AN ALGORITHM PREVIOUSLY WROTE THIS ESSAY:
LESSONS FOR PUBLIC CONSULTATIONS FROM ARTIFICIAL INTELLIGENCE

WORD COUNT: 1350

GABE SENECAL
GABE.SENECAL@GMAIL.COM
CARLETON UNIVERSITY
MASTER OF PUBLIC POLICY AND ADMINISTRATION
THE LIBRARY OF BABEL

In the digital age, we are overloaded by incomprehensible volumes of data like the characters of Borges’ 1944 short story *La biblioteca de Babel* (The Library of Babel). Borges’ characters are trapped in their massive library, which contains peculiar books. Every room, of which there are too many to explore in a lifetime, has the same number of shelves and volumes. The 410 pages of each book are filled with one unique permutation of letters and punctuation. Most combinations of characters do not result in words, let alone sentences or paragraphs, but since every combination exists every potential phrase is on the library’s shelves somewhere. Some trapped inhabitants search the volumes for the rare coherent fragment or paragraph, or even the meaning of their existence, which must be on the shelves—along with every false explanation. Shakespeare’s plays and the Harry Potter series are in the Library of Babel, but no human can read enough to find many coherent pages, let alone the information they seek. Inhabitants of the library have no alternative to tedious, directionless searching. Today, proactive governments can take advantage of access to more information than ever, but disorganized governments will flounder.

PUBLIC CONSULTATIONS

Is public consultation valuable? Governments consult to learn from citizens and build goodwill. Citizen expertise may be hidden, but it certainly exists and is valuable to find. Moreover, ineffective communications systems are a larger threat to democracy than the public being a thoughtless, staggering mob. Effective public consultations not only identify public expertise, but also communicate the dilemmas of decision making to citizens. Improving current public consultations practices can lead to more responsive government decisions and citizens happier with the results.

---

1 Borges, 1944. *The Library of Babel*.
2 The Library is made of hexagonal rooms. Each wall has five bookshelves that hold precisely 32 books. Each book is 410 pages of 40 lines. Each line has approximately 80 letters. It only contains lower case letters. Punctuation is restricted to the comma and period.
Technology creates opportunities to diversify the public consultation toolbox to achieve those two objectives. Digital tools show potential to enhance public communications and even address shortfalls of offline consultations, but also create new challenges like the infamous incivility of conversations on online comment sections and discussion forums.\(^6\) But under certain conditions, computer-based discussion achieves open conversation regarding controversial political ideas.\(^7\) Some scholarship has found in online deliberations participants were more information driven than offline.\(^8\) Even advocates of digital consultation technology reject that it is a panacea;\(^9\) the most engaged participants dominate the discussion online in the same way as offline;\(^10\) digital engagement platforms must address procedural, social, and psychological barriers to meaningful participation;\(^11\) and platforms must be rule-based and mediated.\(^12\) For digital public consultation, the design of the platform—how citizens interact with each other, the government, and information—matters.\(^13\)

Both government and citizen benefit from effective public consultations of both digital and analog varieties. Meaningful engagement is foundational to good policy and programming,\(^14\)\(^15\)\(^16\) and participation is higher when perceived as impactful\(^17\) and connected to outcomes.\(^18\) If she knows the government consulted widely on an issue, a Canadian is more likely to approve of the decision.\(^19\) If her local government engages citizens digitally and consults with her, scholarship shows she is likely to increase her trust in it.\(^20\) Digital public consultation can improve decisions, increase citizen participation,
and improve Canadians’ views of their Government, but only with appropriate consultation processes and platforms. Taiwan has an excellent example.

VTAIWAN

In 2014, mass protests for government transparency pushed Taiwan’s government to the unorthodox proposal eventually dubbed vTaiwan.²¹ Citizen hacktivists were tasked with designing a transparent platform and process for rational discussion the whole nation could participate in. The government pledged to be bound by the popular will of the discussions of vTaiwan,²² which regularly leads to the passing of laws in the Taiwanese legislature.²³ Especially unique is the artificial-intelligence facilitated digital conversation platform, which avoids traditional online debate pitfalls by incentivizing participation that helps identify consensus among all participants.²⁴ The four steps of vTaiwan:

1. Proposal Stage - Issues are selected based on citizen, stakeholder, or government proposals. No issue will move forward without a government authority being accountable to it.

