COGNITIVE PROBLEMS OF POLLING TECHNOLOGY

Notes Toward an Ontology of "Opinion(s)"

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From time to time, serious people who follow movements of political thought, as well as journalists in print and electronic media, have expressed a recurring unease and uncertainty about the present state of public opinion, and the quality and accuracy of information available about it. Most often, that mood is not sustained beyond complaints about particular surveys done by polling organizations, the wording of poll questions, or partisan interpretation of aggregated responses. Compared however, to the size, scope, and output of the opinion polling industry, critical attention has curiously neglected the conceptual assumptions which underlie its contested work.

Can we decide on the actual presence or absence of general dissatisfaction and skepticism towards polling activities by conducting a national survey about opinion polling work? The question turns on itself. If research techniques are themselves in doubt, how then could we have confidence in the results?

But other, non-polled evidence suggests instead the accession of opinion polling methods to official status. Political types and governing officials commonly think and talk about changes or stability in public opinion in the terminology and orientation of quantified polling reports. In some quarters, public opinion, as realized in the numbers provided by standardized information technology, has now become synonymous with the very idea of public opinion.

Or does there remain a different, more elaborated realm of opinion(s), once recognized in human studies and still worthy of attention, perhaps to invite a shift in cognitive theory and ontology? Indeed, further reflection on

the nature and character of public opinion leads to examining the opposition between philosophical realism and empiricist nominalism as guiding theory for the opinion collecting enterprise, and the social framework of consciousness and articulated self-understanding from which *opinion* in its many forms, flows. What follows is an attempt to respond to yet unpolled questions about the scope and foundations of that research, and to demonstrate the limitations of the prevailing epistemology.

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National attitude surveys on political, social, or economic issues, conducted throughout the year, along with tracking polls months before a Presidential election, have become an issue in themselves. Opinion collecting, reporting, and consulting activities have grown into an enormous, multi-billion, integrated industry now reaching so widely into electoral and legislative politics that their influence on decision-making can no longer be untangled. It routinely presents the people of this country with misleading or truncated portrayal of their attitudes, beliefs, intentions, sentiments and expectations. In these troubled times, surely they need to know more about the biases built into polling technology, and how it can affect their participation in politics.

Among much else, opinion polling undermines citizen understanding of serious public problems and obscures the connections between them. Polling methods, taken together, assemble fictional majorities of agreement and satisfaction, while smoothing, filtering, and cutting short people's replies to read-off questions. Industry practice of calling up scattered "respondents," people totally unrelated and unknown to each other, insinuates a radical individualist model of the nation's population, as if it were composed of free-standing units who form and express opinions all on their own, in effect denying contexts of association and exchange in a democratic republic. Standard opinion survey methods also distract attention from, or merely look past, silent minorities of difference and conviction who should be heard.

The continued failures of polling practices accurately to reflect the national mind cannot all be examined in a single commentary, especially considering the extent of the activities of the opinion marketing industry.
It has established itself as a highly visible and source of useful information within the nation's political life, but we hear little about its internal workings.

Organizationally, it is dispersed, to include newspaper chains, TV networks (and media conglomerates of both), corporate advertising and market research firms large and small, policy institutes within universities, and well-funded, quasi-public foundations. Lobbyists, Party leaders, special interest and advocacy groups, consultants, product associations, government agencies, and corporate staffs that seek information on trends in public attitudes and expectations, routinely call upon research organizations -- some three dozen major ones -- to conduct opinion surveys not only about candidates or those already in political office, but for every sort of issue, problem, and favorite cause. Curriculum content in the schools, capital punishment, environmental regulations, single-sex marriage, gun control, genetic testing, assisted euthenasia, urban-rural sprawl, stem cell research, immigration reform, health care insurance, governmental programs, foreign trade policies, and much else are recurring subjects of polled attention. "Measurements" of opinion from surveys are converted into reports for circulation among sponsors along with brief summaries for media audiences on subjects of public concern, all to replace sensible public doubt with conclusions presented as clear and convincing.

From time to time, managers within the industry will admit to a few problems on how they formulate questions, and more recently have expressed worries about increased refusals by the public to answer a telephone interview, along with growing use of less reachable cell phones. "Generally speaking . . ." (to borrow one of their disarming phrases), polling organizations continue to present a well-rehearsed story of impartial scientists whose scholarly research provides summary information for decision makers about citizens' views not otherwise available, while offering the public a vehicle for self-expression. Unlike other professions, however, the scientist-managers of this extensive enterprise avoid publicly accessible discussion of outsider complaints about political implications of their work, or about its quality and scope.
What might some of those be? They include the failed dogma of random sampling, an empiricist cognitive theory, and continued problems in established methods, but they start where opinions are said to start, with the opinion emitter, or "respondent."

Constrained Exchange vs. Everyday Speech

Published summary reports of completed polls pointedly display differences of national opinion, but in reading any of them, we have to wonder what part of that difference is an artifact of polling technology itself.

Contact with responders is one of those artifacts, and highly vulnerable. Much of mainline opinion and attitude polling around the country is done not in face-to-face interviews with individuals, singly or in so-called focus groups, but by telephone calls to where respondents live. While that method of harvesting opinions has been practiced over the years to save time and expense, the technique is less than satisfactory, both in quality of recovered material and the anomalous character of the exchange.

With expectations for ready consent, interview staffs making blind calls, evoke a different, *nicer* country full of reasonable, temperate, cooperative inhabitants, when commercial opinion polling got started inthe 1940's. But nowadays hesitation, at least toward anonymous questioners from afar, would certainly seem sensible. Actually, the interview situation takes on a farcical character, when emissaries from technocratic tiers confront the disaggregated particularity of sequestered lifeworlds. All at once, an emissary drops from the sky into dispersed habitations where residents carry on their ordinary lives. Without notice, they are put in an awkward position toward an intruder who asks questions (perhaps while the rest of the household eats dinner and listens), about a complicated economic, social, or moral issue, a legislative proposal, or candidates for office. Those interviewed, however, will not learn the source of official interest in "us out here," or the sponsoring firm's competitive situation, or the cultural world of its well-educated staffs

And while ordinary people may know they have or "hold" opinions on problems that matter to them, often they cannot support their views with background information or academic studies, nor have they clarified them by repeated testing in the company of others, as can the sponsor who initiates and pays for a survey. Moreover, they begin with a distinct disadvantage of not being able to consider the problem-issue in advance,or to prepare their comments so as to show themselves favorably, as do members of the political class invited to TV panels.

