The *other* Cambridge analytics: Early ‘artificial intelligence’ in American Political Science

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Pre-print 14 April 2020

Abstract

Harold Lasswell, quoted in a 1961 issue of Harper’s Magazine, described the Simulmatics Corporation as the “A-bomb of the social sciences.” Simulmatics had attracted his attention after publicizing its use of computer modeling to predict public opinion for the 1960 Kennedy Presidential Campaign. A preeminent figure in the American academia, Lasswell’s quotes reflects the long promise of “artificial intelligence” in a broad sense as a technology to better *know* politics and populations. Simulmatics was one application of this research agenda developed at MIT along with Project Cambridge. These under-studied cases are a needed counterpoint to theorize the contemporary applications of machine learning and deep learning for political management as popularized by the defunct psychographics firm Cambridge Analytica.

Building on the pre-conference’s periodization of AI from rule-based to today’s temporal flows of classifications, I distinguish modern AI epistemology (machine learning and deep learning) from its predecessors through two key applications at MIT, the Simulmatics Corporation and its academic equivalent Project Cambridge. Drawing on archival research, I analyze the constitutive discourses that formulated the problems to be solved and the artifacts of code that actualized these projects. Simulmatics Corporation and Project Cambridge marked an important passage point of the cyborg sciences into politics and governance, integrating behaviourism with mathematical modeling in hopes of rendering populations more knowable and manageable. In doing so, these other analytics at Cambridge erased the boundaries between artificial intelligence and political intelligence, an erasure necessary for AI to be seen as a political epistemology today.

Keyword: data; politics; cyborg sciences; Ithiel de Sola Pool; data sciences; media history

Artificial intelligence (AI), we are led to believe, will soon be weaponized in a new information war. Such speculation happened in the aftermath of Cambridge Analytica and its shadowy use of data in politics (cf. Chesson, 2017). As one popular opinion piece by Berit Anderson (2017) warns, the infamous global consulting firm “is a piece of a much bigger and darker puzzle—a Weaponized AI Propaganda Machine being used to manipulate our opinions and behaviour to advance specific political agendas.” Better models of voter behaviour will “prey on your emotions” by varying messages to your current state of mind. Future campaigns may have “250 million algorithmic versions of their political message all updating in real-time, personalized to precisely fit the worldview and attack the insecurities of their targets.” It is not hard to imagine a coming dystopia where AI undermines democratic free will.

How could AI be so easily imagined as a political weapon? How could developments in machine classification be considered relevant to politics? Especially when Cambridge Analytica and other applications are what Dave Karpf (2016) calls bullshit. Further evidence of what Jesse Baldwin-Phillipi (2017) calls the myth of data-driven campaigning. Bullshit and myths overstate the power of these tools, allow them to be positioned as weapons, and convince parties and politicians to buy them – as Cambridge Analytica did in convincing the world its tools worked and influenced elections.

These fears confuse the present too. Artificial intelligence is already part of political campaigns and has been for a while. In 2018, Blue State Digital (BSD), a leading digital political strategy firm, announced a partnership with AI startup Tanjo (Blue State Digital, 2018). BSD introduced the collaboration in a blog post, explaining that “AI is all around us, creating breakthrough innovations for companies and consumers alike.” Alike is an apt way to describe the benefits of the technology. Tanjo uses AI, or what it calls Tanjo’s Automated Persona (TAP), to behave like humans. Where message testing usually requires real people,

Tanjo creates audiences on demand. TAPs, Blue State Digital continues, simulate “humans’ distinct personalities and unique interests” to “predict how they’ll react to content.” Whether TAPs work as promised is not my question here nor is whether these *fakes* will undermine democratic trust. What I seek to explain is how we came to believe that humans – especially their political behaviour – could be modelled by computers in the first place.

My chapter synthesizes how innovations in Political Science beginning in the 1950s led to the conditions of possibility for artificial intelligence in politics today. Building on this book’s focus on the history of AI from rule-based to today’s temporal flows of classifications, my chapter offers provide a genealogy of artificial intelligence as a political epistemology.

Through media genealogy, my project takes a broad view of media, following communication theorist Alexander Monea and Jeremy Packer, who define media as “tools of governance that shape knowledge and produce and sustain power relations while simultaneously forming their attendant subjects” (Monea & Packer, 2016, p. 3152). Media genealogy examines “how media allowed certain problems to come to light, be investigated, and chosen for elimination and how media aided in the various solutions that have been enacted” (Monea & Packer, 2016, p. 3155). Computers, as this chapter explores, came to be a solution to the problems of information war, the utility of the field, and the uncertainties of public opinion.

Over fifty years ago, a new wave of social scientists and programmers, part of what I call the New Political Science (White, 1961), began to experiment with computer simulation as a proxy for public opinion and government behaviour. These experiments did not stay in academia. American federal agencies and the Democratic Party, briefly, funded these experiments. As a result, digital simulation, forecasting and modelling became part of new approaches to political systems reformatted as cybernetic systems, or what another important figure in the New Political Science, Karl Deutsch (1963), called in his book the Nerves of Government. Building on Orit Halpern’s (2014) expansive history of the implications of

cybernetics to politics, one could say these nerves of government prefigured the neural nets now sold to Blue State Digital.

