Addiction to Prisons

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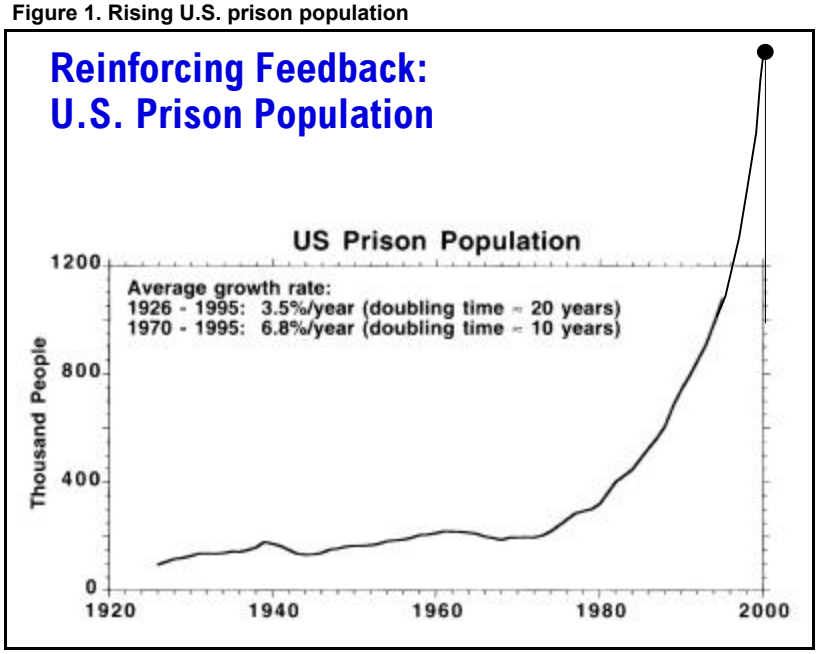
Summary:

Figure 1 shows the exponential increase in the U.S. prison population.[1] This short paper uses the lens of systems thinking to examine why it's rising so quickly. When there is an exponential increase in the value of a variable in a system, systems thinking tells us there must be a reinforcing feedback process behind it. Here we describe the short-term balancing process that is intended to reduce crime and several long-term reinforcing processes that lead to increased crime.

Figure 1. Rising U.S. prison population



An approach to reduce crime and increase public safety is to pass tougher laws against crime, increase enforcement, and build prisons to hold those arrested. This creates is a balancing feedback loop (a negative loop) that immediately takes criminals off the street and increases perceived public safety. However, the short-run benefit of this policy is eventually overwhelmed by negative long-term "side effects."[2]

As the number of prisoners increases, the increasing costs of building prisons and housing prisoners reduces social spending and crime prevention. In addition, convicts learn from others how to be "better" criminals. Over time these reinforcing feedbacks increase crime and reduce actual public safety.

This is the same structure as addiction to drugs. A drug initially reduces pain and produces a "drug high" … we "feel better fast." But the effects "wear off" and, because a harmful drug has a negative cumulative effect on the ability to cope with life, we need even more of the drug to feel as good as we did before.

Figure 2. Adaptation vs. Addiction

Adaptation: A policy process that operates, so when you observe the symptoms of a problem, you take an action that produces a consequence that counteracts the problem.

Addiction: A policy process that operates, so when you observe the symptoms of a problem, you take an action that produces a consequence that counteracts the symptoms and makes the problem worse.

Dennis Meadows, "Shifting Dominance," *The Power of Systems Thinking Conference*, Pegasus Communications, Cambridge, MA, May 13, 1997

So we can take actions that relieve the symptoms of a problem, but when the actions over time also reduce the health of the system and make the symptoms worse, it's not an adaptation to reduce the pain, it's an addiction to a "quick fix" that temporarily relieves the pain and makes the problem worse. Figure 2 defines adaptation and addiction.

The combination of a balancing process, the effects of which are immediate, and a reinforcing process, the effects of which are delayed, is the systems thinking "fix that fails" archetype. Over time loop dominance shifts from the balancing loop to the reinforcing loop as the reinforcing feedback becomes stronger, creating a vicious cycle.[3] The added structure that makes this "fixes that fail" structure into an "addiction" archetype is that there is a "wearing off" of the effects of the action that drives a continued and ever-increasing need for short-term relief and a long-term decline in the health of the system.[4]

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[1] Graph from John D. Sterman, *Business Dynamics: Systems Thinking and Modeling for a Complex World*, Irwin McGraw-Hill, 2000, p. 110. A data point is added to show that in 2000 the U.S. prison population reached 2 million.