But the natives soon catch on to rules of engagement. Trained interviewers maintain a detached and neutral voice, whatever the reputed emotional content of a topic of inquiry. Standard style for asking poll questions portrays real problems as abstract and general, so the interviewed hears a tacit invitation to adopt the same perspective as the caller. To take on the role of a proper responder, the issue or problem at hand must also be thought of in words and phrases designed by others elsewhere. He or she is restricted to a single version of the problem, and is not permitted to speculate about stating it better, or revise presented alternatives about what needs to be done for improvement, even though such

revision could express equally valid understanding of the problem at hand. Moreover, as Robert Weissberg has argued in "Why Policy Makers Should Ignore Public Opinion," poll questionnaire designers typically omit or conceal the real costs, negotiated trade-offs, and possible consequences or conflicts with other issues, which a vote for "better environment," "stronger military," or "lower taxes" would inevitably involve in real world practice.

Beneath the professional posture of neutrality maintained by interviewers, a downward-looking, in-charge managerial mentality shows through. They want to get the numbers and go on to the next call. Information retrieved by an anonymous caller therefore hurries past the circumstances and contextual background of the persons who are asked to reply. No time for, or interest in local knowledge shared with the peers with whom they commonly talk, and express, their actually felt, rather than recited, "opinions." More often than not, the man or woman who answers the phone lives in a place where schooled articulation and verbal fluency are not required for getting along and getting by. Nonetheless, the vernacular provides them a vehicle for saying plainly what they say to each other. And *their issues*, if they ever use that term, will often not be issues identified by print and electronic media, or described in that vocabulary.

Indeed, complaints among the elite about a dumbed-down, unschooled electorate can be confirmed by the theatrical encounter in the questioning of ordinary citizens . Without prior notice, people called find themselves confronting really big problems, such as international trade imbalances or charter schools or the country's agricultural policies. What else to say to the distant stranger but improvise a passable reply? Fitting words to thought -- or to feelings -- becomes more challening when we are asked by an observing listener to give an "answer," then and there, about a political problem or proposal, or to choose one side of a public dispute over another, that is, to make a principled choice. Being called to be interviewed, itself a gratuitous situation, imposes stress of its own: how to reckon unsayability (one's many doubts, hopes, or half-remembered, disorganized facts) against implicit expectations to give a credible, coherent speech performance to the projected image of the well-spoken caller. Surely, the situation can revive the self-doubt and anxieties of childhood recitation in a judgmental class, or interrogation as a courtroom witness.

For others, the awkward immediacy of being asked questions about serious policy options can be relieved by turning the call into a breezy chat.
A permissive tone may be adopted by the caller to imply that answering posed questions is like taking an easy, fill-in-the-blanks quiz. All of that metered charm, of course, makes it difficult, for the person who was called, to notice -- or

protest -- ambiguous wording of questions or closed-end answers, even though the topic is a serious one. Yet questions deserving of challenge are heard in innocuous phrasing frequently used, such as "the President's *handling* of *his job*" and "whether the government can be *trusted* to do the *right thing*."

Some people feel required to answer because of reluctance to admit (men especially), "I don't know anything about it," while, "I couldn't care less . . . sounds rude or ignorant. Just saying something to please, any made-up-reply, so he can go back to doing what he was doing before the phone interrupted, will be counted with equal weight as opinions from those who answer with substantial understanding of the issue -- if any turn up in the slim sample. All that contributes to misleading portrayals of national opinion.

Formalized interview procedures and narrowly structured polling instruments are also poor substitutes for common, undemanding, conversational talk. From years of daily practice, talking is routine back and forth saying and hearing, then saying more. Spontaneous everyday exchange is supplemented with facework, tone, and gesture, perhaps nothing more than nodding or a shift of posture and comportment, pauses, repeats, checking glances. In everyday human speech, away from the lecture hall, intended meaning is adjusted to replies (or silence of others). If the other is not familiarly known, talk is steered by a quick and silent estimate of what the other can be expected to hear and understand. Even so, an attempt to communicate intended meaning is not always successful, so a second or third version may be attempted, each speaker all the while trying to maintain the appearance of a sensible, average, right-thinking person, in part so as not to lose esteem or provoke the other, and break contact.

With friends, neighbors, and relatives, mutual construal is aided by vernacular and colloquial language that reduces the risk of being misunderstood, even when the saying is not said fully or well. Everyday speech does make sense to hearers, but the words used cannot take all of the credit, and may barely capture a thought. If phrases and half sentences were to be exactly transcribed, they would fail to convey shaded meanings heard or imputed by listeners then present. T. S. Eliot had one of his characters declare the difficulty and limits of speech: "I gotta use words when I talk to you . . ."

Not all talking with others is intended to deliver information or ideas. Bland commonplaces and diffident not saying remain tacit conventions because much that is important to each of us is unsayable, or need not be said. So we accept each other's comfortable filler to extend an o.k. mood, or avoid silence, or

merely to confirm mutual support and shared presence. We depend on others to discount our exaggerations and to overlook our protective reserve and diffidence; together we maintain comity by not pursuing what remains unsaid. All those aspects are, of course, lost in a fleeting, episodic interview when the originating end must follow its scientific agenda.

Promises of Randomness

How is it that opinion polls have come to occupy a prominent place in electronic and print media as an authoritative voice in the country's politics? It was not always so. Reliable opinion and attitude research only became available in the 1930's. George Gallup can be said to have invented modern polling by demonstrating (in the 1936 re-election of President Roosevelt) that prediction of election results requires methods which eliminate unintential bias in selecting survey opinion-givers or "respondents." At that time, his use of the telephone to collect information on voter intentions made a cognitive leap over *ad hoc* mail surveys, door-to-door or straw-vote inquiries. The new technique for selecting poll respondents could be hailed as successful in election forecasting because predictions of winners and losers were soon validated when actual votes cast were counted.

Although similar factual confirmation was not available for larger topics to be surveyed later, the revised methods were welcomed by marketing and advertising interests who needed to learn about consumer preferences and brand loyalty, or to anticipate purchase intentions. When marketing consultants conducted surveys by the sampling method, they simply carried over the original political orientation, wherein people were asked to "vote" on fixed choice alternatives in product selection or satisfaction questionaires. In turn, that orientation came to be applied to research on social and economic issues among the public seen as "customers" of politics.