2. Opinion Stage - Pol.is, an artificial-intelligence facilitated conversation platform distributed among stakeholders and through Facebook advertisements gathers opinions on user-generated statements.²⁵²⁶

3. Reflection Stage - Emerging issues are discussed in a public meeting between officials and scholars. The meeting is broadcast by video and remote participants are fully connected and can contribute with discussion tools and on social media.²⁷

---

²¹ The “v” in “vTaiwan” stands for virtual.
²² Barry, “Frontier of Democracy”.
²³ Barry, “Frontier of Democracy”.
²⁴ Hsiao et al., “vTaiwan”.
²⁵ vTaiwan makes use of other technology platforms like Typeform and Sli.do for purposes of gathering, organizing, and communicating information. These are typically open-source or free to use software.
²⁶ As part of finding relevant stakeholders, existing stakeholders are surveyed whether they know other potential stakeholders who should be a part of the discussion.
²⁷ Primarily, Livehouse.in and Youtube are used to broadcast these deliberations. Livehouse.in has comment functionality that allows remote participants ask questions to the experts.
4. Legislation Stage - For statements achieving consensus, the government either agrees to take action, or outlines s detailed explanations for why that action it is not presently feasible.\textsuperscript{28}

Much of vTaiwan’s success is due to the consultation platform Pol.is.\textsuperscript{29} When it was added during vTaiwan’s development, participation scaled two orders of magnitude and the complexity of conversations increased.\textsuperscript{30} On Pol.is citizens respond “agree”, “disagree”, or “pass” to participant-generated statements and can add their own.\textsuperscript{31} The software uses artificial intelligence to visualize groups of citizens with similar opinions in clusters.\textsuperscript{32} More popular statements are awarded with visibility, leading to statements with more and more mass-appeal that extend from one cluster to another. The software works in real time, gradually incentivizing clusters towards points of general consensus over the course of weeks. This consensus is what most participants agree on about a policy problem, not universal agreement about how to solve it. Participation in vTaiwan is scalable beyond the limits of other forms of public consultation.\textsuperscript{33} Since the process is also effective for finding the points of consensus in polarized debates,\textsuperscript{34} vTaiwan’s benefits are most substantial for divisive, impactful issues. It is a feasible model for mass, decentralized public consultation by the Government of Canada.

\textbf{THE CANADIAN CONTEXT}

The Government of Canada must anticipate positive and negative consequences of implementing a mass consultation process like vTaiwan. Concerns like geographic distance, digital literacy, internet access, security, and language rights all need valid answers. While digital consultations advantageously reach across distance, raising awareness of consultation efforts across Canada and navigating time zone

\textsuperscript{28} Hsiao et al., “vTaiwan.”
\textsuperscript{29} As noted, the software is Pol.is.
\textsuperscript{30} Barry, “Frontier of Democracy.”
\textsuperscript{31} It is not insignificant the platform does not allow for responses to other statements or other vestiges of social media. Megill, “pol.is in Taiwan.”
\textsuperscript{32} Principal components analysis and k means clustering are used. Hsiao et al., “vTaiwan.”
\textsuperscript{33} Data automatically collected as part of the pol.is surveying is also scalable.
\textsuperscript{34} Hsiao et al., “vTaiwan.”
issues could be a challenge. Most Canadians could participate in an online consultation, but those without internet access or who are not digitally literate are concentrated in age and location. Citizens need to be assured the software and process is truthful and not hackable; transparency is as critical to Canada’s use of this process as it is Taiwan’s. Government of Canada consultations must be accessible in both official languages, requiring either translation of statements for a single conversation, or two parallel ones. These are significant hurdles, but many other Government of Canada services already address them.

To establish a consultation process similar to vTaiwan, the Government of Canada may either license Pol.is or procure an equivalent. Context matters; the process may work in Canada as well as it does in Taiwan. But some consultations hosting roundtable conversations in every region almost certainly could be partially replaced with less expensive digital consultations. However, the vTaiwan process can never entirely replace other consultation processes. Considering its low risk, low cost, and high upside the Government of Canada should explore a pilot of this technology. Indicators of a pilot’s success include increased participation, more complex deliberation, and whether legislation based on points of consensus is passed, and those are only some of the potential benefits.

