

Leveraging Systems Thinking to Understand the Complexities of Community Problems

COMMUNITY CHANGE INSTITUTE

cities of the future • co-creating tomorrow

Facilitated by: Yassaman Nouri



Tools Session Description

Social, environmental and economical challenges faced by communities across the globe are complex and dynamic. Lack of deep understanding of the complexities of problems often result in unintended negative impacts in local and global communities. Systems thinking and analysis can be powerful tools to help practitioners understand complex community problems and implement systemic solutions that result in positive impacts in the communities. This interactive workshop will take a very quick look at what systems thinking is and share some practical resources, tools, processes and mindsets to be used for designing and implementing solutions to complex community problems.

Sharing Intentions

My request of you:

Listen not only with open ears but
with open mind, open heart and open will

Agenda

- Sharing intentions
- Starting with a story
- Defining systems thinking
- Selecting a problem / challenge in a community
- Web of Life Activity
- Bridging community and discovering icebergs
- Bridging to close social gap
- Q&A

Three openings needed to transform change

1. Opening the mind (to challenge our assumptions)
2. Opening the heart (to be vulnerable and to truly hear one another)
3. Opening the will (to let go of pre-set goals and agendas and see what is really needed and possible)

These three openings match the blind spots of most change efforts, which are often based on rigid assumptions and agendas and fail to see that transforming systems is ultimately about transforming relationships among people who shape those systems. Many otherwise well-intentioned change efforts fail because their leaders are unable or unwilling to embrace this simple truth

- Source: [*Leading from the Emerging Future* - Otto Scharmer and Katrin Kaufer](#)

Starting with a story

Tehran of today: The most polluted city

- **Rising death rates due to pollution:** 27/day (9,855/year) estimate in 2007; 180/day (67,500/year) estimate in 2015
- Nov 17, 2016: Authorities [reported](#) 412 deaths from respiratory illnesses in the past 23 days.
- [80%](#) of the city's pollution is due to cars. The remaining 20% is due to [industrial pollution](#). Other estimates suggest that motorcycles alone account for [30%](#) of air and 50% of [sound pollution](#) in Tehran.



How do we resolve this?