Certain advantageous assumptions about the work were laid down by founding practitioners in the 1930's. People who were called would cooperate in answering poll questions without questioning the survey process itself. Their recorded replies were to be counted as units with equal weightings on a linear scale. Not doubted at the time was access to one comprehensible, coast-to-coast public. "Public opinion" on this or that topic was just out there, waiting to be harvested from brief answers to questions asked of a few selected individuals.

But central to the industry's own marketing efforts and economic growth was the assumption that its opinion surveying procedures form a branch of the *social* sciences. Soon solidified into doctrine, it allows survey firms to borrow authority and esteem by associating their methods with the enormously successful *physical* sciences. So well established is faith in that self-conferred identification, the general media audience and even political figures are still reluctant to question the validity of national poll results when announced in the media. Continued assertion by the industry about its scientific methods has discouraged further examination, not only from easily dismissed, uncredentialled critics, but from academia as well. For many, no argument is needed; bar charts or neatly sliced piecharts published in contrasting colors, are not only visually convincing in themselves, but look official enough to pass as scientific findings. They also conceal decisions about categories, weighting adjustments and other compromises often built into societal statistics. "What poll numbers tell us . . ." by now seems bumper-sticker plain and requires no defense.

Identification of the opinion trade with the prestige, certainty, and beneficial products of the physical sciences has also been essential for building trust among business and government clients who might reasonably doubt the possibility of measuring intangible thoughts and feelings of individuals. To do all that required erasing a distinction between the numerical calculations used to contain and describe intangible spoken comment, as against measurements which definitively quantify physical volume, temperature, density or velocity of things In other words, the pose of doing science-work called for quantitive equivalence: only one realm with objectified dimensions was out there, not two. That move was also consistent with broader thrusts by institutions of the political economy to increase predictability and rationalized control, by extending instrumental tech-sci logics of the professions into every field of human activity.

Despite earnest elevation, opinion polling is not science; it is asking questions of strangers over the phone. The approach to knowledge is ordinary empiricism, where cognitive curiosity and attention are limited to observed, confirmable appearances of things. Empiricist researchers continue collecting piles of disembedded data lifted from grounded contexts, confident those facts, free of mushy subjectivity, will eventually arrange themselves, unit by modular unit, into a structure of comprehensive certainty. Transformation of much of the field of psychology into a discipline of empiricist outlook and measurement after the 1930's was in itself a remarkable historical change not only in working

methods, but in conceptual language.

Consistent with that shift in orientation was the adoption by polling technology of a simple research device, the five-point Likert Scale of 1932. Amenable to several versions, it was taken to authorize translation of preferences, attitudes, sentiments, expectations and so forth, into a few firm numbers. Categories such as *"strongly agree, agree, neither agree nor disagree, disagree, strongly disagree"* were also convenient to compress lengthy replies to a size suitable for aggregation and factor analysis. That narrowing of input from responders also made possible mass comparisons of opinion, after being homogenized across time and location. The "agree" (or "disagree") by one person in one place was counted as equal and of the same intent as the "agree" of a quite different person somewhere else.

Although the technique was referred to as "measurement" of personal attitudes and opinions, individuals were not able to formulate and thoughtfully express their own opinions, but only to accept one or another option from offered brackets. The hidden cost of this pseudo-science device was loss of qualitative detail when significantly different personal content had to be compromised, and crowded into only one of five bounded categories. Nonetheless, the technocratic mentality prevailed. Published reports of national opinion -- filtered through survey technology -- have come to compete with other perspectives and existing information on important issues and problems. They also contribute to a larger trend in politics wherein quantified information crowds out discoursive exchange.

The industry's claim of scientific authority stands on a long defended platform: the statistical technique of random or "unguided" sampling. In the opinion trades, its accuracy is beyond challenge, like the atomic clock. Universally adopted to avoid inadvertent bias of earlier methods, "respondents" are randomly selected so each has equal probability or chance to be contacted. (The process can now be automated with random digit dialing.) While requiring tidy habits for handling volumes of data, the work actually done requires skills hardly more advanced than those of cost accounting, or brokerage study of equities movement. Nonetheless, its relatively simple methods permit a comparatively very small number of people -- often between 1000 and 1500 -- to speak for (represent? reflect? be surrogates of?) the people and opinions of an entire country. Attributing their interviewed answers, however contingent and off-hand, to unselected multitudes, although a cognitive leap, went unchallenged.

Statistical theory, which provides the basis for random sampling, had already achieved respectability as an efficient way to calculate variation in experimental trials in biological or agricultural research, and predict probabilities of outcomes in gambling casinos, and for insurance industry actuaries. Yet it was also an important move for early researchers to adopt randomized selection of opinion informants for a broad spectrum of issues and social problems. That meant dealing with feelings more complex than up-or-down voting intentions toward candidate A or B, while at the same time shrinking information into single numbers, as done with electoral data.

Eventually, randomized selection of respondents was not enough for clients of polling organizations. After surveys reported on what people said about particular products, candidates or issues, explanations were expected on why they thought that way. For mid-century social scientists, the obvious turn was toward common demographic variables of age, class (now income level), sex (now "gender"), race(s), education, urban/rural location, and marital status, all to provide reasonable, if stereotypical stories. Usually, correlations would do to suggest "causes." As topics multiplied, especially for social, economic, and legislative issues, questions had to be broader in scope, and correspondingly, new explanatory motivations had to be found.

While inquiry was being widened, the country continued to grow in size and economic complexity, but the polling business stayed with its early orientation of random sampling: for each study, a small caucus of proxies had to be assembled to cast votes for the entire population. It continues to rely on samples of 1000 or so individuals to supply answers to a national questionaire, despite the doubling of this country's total population from 150 million since 1950. With population close to 300 million, each responder is now speaking for 225,000 other adults. Or are they? The mere fact that each interviewee had an equal chance to be selected -- with no hidden bias, partiality, or favoritism in being picked to answer -- hardly justifies claiming *their* stated opinions are representative of another 224,000 who have not been heard. Why believe that? How do we know?

"Random" or randomized selection, really means "uncorrelated" to other things, events, or persons. A leap of faith is required, however, to accept the assumption -- and assertion -- that a methodologically gathered plebiscite of faces and voices, an imagined caucus, speaks for all of us. Those procedures, and their results, do not qualify as science, since research

cannot demonstrate factually a simultaneous congruence of the actual beliefs, feelings, worries and hopes, with the country as research frame.