In trying to navigate the scope of this change, I focus on what Donna Haraway (1985) calls *breakdowns*, in this case, between computing and politics. These breakdowns happened at MIT: the Simulmatics Corporation and its academic successor Project Cambridge. Drawing on archival research, I analyze the constitutive discourses that formulated the problems to be solved and the artifacts of code that actualized these projects. Simulmatics Corporation and Project Cambridge, the *other* Cambridge analytics, integrated behaviouralism with mathematical modelling in hopes of rendering populations more knowable and manageable.

My chapter begins by following developments in Political Science that herald Simulmatics and Project Cambridge as major advances in the field. Harold Lasswell, in particular, encouraged the application of computing in the social sciences as a new kind of weapon to fight what we would now call an information war (a continuation of Lasswell's work in psychological warfare). If these desires were inputs for computers, then Simulmatics and Project Cambridge were the outputs. These projects re-formatted politics to run on computers, and, in doing so, blurred voter opinion and behaviour with data and modelling. These breakdowns enabled computers to be simulate voters and enabled today's practices of what political communication scholar Phillip N. Howard (2006) calls *thin citizenship* – an approach to politics where data and now the insights of AI function stand-in for political opinion. In doing so, these other analytics at Cambridge erased the boundaries between mathematical states and political judgments, an erasure necessary for AI to be seen as a political epistemology today.

Moody behaviouralists and the New Political Science

By the early 1960s, a mood had set in political science (Dahl, 1961). This mood resulted from deliberate work of researchers who desired a more scientific and objective field,

complementary to the physical sciences. Some proponent voices included Harold Lasswell, Ithiel de Sola Pool and Karl Deutsch, themselves influenced by the work of Oscar Morgenstein, John von Neumann and Herbert Simon in economics and computer science (Amadae, 2003; Barber, 2006; Cohen-Cole, 2008; Gunnell, 1993, 2004; Halpern, 2014; Hauptmann, 2012). Advocates sought to aid government, particularly the US government, in what was a new turn in the long history of the social sciences as a state or royal science (Igo, 2007, p. 6). The distinguished political scientist Robert Dahl would call this a “behavioural mood”. Critics would call it the New Political Science.

Dahl described behaviouralism¹ as a mood because it was hard to define. He wrote, “one can say with considerable confidence what it is not, but it is difficult to say what it is” (1961, p. 763). The closest he came, in his 1961 review of behaviouralism, was a definition from a lecture at the University of Chicago in 1951 by prominent political scientist David Truman. Truman defined political behaviour as “a point of view which aims at stating all phenomena of government in terms of the observed and observable behavior of men” (p. 767). Truman’s definition minimized resistance to future applications of computing. If behaviour could be stated as observations, these observations could be re-stated as data. Looking back, behaviouralism contributed to that breakdown between human and computer intelligence that Katherine Hayles describes as virtuality, “the cultural perception that material objects are interpenetrated by information patterns” (1999, pp. 13–14). The emphasis on observation may seem rather mundane now. That was Dahl’s point. As he concluded, “the behavioral mood will not disappear then because it has failed. It will disappear because it has succeeded,” incorporated into the field (Dahl, 1961, p. 770).

The behaviouralism mood had been a long time coming. Dahl gave six reasons for this

¹Behavioralism here should not be confused with the similarly named political behaviourism (Karpf et al., 2015, p. 1892n5).

turn toward behaviouralism:

1. The influence of the University of Chicago. Dahl mentions Harold Lasswell (who supervised Pool there) and Herbert Simon;
2. The influx of European scholars after World War II, such as Paul Lazarsfeld (who Dahl cites as one of the first to develop the scientific approach to politics continued by behaviouralism). Karl Deutsch, I suggest, is part of this trend though Dahl does not mention him;
3. Wartime applications of the social sciences (cf. Simpson, 2003);
4. Funding priorities of the Social Science Research Council that focused on more scientific methods (Ross, 1991);
5. Better survey methods that allowed for a more granular application of statistics that aggregated data (like the books *The People's Choice of Voting*); and,
6. The influence of American philanthropic foundations (cf. Hauptmann, 2012).

These developments fit with the development of scientism, a faith in scientific knowledge's power, running through 20th century American social sciences.

Historian Dorthy Ross attributes the turn toward scientism to the leadership of Charles Merriam. The University of Chicago professor helped design the social sciences after World War One. Initially engaged in progressive politics, Merriam turned away from politics and the progressive movement led him to a view of the social sciences that mirrored the natural sciences. According to Ross, Merriam's late program of research "proposed a science defined by 'method', orientated to 'control' and sustained by organized professional structures to promote research" (1991, p. 396). Merriam's program made its way into the New Political Science through his disciple Harold Lasswell who became "the heir of Merriam's technological imagination" (Ross, 1991, p. 455). "Lasswell became the father of the 1950s behavioural movement, in political science, an extension in elevation of scientism in the profession, and by

that lineage Merriam was rightly the grandfather” (Ross, 1991, p. 457). The New Political Science manifest Lasswell’s vision for the field, and created the possibilities for computing as a political epistemology.