[2] There really are no "side effects." There are only effects which we do not foresee.

[3] Dennis Meadows presented a simplified version of the structure associated with the growing prison population and "addiction to prisons" at *The Power of Systems Thinking Conference*, Pegasus Communications, Cambridge, MA, May 13, 1997.

[4] This is not one of the standard archetypes in the systems thinking literature, but it could well be because it is so commonly seen. See our series of papers on The Crisis Syndrome.

Shifting loop dominance leads to often painful and costly readjustments in our organizations and in our society. Dennis Meadows writes: "The dominant loop is the one causal loop in a complex system that most influences the system's behavior over some interval of time. After one loop has governed a system's behavior for an extended period of time, it can occur very quickly, and sometimes imperceptibly, that the dominance shifts to another loop. When that happens, the habits, the senior personnel, the policies, the data and control system, the criteria of success, even the mythology of the firm may become irrelevant or counterproductive."[5]

> "There is no reason any individual would want a computer in their home."
>
> Ken Olson, president, chairman and founder of Digital Equipment Corporation, 1977

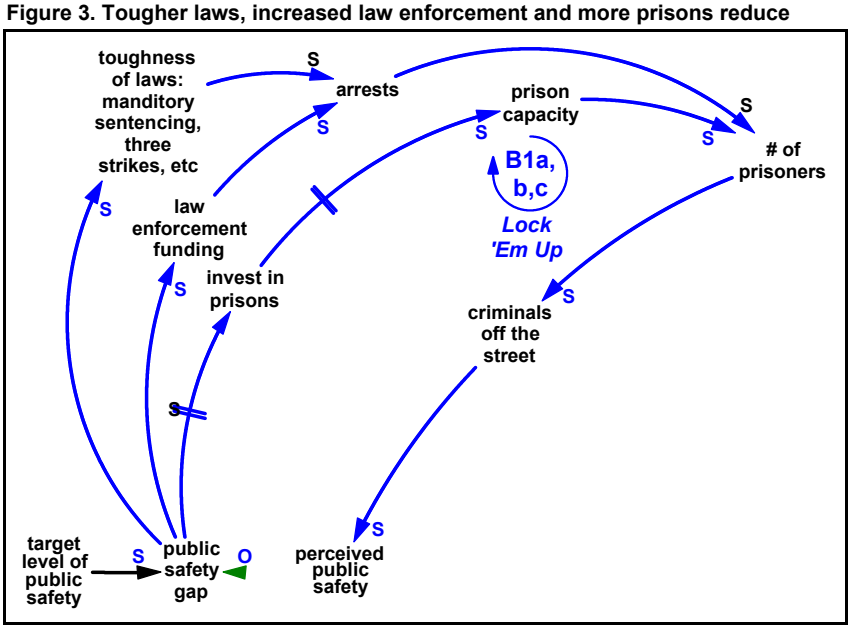
The following sections build the structure in stages for our societal addiction to prisons.

1. Tougher Laws, Increased Law Enforcement and More Prisons Increase Public Safety (B1)

To reduce crime and increase public safety, the U.S. has adopted the general policy of passing tougher laws against crime, increasing enforcement and building more prisons to hold those arrested. This balancing feedback process is shown in Figure 3.