Undeterred, relentless opinion gleaners press on, defended by a theological adherence to the doctrine of random sampling, inculcated in acolytes at graduate schools. It could be observed recently in a participative demonstration at one of the survey organizations. Those attending were shown a large container filled with the commercial confection, M & M's, and were invited to take a certain number of the bean-sized pieces (all made of identical material), from a large jar of them mixed together, which are then sorted and counted *by color*. Not surprisingly, those randomly picked pieces approximate the distribution of colors in the larger quantity in the jar, and repeated takings will show similar proportions to each other.
But once again, the hidden curriculum of equivalence is in play. An implicit lesson of the demo was that it's respectable to think of research subjects as having no more particularity and diversity than blue or orange
or brown pocket candies.

In other words, the sample was sorted on the basis of a single visible marker -- exterior colors -- although we know that people, including those contacted for surveys, show patterns as different as snowflakes or DNA, with striated hues, one might say, going all the way down. The tutelage accompanying that conference room performance was consistent with sociology itself, which exiles to the provinces of portrait painting and poetry the distinctive qualities of persons.

Canonical Positivism

Social research methods that restrict evidence about human diversity and difference to observable appearances and characteristics can be traced back to the 19th century founder of the discipline of sociology, Auguste Comte. In announcing the new "science of society," he called for its procedures, rules of evidence, and research outlook to follow those of the natural, or physical sciences, by which similar, invariant "positive" social laws would eventually be established. So far, no such laws have been found. Nonetheless, the term, and practices of, positivism survive, with naturalism in social science research, including public opinion surveys.

George Steinmetz, editor of The Politics of Method in the Human Sciences (2005), in an essay there, writes about the epistemological rules of positivism that continue to dominate contemporary approaches to

economics, psychology, and sociology. As elsewhere, its research starts with an implicit theory of knowledge, that is, presupposed assumptions and postulates that govern the work, usually without explicit agreement. That foundational "epistemological unconscious" in turn stands on an ontology, often unstated.

The *mentalite* of natural science is expressed in social research as role model for procedures, operational style, claims for authority, and narrow empiricist rules for what can count as information. Gate-keeping at journals and conferences also restricts currency of alternative cognitive perspectives on social issues. Naturalism shows up as methodological atomism, an objectifying gaze, more attention to surfaces than underlying structures, and a disposition of investigators to view humans from an elevated, disengaged, and professional perspective. No hesitation then, about loosely bounded, transient events -- a few words stated during a phone interview -- being concretely "thingified," despite mingled and unspoken meanings omitted from a responder's hurried assent to a waiting interviewer. The resulting version of public opinion, constructed by aggregating those disembedded, unitary responses from opinion-givers suspended as methodological isolates, calls up images of hobbyists assembling neatly meshing plastic Legoblox. Such confident facility with bounded cells, however, distracts from, or conceals, significant aspects of self/other opinion, especially its contagious changes and fluidity.

For the rank and file however, as well as for governing tiers, continuous media announcements about results of opinion polls supply an illusion of ample knowledge made freely available, about what we think and want. More troubling over time is that the populace, or at least its literate sector, gets trained up to think about issues and problematic conditions in an abstract and sanitized language of numbers, so public discussion about national opinion can no longer be conducted without them. In Technopoly, Neil Postman saw opinion polling as one of the invisible (non-material) technologies that become autonamous and sanctified, to function independently of the system they serve, and to rule out other possibilities. That reigning mindset favors arcane techniques of quantification to serve as the guiding instrument for calculative control, often to the exclusion of alternative conceptual and participative approaches to understanding and action. Translating the world into researched numbers further dissolves its once esteemed and unified coherence, and strengthens confidence in contemporary strategic control.

Who Gets Invited to the Caucus?

The opinion research industry also claims that summarized responses to survey questions mirror national opinion because the mix of a randomized sample will follow the demographic mix of the entire population of the country. (Where it does not, responses are imputed by statistical patching and trimming to make up a "balanced" selection). Validity of opinion surveys turns upon the implicit claim that since a sample picks people who comprise an accurate cross-section of the population, they will express, in their averageness as a group, a truly representative distribution of opnion(s) distributed across the country.

Yet if the validity of results of a survey, along with explanations given for them, turn upon marketing's "key demographics," those increasingly depleted categories become an issue in themselves. Many interview selectees, surrogate speakers for the rest of us, no longer conform to traditional profiles and typified roles. The U.S. Census Bureau now recognizes six categories of marital or "partners" status, eight educational levels, ten levels of income, nine adult age levels, eight categories of households. With continued immigration, English is a second language for some ten percent of the country's population, with most of them not fully literate here. In the 2000 national census, over 60 million people identified themselves as being of more than one race in various combinations, which would seem to make attribution of their opinions more difficult. "Race," as descriptive label no longer means all that it once did: Tiger Woods, Colin Powell, and Barack Obama are prominent examples.

And Who Else Could Be Heard?

Put another way, noticing, accounting for, and understanding significant differences in opinion may require moving outside established categories presumed to be dependably defining, to recover lived meanings in situated lives. Who else might we find who could have something interesting to contribute to currrent public opinion? Start almost anywhere -- undocumented immigrants sequestered in language enclaves -- Spanish Harlem or a Los Angeles barrio. Other people, also less well described by demographics, surviving through the invisible economy, dealing in petty crime, fencing and hustling. Include too, dwellers in the shadows of addiction and medical alcoholism, or those who can barely read or write, or otherwise beyond the reach of media pacification engines. Not to overlook utopian or paranoid radicals of the Left and the Right, ideological pioneers

and declared free thinkers, against-the-grain partisans, outside-of-the-box zealots, and excitable eccentrics, talented and creative dropouts, holed-up resisters and internal exiles, drifters absorbed by their unruly propensities or sanctimonious recitude. Or members of voluntary communities living inside their own tents of meaning, and those who screen themselves within totalizing stories, novel interpretations and imaginative diagnoses of the country's problems. Further down the list are angry castoffs of the economy, who will, for any listener, point to subordination, abuses, takings, and deceptions. Not to omit disenfranchised felons on parole, jailed innocents and survivors of abandonment who have endured conditions not officially identified as "issues."