Harold Lasswell and the A-bomb of the Social Sciences

Harold Lasswell was a defining figure in political science, communication studies and policy studies. Lasswell not only led American academia, he also collapsed divisions between the state and research. During World War II, Lasswell helped formulate techniques of psychological warfare at the War Communications Division of the Library of Congress (along with his student Ithiel de Sola Pool) (Simpson, 2003). After the War, Lasswell was a leader in American social sciences and became president of the American Political Science Association (APSA) in 1956.

Lasswell outlined his vision for the field in his inaugural speech. Building on Merriam’s attempts at integrating the human and natural sciences, Lasswell began by declaring, “my intention is to consider political science as a discipline and as a profession in relation to the impact of the physical and biological and of engineering upon the life of man” (1956, p. 961). Behaviouralism would be his way to harden the scientific foundations of the field at a time when the American government needed insights into growing complexity and risk. He continues, “It is trite to acknowledge that for years we have lived in the afterglow of a mushroom cloud and in the midst of an arms race of unprecedented gravity” (1956, p. 961). Political science, particularly its behavioural mood, would be instrumental in this arms race.

War was a key frame to legitimate Lasswell’s vision for Political Science. As Nobel prize-winning American experimental physicist Luis Alvarez suggested to the Pentagon in 1961, “World War III... might well have to be considered the social scientists’ war” (quoted in Rohde, 2013, p. 10). The goal was not necessarily waging better war rather waging what

Lloyd Etheredge (2016) called a ‘humane approach’ to politics (cf. Wolfe, 2018). Better weapons might lead to more humane wars. Speaking to journalist Thomas Morgan in 1961, Lasswell later suggested, “if we want an open society in the future, we are going to have to plan for it. If we do, I think we have a *fighting* chance” [italics added] (quoted in Morgan, 1961, p. 57).

What would be the weapon in this fight? What would be the weapon of choice for behavioralists and Lasswell’s followers? If the atom bomb was the weapon of World War II, then the computer might be the weapon of World War III. As Jennifer Light notes in her history of computing in politics, “first developed as calculating machines and quickly applied to forecasting an atomic blast, computers soon took on a new identity as modelling machines, helping communities of professionals to analyze complex structures and scenarios to anticipate future events” (2008, p. 348). At the time of Lasswell’s speech, computers had gone mainstream. In 1952, CBS contracted the service of Remington Rand and its UNIVAC computer to forecast election night results. After UNIVAC predicted an overwhelming Eisenhower win, CBS decided not to air the prediction. It turned out to be correct. By the next election, all major broadcasters used computers for their election night coverage (Chinoy, 2010; Lepore, 2018, p. 559). In tandem, the US Census and the Social Science Research Council had begun to explore how computers could better make available data for analysis (Kraus, 2013).

Social sciences would create their own weapons too: the Simulmatics Corporation. It was an “A-bomb of the social sciences” according to Harold Lasswell, a breakthrough comparable to “what happened at Stagg Field” (quoted in Morgan, 1961, p. 53). Lasswell was referring to Simulmatics’ work on the 1960 Kennedy campaign, where computer simulations were used to advise a political party on how voters might respond to issues. Lasswell sat on the company’s first Advisory Council along with Paul Lazarsfeld, Morris Janowitz and John

Tukey. The project was a culmination of the coming together of scientism, behaviouralism and the New Political Science.

Simulmatics Corporation: the Social Sciences' Stagg Field

The Simulmatics Corporation began as a political consultancy in 1959. The project probably has a few histories to be written and most of what's known about the company comes from its academic members, Ithiel de Sola Pool, Robert Abelson and later Samuel Popkin. According to their accounts, William McPhee, coauthor of *Voting: A Study of Opinion Formation in a Presidential Campaign* with Bernard R. Berelson and Paul F. Lazarsfeld,² had begun to consider the possibility of using computers to simulate public opinion at the Bureau of Applied Social Research at Columbia University. In early 1959, McPhee, Pool and Abelson presented a plan for a new approach to the simulation of public opinion to businessman Edward Greensfield. The project eventually gained the support of the Democratic National Committee to prepare a report using their methods. Facing Richard Nixon and his advisors at the oldest political consultancy firm, American Campaigns Inc., the Democrats took a chance and accepted the pitch. Simulmatics delivered its first report just before the Democratic National Convention in the summer of 1960 (Lepore, 2018, pp. 598–599).