CONCLUSION

Technology has rapidly changed in recent decades, especially since Borges described the information in the Library of Babel as incomprehensibly massive for a human lifespan. The world is no longer analogue, and the library is no longer a fiction. The website LibraryofBabel.info uses algorithms to create every possible string of characters in $10^{4677}$ books, which is one followed by almost 5000 zeros books. While written by an algorithm and mostly waiting to be discovered, every possible page exists, from the next decade of Canadian federal budgets to upcoming best sellers. Moreover, digital

35 Government of Canada, “National Digital and Data Consultations.”
37 This discussion focuses on the novel, impactful platform. As well the other stages and components of Taiwan’s Consensus-Identifying consultation process seem more similar to efforts already in Canada.
38 While LibraryofBabel.info contains the permutations for every possible page, it does not have every possible combination of books. Flood, “Virtual Library of Babel”, and “LibraryofBabel.info”.
technologies are referenceable in the way Borges’ fictional library never could be, and specific pages can be digitally recalled with a reference to a room, shelf, and book.39 Although it was never searched for or found, the algorithms on LibraryofBabel.info previously wrote this essay.40 Similarly, the public service should reflect on Coleman and Götze’s argument that while public expertise exists, the challenge is to find it.41 This task is now easier thanks to new technology.

39 Specific search terms generate a reference code of numbers and letters with an algorithm. This reference code is not a specific address like a URL as much as it is a key that can generate a location in the digital library.

40 A caveat: the LibraryofBabel.info limits references to 3200-character pages, so only a portion of this essay would be referenced in one location tag. Multiple tags could contain it in full, excluding formatting, capitalization, and most punctuation.


42 This essay was previously written by the algorithms at LibraryofBabel.info. For convenience, the location in the library is referenceable by a URL I created, https://libraryofbabel.info/bookmark.cgi?an_algorithm_previously_wrote_this_essay. It also can be referenced by its “physical” location: page 58 of volume number 15, shelf 3, on wall number 2 of the hexagonal room:

2hlczvbq9778v1j3ra0cklq55bxyyqvacgb9de1pnw141lww2v2dcpd4r493hdm298is3i8syas4prgaya86hikyvkvdzi59htlff04k5agupotboyjic003m3w3t8y21e9cpi85ysysshx7r9ymq9p57wj7iemkx2spgcx94f9wshitr12x4pqk0e089x3jithwzov1w1u488qde1oha7k7csygun699tbsb4canoou72 FirebaseAuth36y6x6y92185mks01j9btu0uw7hlyft5esk01kwab3u15x1021lnz52ds1ljjg0vstflsnoguvf766vkcmw8dmit1zyqfplgw4wpkz2wp7x74dl6qij56om6l51nr5ympms75r85stz9j14ezw4hwpdpzmtvznh30mdazy58r5t0499tk04hhyuv45y938hrceyot78460a57v6bl73ndlwrl67n97j0d7014037fwm59md6df6850aypzvuv66kbine40dke73786wjk7gnacuxw676err15cpcnd3omcrbywpemv797u2arueo01c3rbjxbcdof05syjpyqvwxh85say8eo6ywedts05umjlfhx24xt1959zi5jmhzmbmh4yheeqxg3xeveqac6g0fmy8hyq3d9sxm04d1g2hb2lzlm66uas353ctnqfclsc8l7tv033cuvf4d26qs0julhry63wuw8trptq898417kwbemlyu733x33utyd3x0j0fs0db9qy6eomk1lcreozdpxiouaijm790yi3dfkqg1qui23abazaw679qdxaf672065psk50jtpz2ns5w857norum5u1rpoaedjffwkd1lwon0gi7xibiofvlzttbzs9abqsjrq392c0m69nn01jls13y67wnfymw76w6dua046drk022kqkatnq397ygi51skcr7snmjphd1jh5k3dhehiplpk6wvvb56beled97phzx17isips1kbxex89kh211v2kpfgy476174cglszbxm0ryd5au6cujwtnh3wwngwr2kfq7299br5qen9qgqgq3dmbnwqipx47b7i97c3fs0yqmaiqdf9ikr0uarofcpypkx3gwoua914tzcapprrkhkv3x9guxys8247wiwfsyq0v603hdhth29pva14yiple87m7gq0pjroc6wc4q8767ins8jv020akvplpvw7cen7x3ingnv29aj525xrfpp069995dhd0d5cdkl1kkxyxv44yclpx3755roc0dgwpq23xnc6b2r3k9i23d2402eczpkrm09awoabnhm775audp7x12756nnvuit56d3p970huwp90vip4x13er6qf63j014hurwy7c5f636k0sujh1go9l1rdzkw253anwabqmdcmib7s6lojoto0fxungvohgr6xzk599033l8an38m3k7n71793xi356��bcr3a349fzdld9hr94dsj59765trologkax2c2ve5pa0eask3asa26cagtwosagvud3id421y123q3meudyd1cmwrwuyfak3snrifdlnms93m41e4izfrz5cdow9gb6gzt8622qiq7x7kosolffgwfrwsgygrr8ylahz811jx8lalv7f6qpv0d6ebu336lxtf8petad9uxauped08i661npeeyt455swv918u2w5cr3032gfh3taundzi5t xgbijvz8cg9uv8usvs33p63xvdzdl493p4wklw5pqvzjcpa79negtazecu9j94pb7nquge7e3pxlv0jvyejw0g43l34x6f9mg01zdjpj6i5s0999irj3asapheshdm7taab828bh1xmlguzzq2d9jicls2i2g7trqwa3k50gc5m2084xi3jnx9ew6933cnuwzjwvpryvwqouqua3nlgndfzazzq9ons0luxa0155mma6uytxvy01ly2sgfj5s7s67j7pnrfgqj6mab6mkptvwrkd5zf632zflsx4twv1isqzj3s5yvgdugatwq0ig8t5i04hrbkipiy029809e8886nvdoca6ejy0zm3vcdbf509g12un7r14gr44j45ieqfr0bg0hi1bapq31uncentd3yvri1u7br3zr51fc6asbmz956w6towulcrf09xyi3yjev5i5dph0dv1bvkjq3ikaluk008swh0lgul7hir380777y7nbkysybux780hquyr67636rpyfzqyj0cm0x1j9psytih5resjh0jfrhr0f05jgyl6uyt6mmer0ng34h561x72fsxhqsbe2j3lydkm4h9kb0t0j3y1vok3fioso63xqswb55j3ezychndk99hg73yypo5z39nqnmrdckwynyp40oj03uuw0eeggvrrx934d3c85wkgairoybo65a6flw371vue84bd319n656lgwxy17viiqduc00xyt3oo32x295765s153ae30tg95im5vnoyvo8d5m5dgtq167q6omasqfous6uopvedw7ly0jpjm0f0oiprodupfl6en34udsqy70mlswbt1zqyfym68154mm4lwitjw67klb57h1191wi7dydvk782am5uyl25m5xmdzjztm2325r64ah7883eavwzrh2cuh8797ojusuq3cv3lykja0u2j3f1btf2kdb090lkd3480gas2271kup7p849k4phx3d37ut0kskzckiezdiwel2vypz5068og1xt1ggbdl8fgly7dlocofndar2adu0njxuaq6mpxrf2kzqfogzycfocf32j2cemzbdzvwmvn58irvg8if6zpl3fswlar61lw19qmucepafyacepn1f793jyg9ud8nn78bc181vxvymturmm4u9mg0xyevkjvkhd0zhrs20un1e36lx7qfdrq5udwcfvmttwl8th7mpzj9meg5e0l1cx3uujelkwkskweusy0p6ynzdgozo2g46im0eleqytmer508h8419bq5nfs8cyorheoiobahdw54w1ltjvvr18clbg1wha
BIBLIOGRAPHY


   https://www.ted.com/talks/clay_shirky_how_the_internet_will_one_day_transform_governmen
t?language=en.

   December 2018. https://open.canada.ca/en/content/third-biennial-plan-open-government-
   partnership.

Wernick, Michael. “Annual Report to the Prime Minister on the Public Service of Canada”. Privy

Wright, Scott, and John Street. “Democracy, Deliberation and Design: The Case of Online
   Discussion Forums”. New Media & Society 9, no. 5 (October 2007): 849–69.