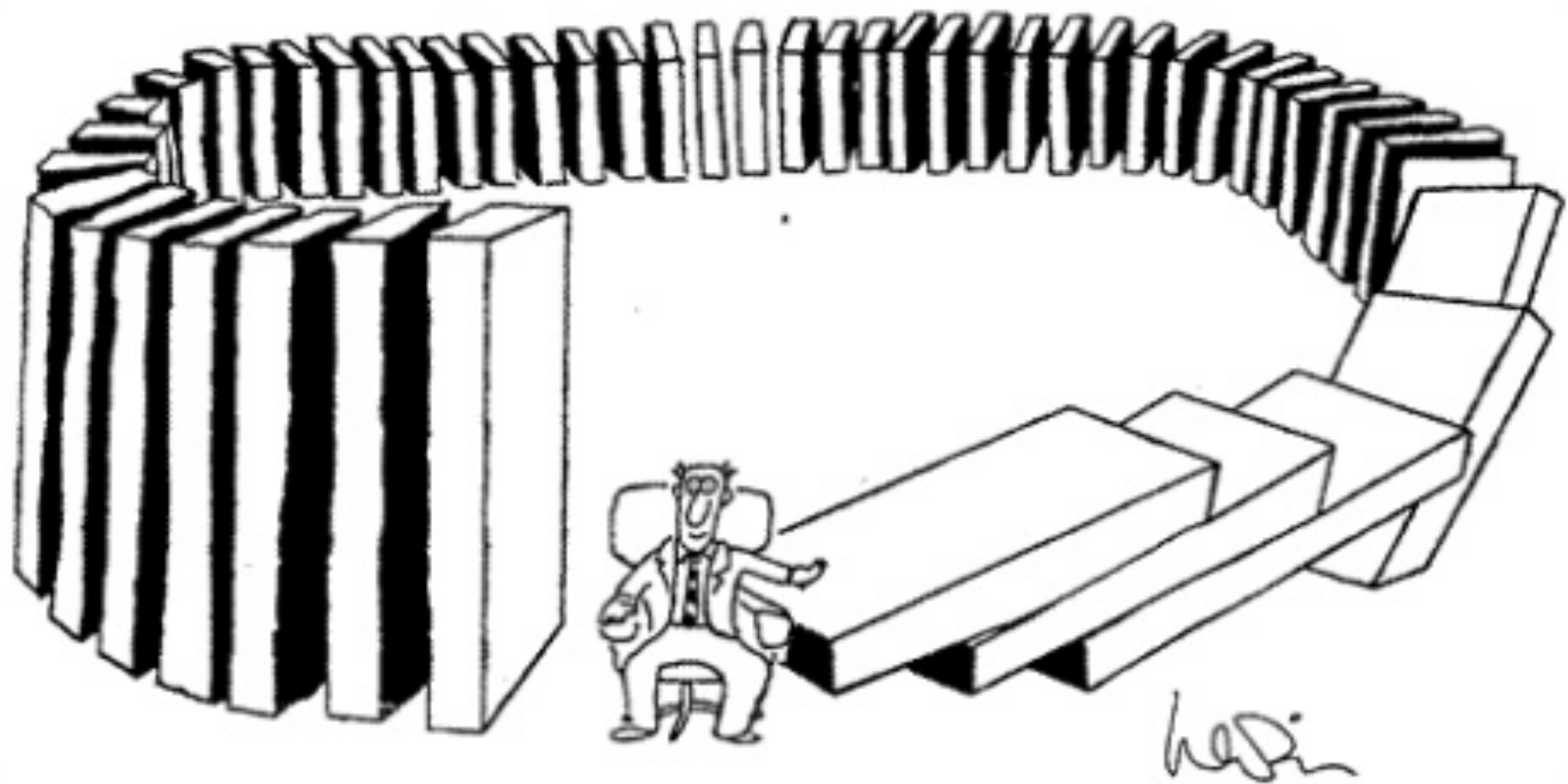
- **Who should take responsibility?** (ex: City of Tehran, Traffic authorities, oil regulators, residents, or International sanctions?)
- **Solutions?** (ex: odd-even and car-free-zone, increase gas price, use media and government to send requests to citizens to use public transit)

Source: [ResearchGate Study of Tehran](#)

Some stats for perspective:

- Ecological capacity: [3Mil](#)
- Population: [15.27Mil](#) (2017)
- Roadway Capacity: [700Kcars](#)
- Cars on the road: [+3Mil](#)