Simulmatics drew upon on forecasting and survey data along with political behaviouralism. First, Simulmatics attempted to predict voter attitudes based on historical data. By 1959, political scientist Harold Gosnell (a collaborator with Merriam) and pollster Louis Bean had helped popularize the idea that elections could be predicted by statistics. Bean was the lone pollster to predict the 1948 election success of Truman, beating his rival pollsters Elmo Roper and George Gallup (Rosenof, 1999). Rather than use opinion polling, Bean *forecast* the election results using demographic and statistical trends to measure the

²The book focused on a typical town Elmira, New York similar to other *Middletown* studies discussed by Susan E. Igo.

political tides. These tides, Bean wrote,

are like the unsubstantiated sea serpent that appears periodically along the Atlantic coast. They are discussed every year by popular political analysts and commentators, but without much factual demonstration. (1948, p. 12)

Voting trends were some facts Bean analyzed to measure these tides in his 1948 book *How to Predict an Election*, published with the encouragement of Paul Lazarsfeld.

Where Bean used statistics to plot voter trends, Simulmatics could use survey data because of the maturity of the field. The production of public opinion had advanced considerably since the straw polls at the turn of the twentieth century. Surveys about the average American – usually assumed to be a white male – had gained institutional legitimacy, necessary for informed market and government research (Igo, 2007). Ongoing survey research provided a new way to measure the political tides and Simulmatics made use of newly public data collections. In 1947, pollster Elmo Roper donated his data to Williams College, creating one of the first repositories of social science data. By 1957, the collection had become Roper Public Opinion Research Center. Pool and other arranged to have access to the surveys at the Center, under the agreement that their opponents in the Republican Party had the same access (who did not use the access).

Behaviouralist theory animated this data to make forecasts of voter behaviour. Drawing on Bernard Berelson, Paul F. Lazarsfeld and William McPhee (1954), Simulmatics proposed “a human tendency to maintain a subjective consistency in orientation to the world” (Pool et al., 1964, p. 9). Consistency, Pool and his colleagues explain, can be rather difficult to maintain in politics. Voters face many decisions that might cause inconsistencies. A desire to maintain consistency might cause a voter to switch party support, usually late in the campaign. In other words, the elusive swing voter could be found and modelled by looking for voters with contradictory opinions and forecasted whether the *cross-pressure* might cause a change in

The synthesis of these trends led Simulmatics to develop a simulation that animated survey data to predict changes in voting due to the interactions between issues and social variables. That sounds pretty mechanical, but the inner workings of the project was human after all. Before the simulation, Simulmatics made numerous interpretations to create a workable database of political attitudes. Simulmatics spent the summer of 1959 integrating the code books and punch cards from sixty-five³ surveys conducted between 1952 and 1960. It was an “arduous task” that resulted in what might have been the first political database (Pool & Abelson, 1961, p. 168).

* Key: R means Republican; D means Democratic; I means Independent

A means professional, executive, and managerial occupations; B means white-collar occupations; C means blue-collar occupations

Urban refers to metropolitan areas exceeding 100,000 population; town refers to communities between 5,000 and 100,000; rural refers to places under 5,000

Table 1 – Structure of the Simulmatics 1960 Model of the American Electorate reproduced from the original

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The matrix arranged the opinions of 480 voter types on 52 issues. The 480 voter types were “defined by socio-economic characteristics.” Pool and Abelson explained, “a single voter type might be ‘Eastern, metropolitan, lower-income, white, Catholic, female Democrats.’ Another might be, ‘Border state, rural, upper-income, white, Protestant, male Independents.’” In effect, each voter type was a composite of a region, race, gender, and political disposition. Notably, voter types did not include education, age, or specific location. Voters types, instead, fit into one of four abstract regions. Each voter type had ‘opinions’ on what Simulmatics called *issue clusters*. For each intersection of voter type and issue cluster, the databank recorded their occurrence in the population and their attitude (Pool et al., 1964, pp. 30–31).

The matrix masked the arduous interpretive work that created it. Voter types themselves only approximated the survey results, since as Pool, Abelson and Popkin write, “it will be noted that we did not use all possible combinations of all variables, which would have given us some 3,600 voter types, many of which would have been infinitely small” (Pool, Abelson, & Popkin, 1964, p. 27). Issue cluster was “private jargon” that referred to their interpretation of multiple survey responses about opinions on political matters; “most of these were political issues, such as foreign aid, attitudes toward the United Nations, and McCarthyism” (Pool, Abelson, & Popkin, 1964, p. 27).

Their first report focused on African Americans, marking an interesting change in the object of public opinion. Prior survey research largely ignored African Americans. Historian Susan Igo notes that the dominant pollsters George Gallup and Elmo Roper “underrepresented women, African Americans, laborers, and the poor in their samples” (Igo, 2007, p. 139). The first *Middletown* survey of the 1920s excluded responses from African Americans (Igo, 2007, p. 57). Here marks an important turn where race became a significant

variable that divided calculations of the American public. The report found that non-voting was less a concern than expected, and that African Americans might vote more frequently. For Pool and others, the report proved that their data could provide insights into smaller subsets of the American population.

