting on students' political socialization under the network environment warns authorities about the risks of social networks:

> Under the influence of network information, college students easily shake their political beliefs, doubt the political system and eventually lead to the decrease of the political responsibility and the formation of a negative political tendentiousness, and the effect of political socialization disappears... In the vast ocean of the network, the traditional culture, the mainstream culture and foreign culture are interweaving, that makes the situation complex and diverse. This multicultural intertwined phenomena, hits the mainstream culture of our country and makes its guiding role being challenged [sic].[41]

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[38] Ibid., 295.
[39] Ibid.
[40] Caleb Gallemore, "Of Lords and (Cyber)Serfs: eGovernment and Poststructuralism in a Neomedieval Europe," *Millennium: Journal of International Studies* vol. 34 no.1 (2005): 46.
[41] Xiaojie He and Weifeng Qiao, "Current Status and Problems of College Students' Political Socialization under the Network Environment," *Information Technology Journal 12* no. 20. (2013).

The paper further recommends for the college to counter this force by closely monitoring students' political behaviors in order to give targeted guidance when needed, and build a "mainstream political righteousness site to spread the active, *correct* [emphasis added] and advanced ideology and culture."[42]

Should the Westphilian system fragment as some suggest, one possible vision of what neomediavalism could look like was offered by Benjamin Barber in his 2013 TED talk, *Why Mayors Should Rule the World*. He provided some compelling arguments supporting his assertion that the current system should be replaced:

> ... we live in a 21st century world of interdependence, and brutal interdependent problems, and when we look for solutions in politics and in democracy, we are faced with political institutions designed 400 years ago: Autonomous, sovereign nation-states with jurisdictions and territories separate from one another, each claiming to be able to solve the problem of its own people. Twenty-first-century, transnational world of problems and challenges, 17th-century world of political institutions...The bottom line is, we still live politically in a world of borders, a world of boundaries, a world of walls, a world where states refuse to act together. Yet we know that the reality we experience day to day is a world without borders... or economics and technology without borders, of education without borders, of terrorism and war without borders. That is the real world, and unless we find a way to globalize democracy or democratize globalization, we will increasingly not only risk the failure to address all of these transnational problems, but we will risk losing democracy itself, locked up in the old nation-state box, unable to address global problems democratically.[43]

Barber believes the future may be a flatter world without nation-states, but instead, with cities, governed globally through a united League of Cities, where a global parliament of mayors would govern the world. Although this possibility is difficult to imagine today, it is not as difficult to envisage a future where richer cross-border human integration, enabled by telepresence technologies, spawns new SOAs and contributes to the erosion of the nation-state's

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[42] Ibid.
[43] Benjamin R. Barber, "Why Mayors Should Rule the World," *TED Videos*, Jun 2013, https://www.ted.com/talks/benjamin_barber_why_mayors_should_rule_the_world?language=en, retrieved 9 May 2016.

privileged position as the primary SOA in the international system. A flatter, more global society, with an entirely new form of governance *could* emerge out of the complexity.[44]

CONCLUSION

For all of history, geography has had a monopoly on the building of common identities and societal norms. Language, religion, values – these things can only by transmitted through communications; prior to the information revolution, communication was immensely, geographically constrained. Each new communications means, from the postal service, to the telegraph, radio, telephone, television, and the internet, has brought us closer to technologically 'checking off' all possible forms of human interaction, until only copresence, the quintessential enabler of common ground and trust, remained constrained in the realm of shared geography. VR is about to challenge geography's monopoly on the most powerful form of human interaction: we will possess the ability to travel and interact as richly as in person, across a distance. As a result, stronger, non-geographic identities will inevitably arise. The accelerating cue ball of technology will hit soon and the balls representing Westphalia's nation-states will either chip, crack, splinter, or shatter following the impact – only time will tell. Nevertheless, one thing is certain: few steps remain.

[44] Delving into complexity theory, especially complex-adaptive systems, to show how interconnected spheres of authority in a complex-adaptive system could spawn emergent forms of governance, would be interesting here, but well beyond the scope of the paper's 3000-word limit. For more on this subject, read Rosenau's concept of Mobius-Web Governance, in *Distant Proximities*, 396-399.

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