KNISELY_ROBERT_PROGRAM DESIGN FOR PUBLIC ADMINISTRATION

INTRODUCTION

Governmental intervention in society must occur in three steps: (a) determining policy: the goals of the intervention; (b) program design: deciding how best to achieve the goals; (c) administration: learning how to manage the chosen tool, and measuring the effectiveness of the intervention.

Many universities offer courses in Public Policy and Public Administration. However, the intervening step — Program Design — is seldom addressed. Universities teach how policy is formulated and enacted through the legislative process, and they offer courses in how to administer government programs, but only occasionally are there courses on how to design government programs. Very few relevant books are available. My favorite is Lester Salamon's book, The Tools of Government. He describes many ways that policies can be implemented. Salamon's fourteen tools of government (Salamon, 2002) are as follows:

1. Direct Government
2. Government Corporations & Government-Sponsored Enterprises
3. Economic Regulation
4. Social Regulation
5. Government Insurance
6. Public Information
7. Corrective Taxes, Charges, & Tradable Permits
8. Contracting
9. Purchase-of-Service Contracting
10. Grants
11. Loans & Loan Guarantees
12. Tax Expenditures
13. Vouchers
14. Tort Liability

Choosing a tool from the list is only the first step in designing an intervention, however. The Contracting Tool, for example, includes buying both copying paper and F35 Lightning Fighter Jets (including the $400,000 helmets for their pilots), as well as

incentive prize competitions. A hammer is a tool — but by the late 19th century Birmingham, England was producing over 500 different hammers. The design of government interventions to solve 21st century challenges must take into account VUCA (volatility, uncertainty, complexity, and ambiguity).

Program design is not a lost art — it's an undiscovered science. This new field must include not only the basic tool set (and any subsequent additions), but systems thinking, the emerging field of design itself, and the information explosion. Several examples follow.

SYSTEMS THINKING

Places to Intervene in a System

Donella Meadows has outlined these nine places to intervene in a system (Meadows, 1997):

9. Numbers (subsidies, taxes, standards)
8. Material stocks and flows
7. Regulating negative feedback loops
6. Driving positive feedback loops
5. Information flows
4. The rules of the system (incentives, punishment, constraints)
3. The power of self-organization
2. The goals of the system
1. The mindset or paradigm out of which the goals, rules, feedback structure arise

The Law of Requisite Variety

Ross Ashby formulated the Law of Requisite Variety in the early 1950s (Ashby, 1956). It says that the variety in a regulator must be at least as great as the variety in the system being regulated. As examples, the inspection of food and the collection of taxes presume that government will hire adequate numbers of food inspectors and IRS employees. If Congress does not appropriate funds to hire the necessary workers, the desired goals cannot be achieved.

Phase Four Souvlaki (trying to do the impossible)
President Nixon's wage & price controls (1971 - 1973) were unenforceable: The price of the souvlaki at a Greek restaurant on Capitol Hill was held constant, but my friends and I found that the portions steadily diminished in size. There was no way that the Federal government could keep track of portion sizes across America. Governments should not pass unenforceable laws. See "Prohibition."

Partnering with the Internet (learning where there is help and how to use it)
An office with ten attorneys at Social Security has prosecuted cases of mail fraud since 1988. In 2011, when Internet fraud began swamping them, they initiated partnerships with firms such as Google, Microsoft, Apple, Facebook, Visa, MasterCard, and PayPal to block both ads and payments — thus preventing victimization before it occurs. Their partners have shut down websites, mobile apps, social media accounts, and advertisements — both within America and in foreign countries. Although Ashby's Law cannot be violated, the attorneys successfully changed their modus operandi by enlisting a substantial number of additional controllers of the system. They redesigned their program.

Learning from failure
"Successful change comes not from emulating success and trying to better it but from learnig from and anticipating failure, whether actually experienced or hypothetically imagined." P. 329 Henry Petroski, To Forgive Design (2012)

For years, the Economic Development Administration (EDA) in the Commerce Department got money to spend on construction projects to alleviate recessions (a negative feedback loop). Often these projects took so long to get approvals that they got underway just in time to reinforce the next economic recovery (a positive feedback loop). This was noted in 1976 by Commerce's new Office of Program Evaluation (which I had just started up), and the program was modified to request and approve only "Shovel Ready" projects. The program's counter-cyclical purpose was regained. We changed the program's design.

Programs benefit from continual improvement. John Brademus, who was the president of New York University for 11 years and a Congressman from Indiana for 22 years, including time spent as Majority Whip under Tip O'Neill, once said that "Congress never gets anything right the first time – after five or six years we have to revisit our 'solutions' and correct them" (Brademus).

With a more cooperative Congress, the Affordable Care Act might well have been amended many times, bringing its current effects more in line with its original objectives.

DESIGN

Designing all human artifacts (which certainly includes governments) is now the subject of many books and not a few university schools and departments, including the Design School at Stanford University and the Rhode Island School of Design. Design is an essential aspect of all professional training, as was noted almost fifty years ago:

> "Engineers are not the only professional designers. Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. The intellectual activity that produces material artifacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state. Design, so construed, is the core of all professional training; it is the principal mark that distinguishes the professions from the sciences. Schools of engineering, as well as schools of architecture, business, education, law, and medicine, are all centrally concerned with the process of design." (Simon, 1969)

THE INFORMATION EXPLOSION

The information explosion requires little explication in 2017. For one example, program design can benefit in many ways from crowdsourcing. An old example: the Longitude Prize (1714): When the British government was trying to find a way to measure a ship's longitude, they offered the public a monetary prize to whomever came up with the best solution. Today, we might point to Wikipedia as an example.

We need bear in mind these two quotes:

> "People are speaking to their government with 21st century technology, we are listening with 20th century technology, and responding with 19th century policy. — Madeleine Albright

> "First, government has to be absolutely transparent — every agency, across the board, with exceptions only to protect public safety or personal privacy. Second, we must encourage people to use that data to create useful apps, devices, tools — anything they want. Third, we must learn to engage people on their own terms. Fourth, we need to allow people to bypass government. Fifth, we must inject a more innovative, entrepreneurial mind-set into government (Newsom, 2013).

CONCLUSION

The effectiveness of governmental interventions (i.e., programs) is the bedrock beneath governance, state capacity, the ability of governments to satisfy the needs of citizens, trust in government, and the stabilization of states. This is true around the world.

A new science of program design must include: (a) extending the tool set; (b) establishing subcategories for each tool; (c) noting their key tool dimensions; (d) detailing their design features; (e) exploring their applicability; and (f) evaluating their use, not just their results. This will result in a "pattern language" for governmental interventions, following the work of Christopher Alexander (1977).

As the challenges to governments become more complex, critical, and urgent, we must remember the words of Charles Darwin: "It is not the strongest or the most intelligent who will survive, but those who can best manage change."

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