Cross Pressure Patterns

	Republicans	Democrats	Independents
Protestants	(1)	X (2)	(2)
Catholics	X (4)	(3)	(3)
Other	(4)	(5)	(5)

Table 2 – Reproduced from Pool, Abelson and Popkin, 1964, p. 46

While the first report did not involve any computer simulation, after the convention the Kennedy campaign commissioned three other reports “on the image of Kennedy, the image of Nixon, and foreign policy as a campaign issue” (Pool et al., 1964, p. 18). These reports drew on the behavioural theory of cross-pressure discussed above. To study the religion issue, Simulmatics grouped its “set of 480 voter-types into 9 possible cross-pressure subsets arising from a 3 x 3 classification on religion and party” reproduced in Table 2 (Pool et al., 1964, p. 46). Cross-pressure here meant the tensions between party and religion. For each subset, Simulmatics predicted behaviour with special attention to cells marked with X, Democratic Protestants and Republican Catholics. Some simulations were simple. Protestant Republicans, for example, “would vote exactly as they did the last time” (Pool et al., 1964, p. 47). For most other groups, Simulmatics developed a unique equation to estimate turnout that required both a guess about probable behaviour and what data could be an effective proxy for anti-Catholicism given the lack of a direct question in its sample of surveys.

Simulmatics “disregarded” the religion of African Americans (Pool et al., 1964, p. 53) unlike the unstated “White” voters classified by religion and party. These accommodations were a different kind of interpretative work. Where survey research might have discarded non-White voters, Simulmatics re-inscribed races as having different operating assumptions in the model.

Though much of the animation was manual, Simulmatics’ work here marks the beginning of when interests and values modelled human behaviour. These models in turn helped campaigns forecast reactions to future positions and platforms. Behaviour, in other words, could be calculated and stand-in for stated opinion. A moment where the past behaviour of individuals became autonomous, capable of behaving in ways never encountered by the fleshy double.

These innovations had a modest effect on the campaign, if any. Simulmatics did not change campaign strategy and there is no evidence that subsequent campaigns of the 1960s turned again to simulations (Lepore, 2015). Pool never appears in iconic accounts of the 1960 election. Pool and Abelson, reflecting on the campaign, note that “while campaign strategy, except on a few points, conformed rather closely to the advice in the more than one hundred pages of the three reports, we know full well that this was by no means because of the reports. Others besides ourselves had similar ideas. Yet, if the reports strengthened right decisions on a few critical items, we would consider the investment justified.” (1961, pp. 173–174). While Simulmatics never worked on another political campaign, it did become deeply involved in the Vietnam War. Simulmatics earned approximately \$24 million USD in ARPA contracts doing data science such as gauging public opinion about US occupation of Vietnamese villages (Rohde, 2011). In its ten-year run, Simulmatics modelled the behaviours of Americans, Venezuelans and the Vietnamese. But by 1969, Mathematica acquired the corporation as it neared bankruptcy ending its run.

Simulmatic's long afterglow

Simulmatics generated some public debate about the consequences of political simulation. Its misuses became the plot of the novel *The 480* by Eugene Burdick. Named after Simulmatics's 480 voter types, Burdick described a presidential campaign using computer modelling to manipulate the public (not far off from the future worries found in this chapter's introduction) (C. W. Anderson, 2018, pp. 89–92). Historian Jill Lepore nicely captures Burdick's criticism that: "if voters didn't profess ideologies, if they had no idea of the meaning of the words 'liberal' or 'conservative,' they could nevertheless be sorting into ideological piles, based on their identities" (Lepore, 2018, p. 599). Simulmatics thought otherwise. Writing in the introduction to the 1964 book about the project, Pool and his collaborators Robert Abelson and Samuel Popkin note that the project "has been subject to a number of sensational newspaper and magazine articles and even of a work of fiction" citing Burdick and promising their book would "correct these lurid fantasies" (Pool et al., 1964, p. 1).

The project also had its critics in academia, inspiring the phrase the New Political Science. The phrase came from E. B. White, former dean of the New School. Writing in the summer 1961 issue of *Social Research*, White argued these tools enabled better manipulation of voters. He later pointed out Simulmatics as a key example of the New Political Science. White did not think voter manipulation was new, merely improved. As he wrote, "there is nothing new in manipulated opinion and engineered consent. . . . Even the sheer bulk of distortion is not altogether news, merely more refined." "What is new," White continued, "is the acceptability, the mere taken-for-grantedness of these things" (White, 1961, p. 150). What he called a New Political Science⁴ accepted these innovations as mere tools and not profound revisions to the discipline's normative project. He worried this 'value-free' political science

⁴Not to be confused with the Caucus for a New Political Science organized at Annual Meeting of the American Political Science Association in 1967. This new political science explicitly opposed the rise of behaviouralism and state sponsored research (Dryzek, 2006).

would legitimate social manipulation. Pool rejected these claims in a rejoinder published the following year in the same journal (Pool, 1962), and White defended his argument in his own response (White, 1962).