Admittedly, there are impediments to arranging clear, two-way interviewing exchange with persons who are deaf, or for asking lengthy question sequences of persons with attention deficit disorder or dyslexia. Other people -- hundreds of thousands -- are in transit as migrant laborers or working as interstate truckers. Some who are hard to reach, would include the deeply depressed, and those in custodial living situations.
Many others who formerly would have been confined to psychiatric hospitals, now live among us with the help of psychotropic medication, but still are not easily located for interviews. There are also true outsiders, even in a crowded country, solitaries and obsessive loners . . . (I had an uncle who chose to live that way). Also less visible are young or old people with severe cognitive or mobility limitations in protective, "assisted living" arrangements, as well as others in stages of terminal diseases.

That's not the end of diversity ignored by mainstream stereotypes and demographic profiles used to explain the opinions, sentiments, and expectations of a nation. Indeed, many of those cited here will have lifeworld association with their own kind, around which strong feelings and local knowledge cluster -- how life is for them -- beyond what is regarded as an "opinion" lifted by questionaire format. Can media and its audiences learn from these silent minorities, from people not gathered into the public sphere? Simply because their views are hard to extract by currently favored methods, their understandings need not count for nothing. Instead of disposing of them conceptually as the "marginalized" -- another imposed category they cannot contest -- they deserve cognitive respect.

If opinion research really is a science of objective, rational inquiry as its practitioners insist, it ought to pursue evidence wherever found.

Instead, its reports over the past fifty years have emphasized centrality and majorities -- averageness -- by displaying collages of friendly snapshots welcomed by big media. One result of those methods has been that major institutions and political factions failed to anticipate and prepare for new social, cultural, and political movements of the troubled last half-century. Not surprising, of course, if energies of difference, dissent, or *anomie* breeding outback, will not announce themselves from brief interviews with 1000 individuals contacted one at a time as detached responders. An alternative source these days might be listening in on the bloggersphere, where intelligible signals can be detected through the atmospheric noise.

Confronting the Polls

People can feel uneasy when a published poll shows percentages or majorities they sense are exaggerated compared to what they know about current politics. Their doubts may be strengthened when they are undecided about this or that complicated issue, or are hesitant to come down on one side or another. Ordinary citizens, however, are in an awkward position to dispute quasi-official statistics. Lacking access to tenured ranks, few have an opportunity to confirm their (sensible) doubts within a community milieu of their own, or to make comparisons with previously done research. Published comment on the polling industry in popular media does not encourage audience skepticism; not surprisingly, it's usually uncritical, inasmuch as media conglomerates sponsor their own polls, or cite polling news from affiliated sources. Without informed leadership, there seems to be no disposition among the public to complain when they see announced poll results compiled from gross binary oppositions: "Should increasing the production of petroleum, coal, and natural gas be a priority, or should conservation?" (NYT/CBS News poll).

Within well-known academic institutes and foundations which conduct opinion studies, however, disagreements remain about certain issues in survey work, carefully expressed in journals where the general public is not admitted and only credentialled views count. One such concerns whether opinions are "segmented" free-standing units of thought or belief not connected by an overarching ideology or integrated political beliefs. That question is more than a matter of design methodology. If expressed opinions on questions or issues are separated in consciousness, and are held or expressed without unifying consistency between them, then opinions are more like preferences, simply chosen by individuals shopping in opinion malls. They need not claim foundational values or to be based on ordering

principles, and therefore are immune from evaluation or judgment. Opinions-as-preferences are presumed to be disposable and subject to replacement through planned ad campaigns for "better" wants. Survey sponsors can treat them like commodities in market exchanges, where worth is described in instrumental terms of trade or cost.

Continual national polling also has a recoursive effect. Since percentage results are commonly reported in print and electronic news as fact-events, they help to promote thinned out belief and confirm the relativizing mentality of late modernity. That shift is echoed as well in programs sponsored by large institutions to promote non-judgmental cultural "diversity." Moreover, with audiences trained up as processors of information in graphic form, survey results in popular media display the country's collective worries as separate problems, and each as a choice between clear alternatives. Simplistic wording of poll questions, and sorting answers to them into up-or-down codes also tends to depoliticize public opinion standings because important distinctions, implementing difficulties, and strong feelings have been washed out. When TV network anchors announce, "A new poll shows that a majority of Americans agree that . . ." the subtext implies the particular issue has been settled and further contention is unnecessary.

Some significant part of media's audience will nonetheless resent its casual disposition of serious problems, especially among people for whom "opinions" arise from an internalized web of beliefs and convictions. A unified outlook, informed by moral and ethical principles, holds them to a life course; it characterizes their everyday routines, and confirms duties and obligations (such as parenthood or charitable works). Their replies to posed questions about politics therefore depend upon parallel concerns and wider implications for the things they continue to care about. All that makes many poll questions about a specific problem or a proposed remedy difficult for them to answer. They may be pressed by an interviewer to give a reply, and although it will be recorded as a free-standing, approve/disapprove unit, it has significance only as part of a larger pattern of meanings. Their "agree" or "disagree" ought not be counted equally and the same as another person's wholly unreflective reply. Moreover, certain issues -- capital punishment, abortion, euthanesia, same sex marriage -- cannot be stated as interview questions to offer both utilitarian (pragmatic, consequentialist) and moral law positions. Packaged either-or-options, and polar alternatives offered in questionaires, cannot be averaged out neatly as an artithmetic score because two different, mutually untranslatable languages are involved.

Correspondingly, people who are sympathetic to *both* sides of an issue as presented in a question, or who *disagree* with both sides, cannot get represented in that poll; they are merely cast into "no opinion," or "undecided."

What, Really, Are Opinions?

Less discussed inside the industry are certain fundamental questions that ought to be addressed in a discipline that claims to be a science. One concerns the nature and objective reality of opinions, that is to say, the industry's position as to what opinions *are* and where investigators can find them. Without a clear statement from professed seekers of public opinion about its ontic status, we must turn to surveying work itself.

For one school, opinions need not have an awaiting presence, existence, or location in the minds of individuals. How so, if we commonly speak of people as "having" opinions? The answer lies with the empiricist theory and positivist practices of Behaviorial Psychology. When polling technology was being developed in the 1930's and '40's, Behaviorism, which attempted to apply research methods of the physical sciences to human activity, held a prominent place in academia. Extensive research in university research laboratories at that time studied reinforcement learning and other experimentally induced behaviors, whereby response is a function and dependent variable -- the observed outcome -- of a stimulus. That familiar S--R model was carried over to telephoned interviews: opinions were similarly seen as reactions to the stimulii of delivered questions.