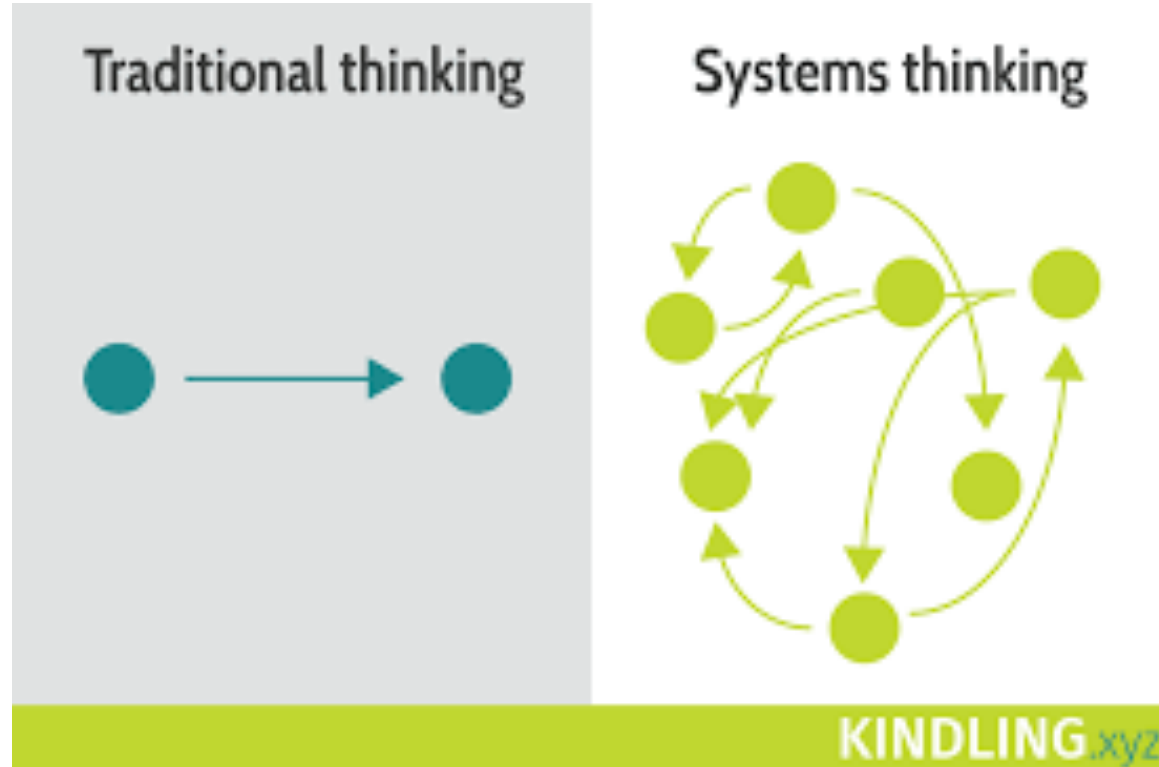




"I handled that Problem"

Defining systems thinking

What are system thinking and system dynamics?



Source: [Kindling](#)

What are “Systems” and “Systems thinking”?

- **Systems:** “A system is an entity with interrelated and interdependent parts; it is defined by its boundaries and it is more than the sum of its parts (subsystem). Changing one part of the system affects other parts and the whole system, with predictable patterns of behavior.”
Ex: Person, a family, a car, etc.

Source: [Wikipedia – Systems Theory](#)

- **Systems Thinking:** “A way of thinking about, and a language for describing and understanding, the forces and interrelationships that shape the behavior of systems. This discipline helps us to see how to change systems more effectively, and to act more in tune with the natural processes of the natural and economic world.”

Source: [The Fifth Discipline Fieldbook - Peter Senge et al](#)

What is “System Dynamics”?

“System Dynamics The study of complex systems, including such human systems as families, organizations, cities, and nations.