In spite of these critics, Simulmatics was celebrated in the behavioural sciences. A 1965 special issue of the *American Behavioural Scientist*, only eight years old at the time, celebrated the work of Simulmatics as the “benchmark in the theory and instrumentation of the social sciences” (de Grazia, 1965, p. 2). Articles included Simulmatics studies of business systems, communications, international relations and a postscript on the 1964 election. Harold Lasswell wrote the introduction to the special issue entitled “The Shape of the Future.” In no uncertain terms, he explained that the power, and danger, of Simulmatics methods was when “new advances in technique make it possible to give the leaders of rival governments, political parties and pressure groups improved advice for managing their campaigns to influence public judgment of candidates, issues and organization” (Lasswell, 1965, p. 3). Perhaps in response to critics of this power like White and Burdick, Lasswell continues, “officers of the Simulmatics Corporation are acting responsibly” (1965, p. 3). What is missing is any sign that Simulmatics would be bankrupt four years later and punch cards would be burned in opposition to this political technology.

In spite of its commercial failure, Simulmatics was the leader then in a move to use computers for forecasting and model testing in the social sciences. After the Kennedy campaign, articles about the Simulmatics Project appeared in a few publications on the potential of simulation and modelling in the social sciences (Guetzkow, 1962; IBM Scientific Computing Symposium on Simulation Models and Gaming & International Business Machines Corporation, 1964). Jay Forrester, also at MIT, developed the DYNAMO (DYNAMIC Models) programming language at the MIT Computation Center that eventually resulted in the 1972 report *Limits of Growth* (Baker, 2019). MIT’s Compatible Time Sharing

System (CTSS) ran simulations scripted in GPSS and OP-3, another simulation language developed at MIT (Greenberger et al., 1965).

Given this aftermath, Simulmatics and its voter types should be seen as *one* predecessor to today's Tanjo Animated Personas. The similarities are striking. Blue State Digital explains that they are "based on data. This data can include solely what is publicly available, such as economic purchase data, electoral rolls, and market segmentations, or it can also include an organisation's own anonymized customer data, housed within their own technical environment". If data informs models, then Simulmatics signals an important moment when computation enabled a reevaluation of prior research. In its case, Simulmatics found value in the survey archives of the Roper Center. Today, TAPs are refined by a "machine learning system, along with a human analyst, [that] generates a list of topics, areas of interest, specific interests, and preferences that are relevant to the persona" to generate affiliations akin to issue clusters. Each TAP has a score attached to each interest, similar to the scores used by Simulmatics attached to voter types.

Political simulations, either in 1961 or 2019, promise something akin to *thin citizenship*. Phillip N. Howard (2006) describes thin citizenship as when data functions as a proxy for the voter. Blue State Digital explains that personas "are based on the hypothesis that humans' distinct personalities and unique interests can predict how they'll react to content. We can simulate these interests and conduct testing with them in a way that can augment, or sometimes be as valid as, results from focus groups and surveys." The utility to TAPs could just as easily be lifted from a Simulmatics brochure's discussion of Dynamark, a computer program "used to determine the relative value of different promotional activities and their effects upon the attitudes of different subgroups of the population" [MIT Archives].

TAPs, however, promise to be much more integrated into the campaign that Simulmatics even could achieve. Even though Pool, Abelson and Popkin suggested that the 1960

experiment had merit by providing “on demand research concerning key issues” (1964, p. 23), the experiment seemed at the margins. Further, Simulmatics only relied on survey research for its political simulation. The final case of Project Cambridge provides a way to understand the scale of computers as a political epistemology.

Project Cambridge

Project Cambridge was part of Pool’s ongoing work on political simulation. As Simulmatics suffered financially, Pool began to collaborate with a professor returning to MIT, J. C. R. Licklider. Licklider is one of the key figures and funders of modern computing. By 1967, Licklider had returned to MIT after working at the Advanced Research Projects Agency in 1964 and then IBM. His research at the time nicely complemented Pool’s own interests in data and polling. Licklider was developing the idea of computer resources that he would come to call ‘libraries of the future’ and advocate for better connectivity to the databanks housed by information utilities not so far off from the design of the seminal ARPANET (Licklider, 1969). Where Simulmatics showed the utility of survey research for computer simulation, Licklider recognized the promise of digital data in general for computing. The two, then, began to collaborate on a project to better collect and operationalize data in government and politics, which became known as Project Cambridge.

Project Cambridge integrated, or at least proposed to integrate, computational social science into decision-making. Its first goals sought to develop better tools to manage and analyze data that, overall, would “be a powerful methodology for the behavioural sciences.” When integrated into public policy, these tools would aid “in the understanding of human interactions and in the prediction of the performance of social systems” [MIT ARCHIVES]. Perhaps most telling is the list of data sources in its initial proposal that included data collected from its various members such as:

1. International data sets on public opinion, national statistics and demographics,

communications and propaganda efforts, as well as armament spending; and

2. Domestic data sets on US economic statistics and demographic statistics, including public opinion polls from the Roper Center that supplied data for Simulmatics.