If opinion polls are to collect responsive speech-acts, questions had to be stated in exactly the same wording so a uniform stimulus would be presented. Individuals would supposedly answer the "same" question asked of others interviewed. Each reaction could then be uniformly observed and counted, as with caged experimental subjects. Worth noting is that polling organizations still refer to "respondents" and answers or replies as "responses." Eventually, Behaviorism's mechanistic outlook and rigid methods helped to discredit it for research on humans, (although not for rodents). When applied in the polling field, it could not account for varied meanings humans heard in, or gave to, identical question wording, because it had excluded individual consciousness and subjectivity -- human agency -- from the research model. Vulnerability of using each question as a voiced, uniform stimulus became evident with continued experience in interviewing. Slight changes in wording or alternative phrasing

of questions, as well as the order in which questions are asked -- "sequencing effects"-- resulted in noticeable differences in replies.

George Bishop, in his recent book, The Illusion of Public Opinion, examines many examples of how the format of interview questions in surveys, conducted year after year by prominent organizations, produced erroneous and misleading reports about public opinion and opinion change that were largely an artifact of questionnaire wording and presentation. Prof. Bishop also provides an extended analysis of "illusions of causality" seen in efforts by polling organizations to "interpret what the poll findings mean . . . and why the public thinks as it does." He, and others, conclude those attempts have not been successful, but rather, characterized by dubious, superficial, self-reports of resondents, and a naive, folk-minded epistemology for attributing causation. Running parallel to those retrospective inquiries are national exit polls to reveal which "issues" mattered most to voters. Using questionnaires to get respondents to plausibly justify their votes however, result in stories that confirm the projections and rationalistic mindset of media operatives. Apparently another example of the farcicial interview situation of respondents obliging the interviewer: "If you ask it, they will answer."

The extensive research and published arguments, about long-standing question design problems within the survey business, ought to have pointed to a different direction, and more ambitious goals, than trying to construct wholly unambiguous questions. Especially for broad social and political issues, or those involving ethical and moral principles, the evoked feelings, beliefs, and thoughts of individual persons -- whichever versions are used -- will often be more complicated (and unstable) than closed-end sets of optional answers will allow. A persisting problem for respondents with alert habits of mind, for example, is the rationalistic stance and crisp perspectives of the questionnaires themselves. Or that any question form, (necessarily) assembled with words, will inevitably carry multiple connotations and compacted meanings which always are susceptible to different hearing or interpretation, hence to infect the respondent's answering thought.

Put more broadly, "opinions" may perhaps be thought without words, but cannot be *said* without choosing particular words. Nonetheless, opinion research groups have continued in the depersonalized posture of earlier laboratory impressarios, trying to control the situation with questions which

foreclose multiple meanings, while rejecting any demurrers or revisions to their phrasing by those being studied: after all, laboratory subjects must not become agents!

Another school of opinion surveying starts with people seen as opinion holders, as owners of a mental inventory, stored away as if on shelves of a vast warehouse. For many of those called, so rare is an invitation by officialdom to offer an opinion on anything, they willingly fetch their own dusty item and say something about capital punishment or school discipline. Encouraged by a polite reception, he or she would gladly enlarge upon the question asked, or refer to related problems, but polling formats allow no space for discoursive thought. Yet if interviewers, following instructions, cut short replies to questions, they forego collecting more rounded, balanced responses that can emerge by successive revision, as he or she attempts to clarify what is meant, or to say it better. Instead, the initial answer gets recorded, and is mixed into survey totals.

One unremarked effect of opinion survey design is to prevent contagion between respondents, *i.e.*, opinion-givers cannot confer with others in the sample, which is,of course, how opinion is ordinarily formed in the busy hive of everyday life. No possibility, therefore, of the atomized interviewed finding common grounds and mutual confirmation, exchanging doubts or assurances, talking through disagreements to reshape existing views, to arrive, sometimes, at shared understanding.

The artificiality of this programed situation adds to the status tension between the one asked, who dwells (perhaps) in modest circumstances, and her better educated asker, making it less likely that she will dispute the premises of an interview question, even when it muddles her thinking. A classic example is the routinely asked question in national polls which seek compact numbers for Presidential "approval ratings." *"Do you think the country is headed in the right direction, or is on the wrong track?"* Since the interviewer's purpose is to collect replies for a widely publicized (if inherently ambiguous) score, it is futile, for those who are called, to hesitate over the simplistic either-or choice in this archaic train metaphor, or their uncertainty over what the right direction *is*, or how to recognize a clearly *wrong* track.

The Representation Problem

A different kind of challenge needs to be made here to the orthodox creed of established opinion polling: that reported results of randomly sampled interviews truly reflect what a nation thinks. It requires however, a gestalt shift away from a standardized way of seeing, the cognitive framing which serves as the established research paradigm, both for industry insiders, and now, through long habituation, as restricted thinking for the rest of us.

As already noted here, in the polling industry model, a randomized sample of survey responders/reactors are contacted, (typically 1000), who are treated as representative of and statistically equivalent to a much larger population. This lottery, however unbiased it may be in choosing those few invited to speak, still does not insure a bundled assembly which can voice the opinion of a nation. Put differently, randomly sampling *people* is not the same as sampling *opinions*. Opinions and persons have a distinct existence and presence, which is to say, ontology.

Conventional polling methods obscure that distinction by conceptualizing selected responders around the country as carriers -- metaphorically, wrapped packages -- of opinions (beliefs, wishes, prejudices, hopes). But if only 1000 of them are selected, those few cannot reasonably be assumed to possess (or be able to deliver), opinions which mirror the actual wide range of diverse opinions available throughout the national "inventory," especially for questions on complex economic or social issues which may not turn up locally, or seem less relevant to conditions of their own lives. And the only opinions which can be counted by an interviewer are those actually said by a responder. Indeed, there will be variant outlooks and alternative meanings of the cited issues, along with pockets of uncertainty, distrust, fear, dissent, speculation (whatever), not expressed by some of those called to the phone, hence, left out of "public opinion." Nonetheless, the survey will count the given replies equally, however limited their scope or variety, to assemble an image of national consensus. Still, that shortfall can be made to matter: only 550 brief interviews out of a 1000 sample of 225,000,000 are needed for media to announce a "majority of adults agree that . . ."

Dissenting attitudes and sentiments may grow and spread to influse outlooks and activities in public sectors, yet not be ready to signal their presence when a polling organization calls up 1000 people. Failure to detect yet undeclared shifts in thought is aggravated by interviewer haste,

or clumsy questions, but also by survey instruments not designed to take in quite different views growing up from below. Novel and out-of-the-box attitudes or outlooks that form without ready, at-hand language, will not reach remote survey staffs sitting before a screen. And as we know from the literature of psychotherapy, underlying, emotion-laden themes significant for individuals, even those who seek to better understand themselves, may be expressed reluctantly, or in disguised form.