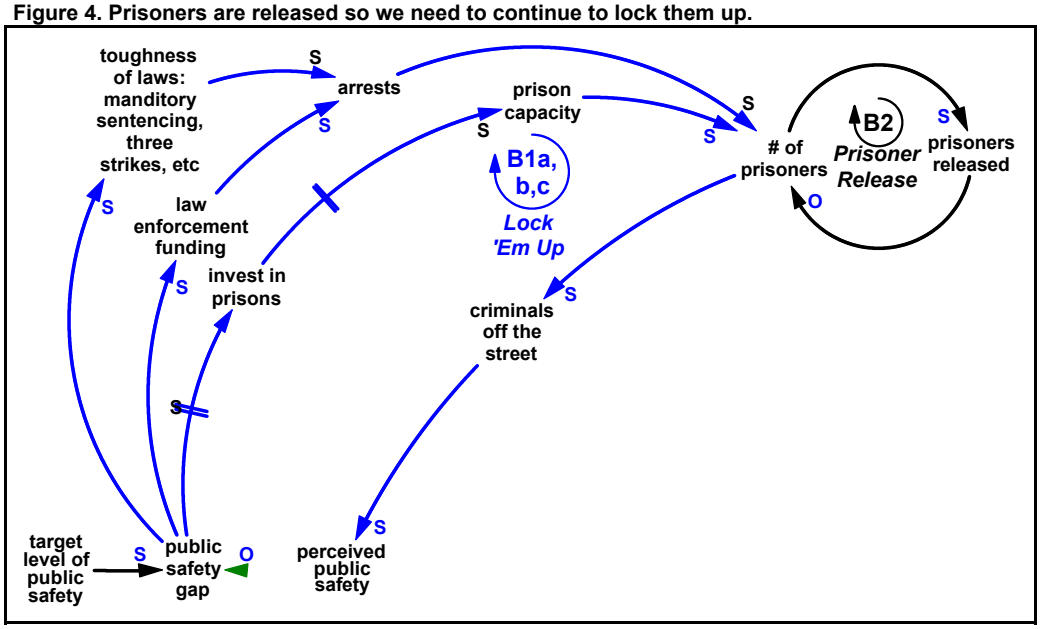
Here's how the structure operates: When "perceived public safety" is below the "target level of public safety," there's a "public safety gap." Figure 3 shows three feedback loops that aim to bring public safety up to target and close the gap (**B1a, b, c: Lock 'Em Up**). When we pass tougher laws, increase law enforcement funding and increase prison capacity, we have more criminals in prison and, with more "criminals off the street," we increase "perceived public safety."[6]

Figure 3. Tougher laws, increased law enforcement and more prisons reduce



This is a balancing (negative) feedback loop that is intended to regulate public safety in the same way we use a thermostat and furnace to regulate room temperature. The "target level of public safety" is equivalent to the thermostat setting and "getting tougher on crime" is equivalent to turning on the furnace.

Figure 4. Prisoners are released so we need to continue to lock them up.



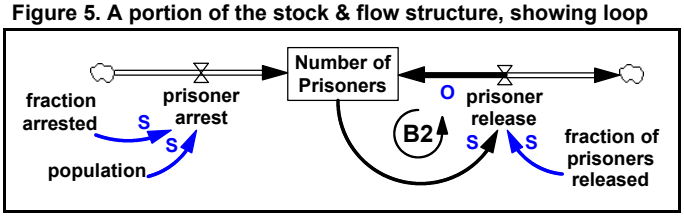
If this were all there is to it, we'd see this

[5] Dennis Meadows, Shifting Dominance," *Power of Systems Thinking Conference*, Pegasus Communications, Cambridge, MA, May 13, 1997.

[6] Note there are delays associated with changing prison capacity. These delays lead to prison overcrowding.

"getting tough" take enough criminals off the street that we'd not have a continuing need to get even tougher and prison population would level off. But prison population does not level off, so there must be more to the story.

Figure 5. A portion of the stock & flow structure, showing loop



The Continuing Need for Relief

Figure 4 shows that, though we **Lock 'Em Up**, prisoners continue to be released, which decreases the "# of prisoners." Fewer prisoners means fewer criminals (or ex-criminals) off the street. This results in less "perceived public safety" and perpetuates a **Lock 'Em Up** policy.

Figure 5 shows the system dynamics stock & flow structure of **B2, Prisoner Release**.[7]

The Cost of Corrections Drains Funds from Social Support Systems

Figure 6 shows that the cost of prisons and prisoner incarceration reduces the funding available for investment in early childhood social support and education. In the long run, after considerable delay, this reduces actual public safety because we essentially raise more criminals and have to arrest and lock up even more of them than we did before.

This makes a **Lock 'Em Up** policy into a "fix that fails," a fix that we must keep on making because the fix "wears off;" prisoners are released and we have to keep locking them up.

As in addiction to drugs, the actual health of the system declines and we use even more of the "quick fix" in order to feel as well as we did before.