Project Cambridge then was an attempt to construct a unified system to manage databases at the time. A project like Simulmatics would be just one of many databases in the system, ideally used in connection with each other.

The project sought to mobilize or animate its databases as interactive models. This side of the project had a cybernetic air not unlike the artificial TAPs. Looking to early work in artificial intelligence for inspiration, the project called these models *agents*. Project Director Douwe Yntema, as Andrew Mamo writes in an excellent dissertation,

noted the similarity between this agent and the work of AI researcher Oliver Selfridge.

While this agent was by no means the autonomous intelligence that motivated the most hyped AI research, it grew directly out of the tradition of automating simple decision-making, and of giving machines the ability to direct themselves. (Mamo, 2011, p. 178; cf. McKelvey, 2018)

Project Cambridge, by 1974, included Pool's General Implicator that was a textual analysis tool as well as SURVEIR, a new data management tool for the Roper Center data. These projects proved to be more a reflection of statistical computing than artificial intelligence, but the desire certainly endured to use computers as a way to better model humans and societies.

The project also brought together many researchers associated with the New Political Science. Licklider served as principal investigator, but the project was led by Douwe Yntema, senior research associate in psychology at Harvard and senior lecturer at the MIT Sloan School of Management. These two, along with Pool, were only a small part of the massive academic project that listed over 150 participants, including Karl Deutsch, in its first annual report.

Such ambition was another trend of the 1960s. Beginning in 1963, the US Census Bureau and Social Sciences Research Council considered ways to convert federal statistics into databases for researchers. When made aware of the project, the press reacted poorly, raising privacy and surveillance risks. The Pittsburgh Post-Gazette, for example, ran the headline “Computer as Big Brother” in 1966. That the project ultimately failed in part due to this public reaction was a warning unheard by Project Cambridge (Kraus, 2013).

Project Cambridge was controversial from the beginning. As Mamo writes, Project Cambridge had two problems: “defense patronage, which ran afoul of Vietnam-era student politics, and the fear that collections of data and analytical tools to parse this data would erode individual privacy” (2011, p. 173). Computing was seen then, and perhaps again now, as a powerful tool of the state (Turner, 2006). Harvard withdrew direct participation in the project due to public outrage (Mamo, 2011, pp. 165–175).

While Licklider and Pool publicly made efforts to distance the project from the government, conceptually Project Cambridge resembled the kind of ‘on-demand’ research described by Pool. It also resembled the work of Karl Deutsch, where digital agents could become the nervous system to a new cybernetic vision of government. Deutsch was a member throughout the project and a member of the Advisory Committee on Policy at the time of the project’s renewal in 1971. He also defended the project against criticism from the student press about its relationship with the government and the Vietnam War. Writing to the Harvard Independent in the Fall of 1969, Deutsch argued, “At the present time, I think mankind is more threatened by ignorance or errors of the American or Soviet or Chinese government than it would be by an increase in the social science knowledge of any of these governments” (quoted in Mamo, 2011, p. 40). The computer was, in other words, the more humane approach to political realities.

Deutsch’s comments reflect his interest in improving the science of the social sciences. His

1963 book *The Nerves of Government* explicitly discusses the importance of models for the future of political science, moving from classical models to innovations in gaming and eventually to cybernetics. In fact, the book popularized cybernetics to the field. It ends with a flow chart labelled “A Crude Model: A Functional Diagram of Information Flow in Foreign Policy Decisions.” The diagram, according to Orit Halpern, was inspired by computer programming. She explains that in it there “are no consolidated entities, only inputs, outputs and ‘screens’ that act to obstruct, or divert, incoming data” (Halpern, 2014, p. 189). Where Halpern situates the chart in the larger reformulation of data through cybernetics and governance through neural networks, I wish to emphasize this diagram, the book and Project Cambridge as a shared application of cybernetic thinking to politics itself. This integration of computing as both a model and a screen for politics was integral to Project Cambridge. Indeed, a second draft of the Project Cambridge Proposal, before Harvard withdrew its institutional support, repeatedly mentions Deutsch and his approach to data as inspiration and a resource to be mobilized. In other words, Deutsch and Project Cambridge conceptually integrated simulation into the political system, as part of a collective intelligence or neural network designed to optimize governance.