Polling methods obscure the distinction between *persons* and *opinions* in another way. In the bounded frames of conventional research, directly observable markers for people's income, age, marital status, race, location, and so on, will be distributed in familiar patterns, such as bi-modal bell curves, or statistical arrays. Different research frames and procedures are required however, if the aim is to retrieve opinionated feelings not distributed in distinct, plainly present, and regular patterns. They circulate as currents within more stable cultural values and meanings, to arrange themselves in non-symmetrical, mutually supportive affinities, instead of following neat demographic axes.

In short, material realms tend to be well-structured and modular; while opinion is poorly bounded and irregularly disbursed. Survey staffs can locate the distribution of physical variables already in place, but opinions themselves trace more organic contours. Put another way, we know where people with physically verifiable identifying markers -- income, sex, age, education -- are to be found, but except for voting records on county and state ballot proposals, we don't know where most *opinions* are.

Moving Beyond the Standard Model

To investigate and represent public opinion in its true amplitude, we need a cognitive orientation that can replace the reigning paradigm of opinion research and its growing anomalies. It would move studies of opinion to a more appropriate scale and observational perspective for recognizing and describing them. In short, it would assert an ontology of opinion(s), a task too long avoided.

Rules of method were established early in conventional opinion research but also implied an ontology. Under the empiricist canon, journalistic references to a vaguely atmospheric "national public opinion"

are useless for scientific investigation, which requires direct, controlled, confirmable observations and manageable scale. Instead, opinions from selected speakers were to be noticed at the site of enunciation, and counted either as a stimulus-response reply to uniform question wording, or by an individual fitting his or her ideation into one of several graded options provided by a questionnaire. When those spoken events (question replies) are all collected and encoded, the sum of them is deemed not only to have status as public opinion, but to stand for, or be equivalent to, the opinions of a whole nation on a specific issue, problem, product, or candidate.
But given the disjunction between the academic, methodological definition of opinion, and common understanding of how people think and talk about important matters, no resolution is to be expected, or sought.

Nevertheless, the favored sampling research model with its implied theory of knowledge, came to define the field for reporting the phenomena of public opinion at a point in time. By avoiding intricacies of popular thought emmeshed in culture, creed, and custom, the standard approach reduces and redescribes attitudes toward complex problems with a few categories convenient for computation and ready comparison. Often, polygonal issues are presented as two-sided. While it parallels reductive or particulate models useful in the physical sciences for studying substantive things, it has not been an appropriate cognitive model for learning about choice and rejection, or *valuation*.

Even in the physical sciences, reductionist approaches have had difficulty encompassing and correctly predicting interactive systems made up of branched sub-systems, or simultaneous intersection of multiple variables that produce true novelty. Common natural processes, such as formation of crystals from chaotic mixtures of minerals, and biological organisms genetically mutating under environmental stress in vegetative environments, do not conform to uniform “if A, then B” regularity. Similar indeterminacy characterizes opinion formation and change, in part because its vehicle is language, irreducibly social, with a life of its own. Attitudes and opinions seem to be sprinkled and cast like seeds, some to have taken root, many not. They prevail like biological conditions, resemble infections that mutate and migrate, or properties emerging from genetic interaction. They cannot be explained, or predicted, by the force-vectors model of physicalist social science.

Looking Into The Opinion Plenum

One alternative formulation for escaping the narrow rules and bookkeeping practices of the quasi-official research model would start by postulating an epistemic plenum, within which "opinions" of every sort continuously emerge, flourish, reproduce, or decline. With a wider cognitive frame, more that is usually omitted would be recognized to deserve attention as opinion: Transient fashion in apparel and taste in furnishings and art. Or a climate of pessimism pervading a recession. Or a collective rush to patriotism. Or "Peace now!" resistence in wartime. Or undeclared propensities opening up acceptance for conduct (the vogue of tattooing and flesh rings come to mind). Or shifts in sexual mores, up, down or sideways. Or readiness to protest or sign petitions or demonstrate publicly. Or shades of nativist unease about ethnic minorities, or welfare. Or active involvement with community and participation in civic observances. Or the inconspicuous "opinion" of settled domestic habits and dependable routines. Those are, in turn, realized in combinations, as reticulated patterns and fluid process, evolving from discontents, unease, heightened sensibility, vague states of mind or disposition, ideas without square corners, unresolved wantings, ambivalence and incipient worry, recovered memories . . . all occasions for, and forms of, speaking our mind.

As noted earlier, conventional research conceives public opinion to be *upwardly harvested* from a narrowed particulate base, wherein single speech events are combined and realized as a composite entity. A very different ontology for describing and studying public opinion would be cognizant of, and attentive to, an overarching opinionate, a prevailing and ordered configuration from which aspects of opinion in circulation are *drawn down*, or *drawn upon*, by borrowing, internalizing, and patching, without conscious effort, of (non-selected) individuals. From a broader cognitive scope, public opinion is manifold for very many observed particulars and variousness. Instead of being confined to solicited answers to specified questions about this or that issue, it apprehends expressive forms outside positivisit criteria and *post hoc, propter hoc* habits of explanation.

This conceptual perspective of a comprehensive, available repertory for individual opinion(s) has a precedent in the *creencias* named by philosopher Jose Ortega y Gassett, and examined in the work of historian Karl Weintraub. *Creencias* are sedimented convictions and embedded certitudes so taken for granted as not to be called into question. They are buried assumptions about life and the world, "what everybody knows," tacit

conclusions settled for us so long ago. Commonplaces affirmed by history and past collectivities, simply there, in place, given, seem to exist before we begin to think. Those prevailing beliefs become, without individual assent, part of our everyday, shared practical understanding -- *phronesis* -- by which we work out daily problems. But phoned interviews will not reveal their ubiquity, their routine salience, or how routinely mapped onto spoken attitudes.

There need be no alarm about turning to a different approach to apprehend and appreciate public opinion without strings of ratifying numbers. As Sidney Pearson has argued in "Public Opinion and *The Pulse of Democracy,"* polling has prospered because it offers the illusion of certainty in public life.