Figure 6. Locking them up reduces funds available for helping children avoid a life of crime (R3)

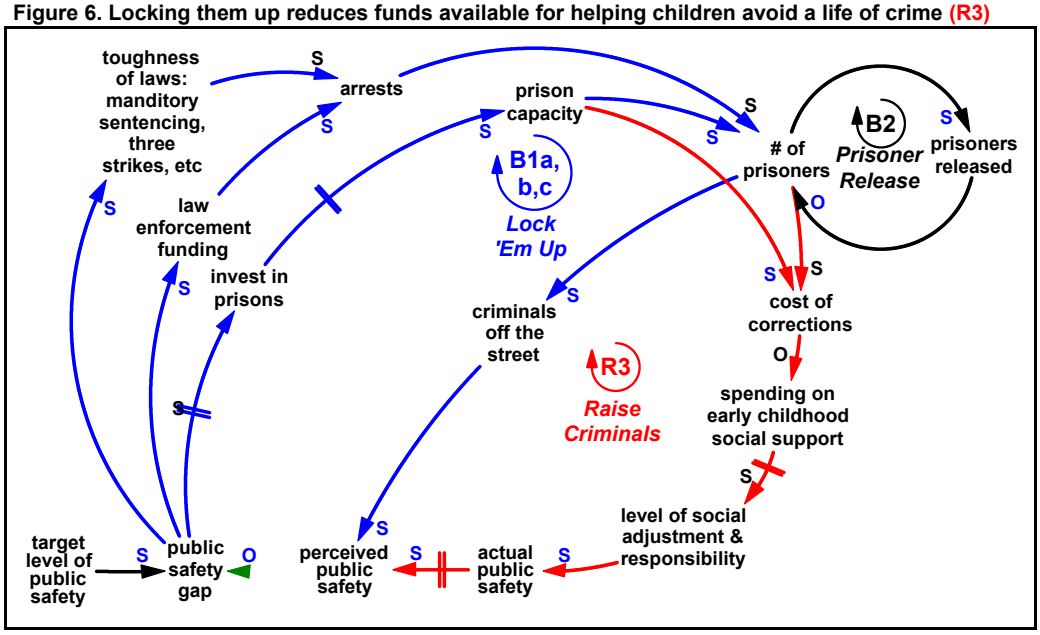
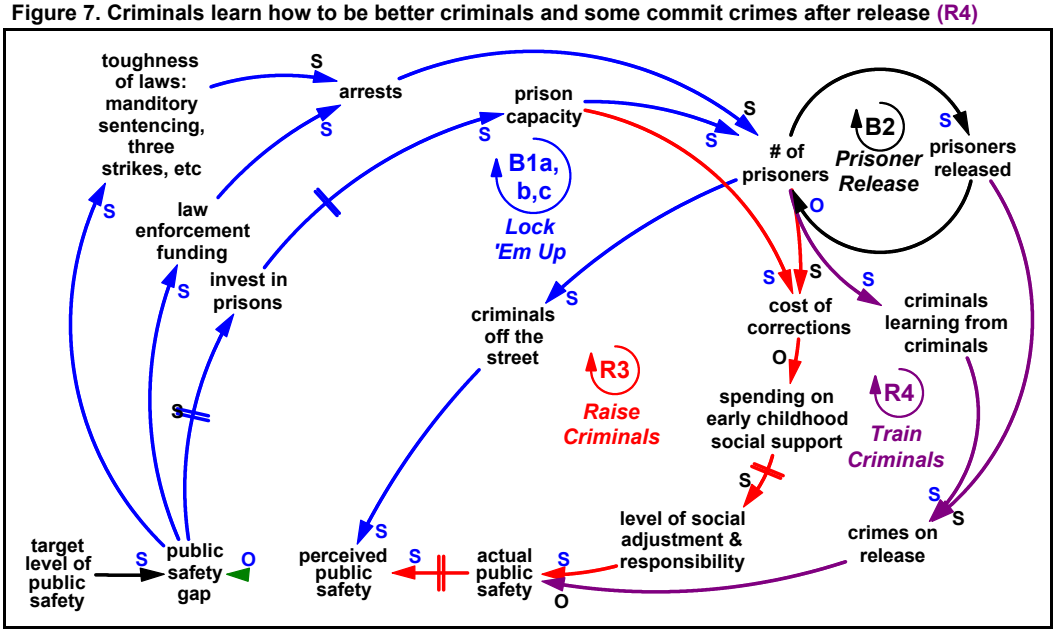


Figure 7. Criminals learn how to be better criminals and some commit crimes after release (R4)



[7] The variable "prison capacity" is not shown as influencing "prisoner arrest," but that would be a factor that would limit the "Number of Prisoners," perhaps increasing the "prisoner outflow" due to the earlier release of the least violent prisoners to make room for the newly arrested.

Training Criminals

Another dynamic, that has an effect similar to that of **R3** and increases the rate of decline, is that convicts learn from other convicts how to more effectively and efficiently commit crimes — crimes for which they are less likely to be apprehended or convicted. And, because ex-convicts have fewer opportunities for legitimate gainful employment, this increases their incentive to pursue crime.