Such close integration with government never amounted to much. The project was always in a bind. “It needed to claim a defence mission to satisfy the Mansfield Amendment and receive funding, but it also needed to deny that very same purpose in order to attract researchers” (Mamo, 2011, p. 172). It also faced intractable technical problems, such as developing on the experimental MULTICS operating system and, more practically, coordinating its hodgepodge of data, models and researchers into one unified research environment. This later problem became the project’s lasting contribution. Project Cambridge began part of the formulation of the computational social sciences. Simultaneously, Stanford University developed its own program for computational social

sciences the Statistical Package for the Social Sciences (SPSS), still in use today (Uprichard et al., 2008). Project Cambridge compared itself to SPSS, seeking to be a more radical innovation that became known as the Consistent System (CS) (Klensin & Yntema, 1981; Yntema et al., 1972). It was “a collection of programs for interactive use in the behavioral sciences” that included “a powerful data base managements systems. . . with a variety of statistical and other tools” (Dawson et al., 1980, p. 170). Though not as popular as SPSS or FORTRAN, Project Cambridge’s legacy enabled the crystallization of computational modelling in the social sciences.

While Project Cambridge had a direct influence on the tools of data science, it also furthered the breakdowns started by the Simulmatics Corporation. Simulmatics established that public opinion as data could be manipulated in a simulation that could have utility as an on-demand and responsive tool for parties and other decision makers. In one sense, this indicates a pre-history to the observed reliance on data to make decisions in campaigns, or what's called computational management (Kreiss, 2012). Project Cambridge further entrenched the New Political Science to funders, peers and the public as the vanguard of the field. Even as its ambitions outstripped its technical output, Project Cambridge created a consistency beyond its Consistent System. The project advanced the behavioural sciences beyond survey research into integrated databases. Such data promised to train computational agents that eased re-modelling the voter and populations as data that could train agents or other digital computational stand-ins.

Conclusion

Simulmatics and Project Cambridge as well as the history that led to their development offer a pre-history to artificial intelligence in politics. Through these projects, the utility of AI to politics became imaginable. In doing so, political science becomes what others call a *cyborg sciences* (Halpern, 2014; Haraway, 1985; Mirowski, 2002). This involving a changing view of

politics caused by using computers to view politics, or what Katherine Hayles calls a *reflexivity*. “Reflexivity is the movement whereby that which has been used to generate a system is made, through a changed perspective, to become part of the system it generates” (1999, p. 8). As Donna Haraway, quoting Marilyn Strathern, reminds me “it matters what ideas we used to think other ideas (with)” (2016, p. 12).

The other Cambridge analytics turn remodelled, what John Durham Peters calls the politics of counting. “Democracy,” Peters writes, “establishes justice and legitimacy through a social force, the majority, which exists only by way of math” (2001, p. 434). Numbers legitimate democratic institutions as well as represent the public majority back to the public. “[N]umbers are . . . uniquely universal and uniquely vacuous: They do not care what they are counting. Their impersonality can be both godlike and demonic. Numbers can model a serene indifference to the world of human things” (2001, p. 435). Simulmatics and Project Cambridge changed the numerical epistemology by integrating computers, data and behavioural theory. Democracy was still about the numbers. Ones and zeros, rather than polls and tallies, now functioned as political representation.

Re-formatting politics led to technical not democratic change. The blowback felt by Project Cambridge and Simulmatics demonstrates public concern about technology out of control, not in the public service. Those feelings were widespread in popular culture and only mitigated by the rise of personal computing (Rankin, 2018; Turner, 2006). Pool’s ambitions make the limitations of this cybernetic turn all the more apparent – a warning applicable to artificial intelligence. These problems are well stated in E. B. White’s critical article about the New Political Science. To Lasswell’s characterization of the Simulmatics as the A-Bomb of the social sciences, White asked “why political scientists want so much to believe that kind of statement that they dare make it”. He ends with perhaps the most damning of questions for the claimed innovation: “If Lasswell and Pool really believe that they have an A-bomb, are

they willing to leave its powers to advertisers?” (1961, p. 150). Pool did just that, selling Simulmatics to advertising and marketing firms as well as to the US military in Vietnam where the company reported on villagers' opinions of the American occupation.

We might ask the same questions for AI in politics? Indebted to a fifty-year history, benefitting from tremendous concentrations of capital – be it financial, symbolic or informational – and trusted to envision a new society through its innovations, the bulk of AI seems to be applied to better marketing and consumer experiences. Where is the AI for good, or a model for a better politics?

Perhaps the challenge was not that White was wrong, but that he could not offer an alternative as ambitious as the New Political Science. The challenge for critical AI studied is to find radical applications of AI in contrast to more routine applications. The alternative is to wish for simpler times as seen in White's own normative framework. White had strong opinions about the nature of democracy, so in rallying against a value-free political science he signals his own vision of politics as a rarified space of important decisions, similar to philosopher Hannah Arendt. As he writes, “of course a political decision takes a risk – but it can be considered irrational only if the voters do not care to consider the object of voting as related to the common good.” Political decisions matters, but won't matter “if we are educated to restrict reason to the kind of thing you use to decide whether to spend the extra fifteen cents for imported beer” (White, 1961, p. 134). White instead wants to return politics to an even more abstract and intangible space than the banks of a computer. The impossibility of his own vision for democracy makes it all the more essential to recognize the cold pragmatism of Pool and other seeking to use computers to produce a more ‘humane politics.’

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