> "The numbers that emerge from opinion polling do less to illuminate the problems involved than to create a false sense of precision where imprecision is properly called for. . . . The quantification of public opinion as the fundamental reality of opinion is typically purchased at the price of moral reasoning, which tends not to be quantifiable by its very nature."

Most relevant to the proposal here for a more suitable scale and inclusive model, he cites Aristotle's advice that, ". . . precision is not to be sought for alike in every subject matter, but only so much as the subject matter itself permits."

Other Precedents

Marketing interests and commercial soc. sci. already accept certain overarching and prevailing national moods which are both expressed by, and recoursively influence attitudes of individuals. Well established and most familiar is the Consumer Confidence Index, sponsored by The Conference Board, which, through its several component scales, is used to chart rising or falling changes in consumer sentiment and producer expectations. Inasmuch as research sponsors themselves believe that Index methods competently encompass and grasp the nature of that changing phenomenon, the surveys continue over the years. Variation in periodic Index readings is widely publicized and watched even though *confidence* has no tangible -- ontic -- materiality for direct observation.

Media publicity about the Index as indicator or predictor of other economic changes has gradually reified its numbers to become, for investors and the public, an equivalent entity, that is, "confidence" as a distinct and consequential reality. Yet a conceptual tension remains. Although variance in confidence among "consumers" is shown by the measuring scale, can we postulate actual existence of confidence itself that does not rely on confirmation by continued surveys, but prevails independently of questioning interviewers, as an overarching national mood?

Another independently prevalent aspect of national mind that has attracted polling efforts concerns collective sentiments of mutual trust. With slight variants in form, a familiar question is asked in public surveys every year by polling organizations: *"Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?"* Much interpretive comment has followed the resulting numbers, also objectified as actualities, and their shifts over time.
The question supposedly measures the quantity of trust Americans have, and also serves for some as indicator of (hoped for) reciprocity between citizens, and as a component of "social capital," deemed intrinsic to our economic system. But by attempting to cover complex relationships between individuals and their everyday settings with a folksy and coaching tone, the question fails. Its odd phrasing and two oblique choices are known to collect equivocal replies. Some people find it unanswerable, or say, "Both!" And one has to wonder why democratic envy and *ressentiment* have not been accorded similar research attention.

As with consumer confidence, an ontological question about trust/reciprocity asserts itself. Have configurations of trust or reciprocity been out there all along (the realist view), or are they only passing "descriptions," of observed and quantified answers to questions (empiricism, nominalism)? Put another way, are trust/reciprocity only creatures of survey procedures, that have no discussable existence aside from positivist measurement-facts, or do they prevail as reality on their own? The conclusion will have implications for the cognitive standing of that entity we so easily refer to as "public opinion."

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What to Do About a Failing Technology?

Even this limited review of the polling industry's epistemic problems might suggest we should stop cooperating with calls from pollsters, and refuse to answer their questions. Many people already do so, of course, and refusals are increasing for a variety of reasons. That however, won't stop the processes of polling; virtuoso statisticians would patch and fill the randomized no-answer spaces in a sample with typified answers from "equivalent" people. Besides, the numbers used for a sample are so small that even an entire sample of 1000 could refuse, but be easily replaced by another list (who would know?) On the other hand, individuals can decide to answer a survey (or parts of it), by making clear to the caller that they will do so only with equal status as participant in, and contributor to, worthwhile inquiry, demonstrated, *e.g*., by then asking questions about sample size and sponsorship. In any conversation about important matters, citizens should expect to be treated with respect as intelligent adults, not as casino slots being fed tokens to see what combinations roll up.

Of no use, however, to complain to survey organizations about arbitrary methods and practices. Their faith in their work has taken on a well-spun air of piety and conviction, more remarkable for the secular professional environment in which staffs work. And there is always a study at hand to wave around (we don't get to examine it) to disprove out of hand any critical complaint. Moreover,the keystone dogma -- random sampling of isolated individuals who are put forward as nationally representative opinion-speakers -- cannot, must not, be questioned.

Confidence in the validity of measurements produced by polling technology is reminiscent of another, once empowered technology, the academically researched and commercially sold paperware for measuring human intelligence known as "I.Q." testing. Its techniques were in wide use a half-century ago, and years of critiques and complaints were required to bring down its rule of hardened numbers in employment and educational decisions. Absurd as it may now seem, the basic notion was that by scoring penciled replies to a set of puzzle-like questions, testers could assign to each person an intelligence "quotient" -- a number -- to define, beyond challenge, how intelligent (or not) was he or she, and thereby what prospects each would have for future work and learning -- without possibility of appeal or reprieve.Nobody believes that anymore, but escaping its institutional reach

and presumptive authority required a cleansing of cognition, to see that flimsy apparatus for what it was.
Not easy then to break away from, and to dispute, a prestigious technology packaged as psychological science.

During that time, a successful industry has continued to construct "public opinion" from brief, numbered replies to fixed questions, guided by a paradigmic conviction that opinions of persons can be readily captured, neatly sorted, and uniformly counted as representative of other, unheard opinion-holders. Favorable media publicity regarding polling surveys of national attitudes and interests has disseminated a generalized outlook among its audiences, whereby those highly selective accounts are accepted as correct and sufficient. Standard cognitive methods for identifying, describing, and aggregating opinion have, in turn, formed for most of us, an unspoken, background ontology by which we refer to and even think about *opinion(s)*. Correspondingly, that limited version of public opinion, and the empiricist descriptions it produces, goes largely undisputed, even though claims made for the accuracy and validity of the work comparable to the certainty, clarity, and esteemed truth of the natural sciences, have too often failed in actual delivery.

As with other well-established cognitive framings of inquiry -- and entrenched "normal science" paradigms which Thomas Kuhn examined -- the model maintains special advantage because critics can be ignored, and negative information will not disconfirm its authoritative position. When supported by stakeholders'extensive sunk capital and vulnerable careers, a shift in vision requires a crisis among members of the guild. We might remind ourselves that other, once undisputable constructions, such as mechanistic Newtonian physics, have been challenged and replaced, if not without disruption. In the meantime, information about the republic's common mind and collective understanding -- realities grouped as the *opinion* of a *public* -- should not be restricted to, or synonymous with, the workings of a particular, convenient technology, especially considering its growing weight of anomalies

The eminent success throughout the modern world of products and processes derived from science-based technology understandably distracts popular attention from their influence on politics. At the same time, professional vocabularies and managerial grammar, institutionally located,

deflect critical discussion. But public opinion, which can inform governance, continues to move in ways not always apparent, or captured in codes.

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