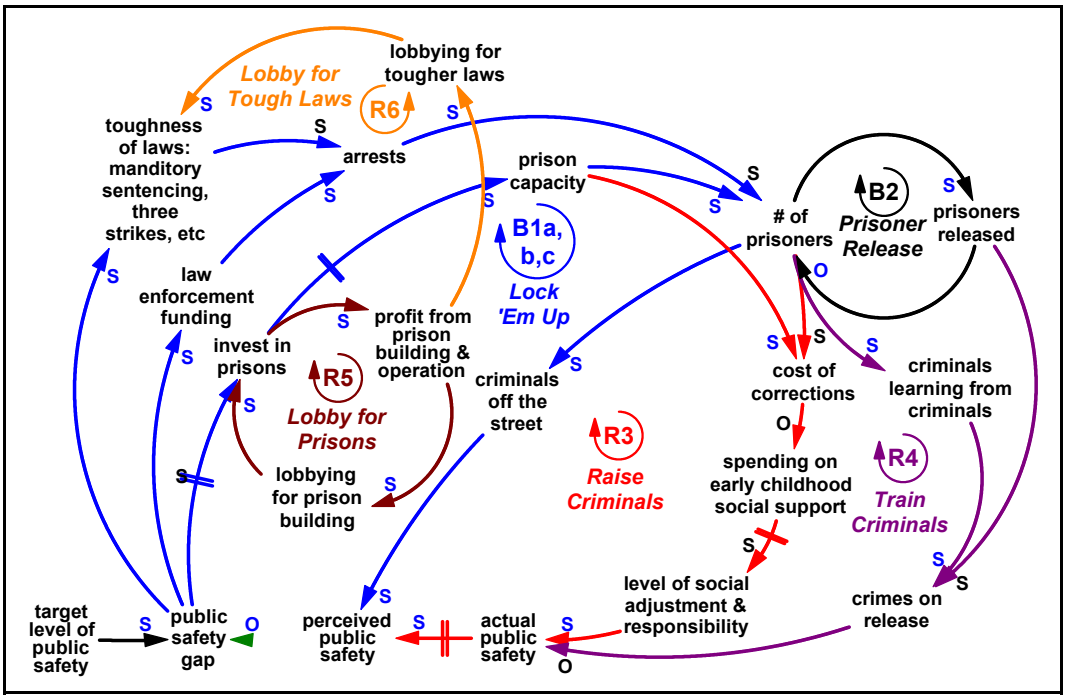
Figure 7 shows that these effects create loop **R4, Train Criminals**. After some delay the crimes they commit decrease "actual public safety" and, even later, "perceived public safety." So this loop, also, requires that over time we must lock up even more criminals.

Other Reinforcing Processes

Figure 8 shows two additional potential reinforcing processes that drive increased incarceration.

Those who profit from prison-building lobby for increased government spending on prisons (**R5, Lobby for Prisons**), and lobby for tougher laws (**R6, Lobby for Tough Laws**).

Figure 8. Lobbying for prison building (R5) and tougher laws (R6)



Conclusion

The reinforcing processes described by this qualitative causal loop model show the kinds of effects that produce the exponential growth of the U.S. prison population.[8] There are undoubtedly others, such as economic policies that do not provide sufficiently attractive alternatives to crime[9] and drug laws that lock up an ever greater number of nonviolent, and otherwise often productive, offenders.[10]

Policy makers must take such long-term failures of our fixes into account if we wish to stop the exponential increase in U.S. prison population and if we wish to continue to maintain that the U.S. is the "land of the free."

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[8] A detailed understanding of the magnitude of such effects would require creating a system dynamic model, performing simulations, and collecting data to calibrate the model.

[9] Federal Reserve policy assures there are more people than there are jobs in order to "fight inflation" and pre-empt a potential "wage-price spiral." But "wage-price spirals" follow the "irrational exuberance" of speculation that produces speculative bubbles. For an explanation of these effects, see our paper on *The Tangle of Growth, A Dynamic Analysis* on growth, sprawl, transportation, housing and farm policy. Fighting inflation by permanently high *real interest rates*, instead of by raising margin requirements, is extremely damaging to the economy and has driven manufacturing out of the U.S. (see our paper on *A Systems Thinking Perspective on A Manufacturing Base Restoration Initiative*, June 14, 2002, revised 7/23/02).

[10] Alcoholism is not illegal though it can totally debilitate a user, whereas marijuana use is illegal even though many users are quite functional.