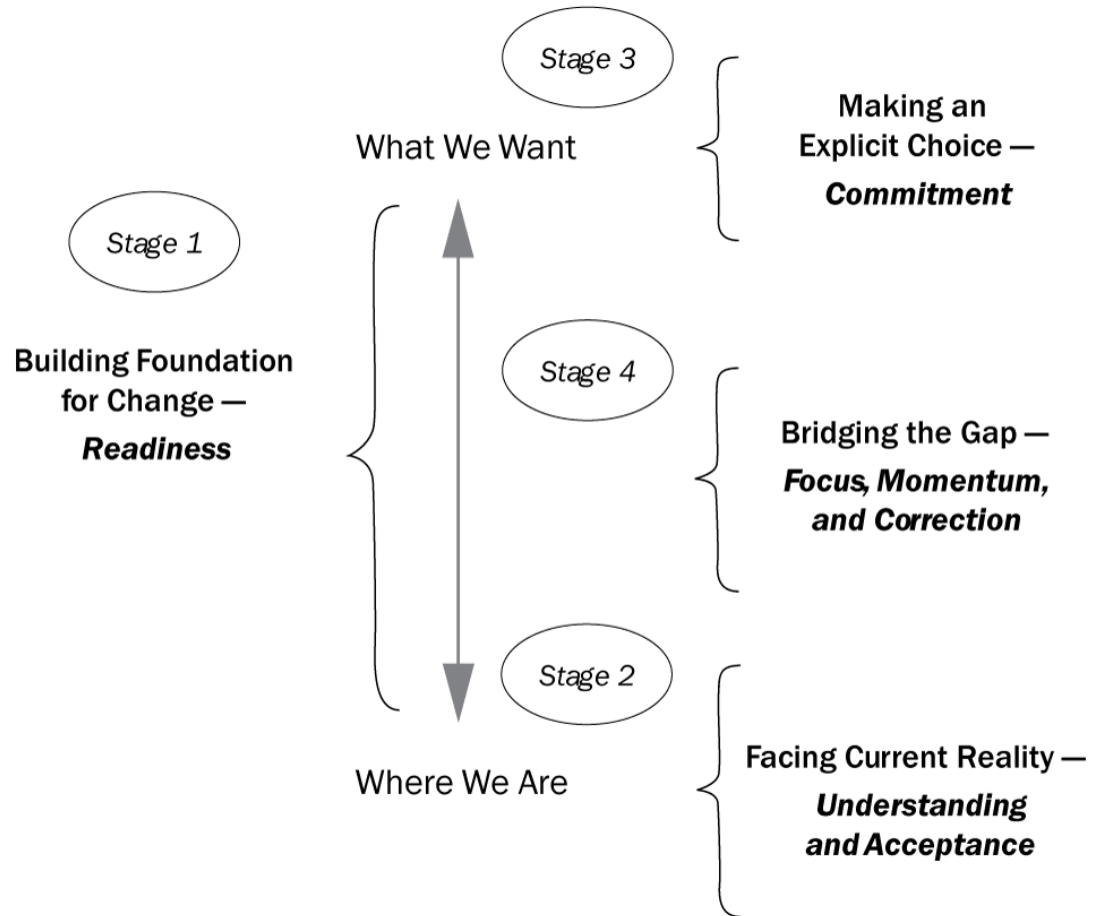
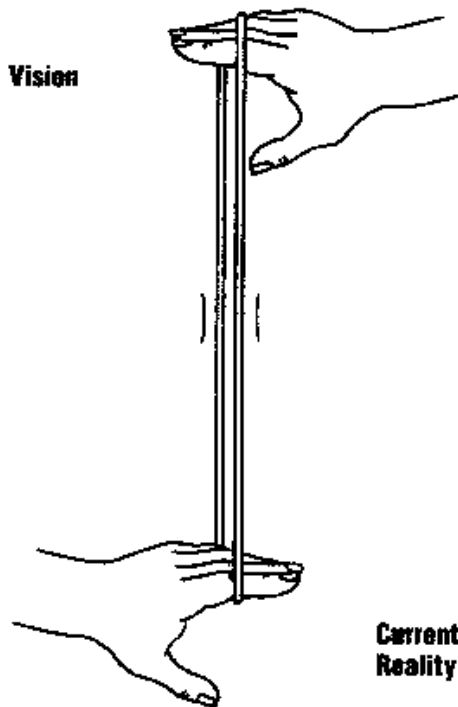
If you look deeply into any system and analyze the relationships between members, you will find infinite complexity.

In a systems approach to a problem, you start by realizing that there is no inherent end to a system. There is no such thing as a complete theory. The quest is to look at a problem more comprehensively.”

Source: [Systems thinking – Peter Senge](#)

Understanding the Creative Tension

Figure 1 The Principle of Creative Tension



Source: Figure 5.2 from [Systems Thinking For Social Change – David Peter Stroh](#) (right diagram) built on the Figure 1: “Creative Tension” model from [The Fifth Discipline - Peter Senge](#) (Left diagram)

Selecting a problem / challenge in a community

Selecting a problem/challenge within your group

Activity description:

- Form a group of 7-8 members
- Select one problem/challenge that your team understands and wants to tackle in this session.

Ideas for types of problems/challenges:

- Increasing levels of pollution, unemployment, crime, etc.
- Decreasing levels of affordability, safety, quality education, etc.

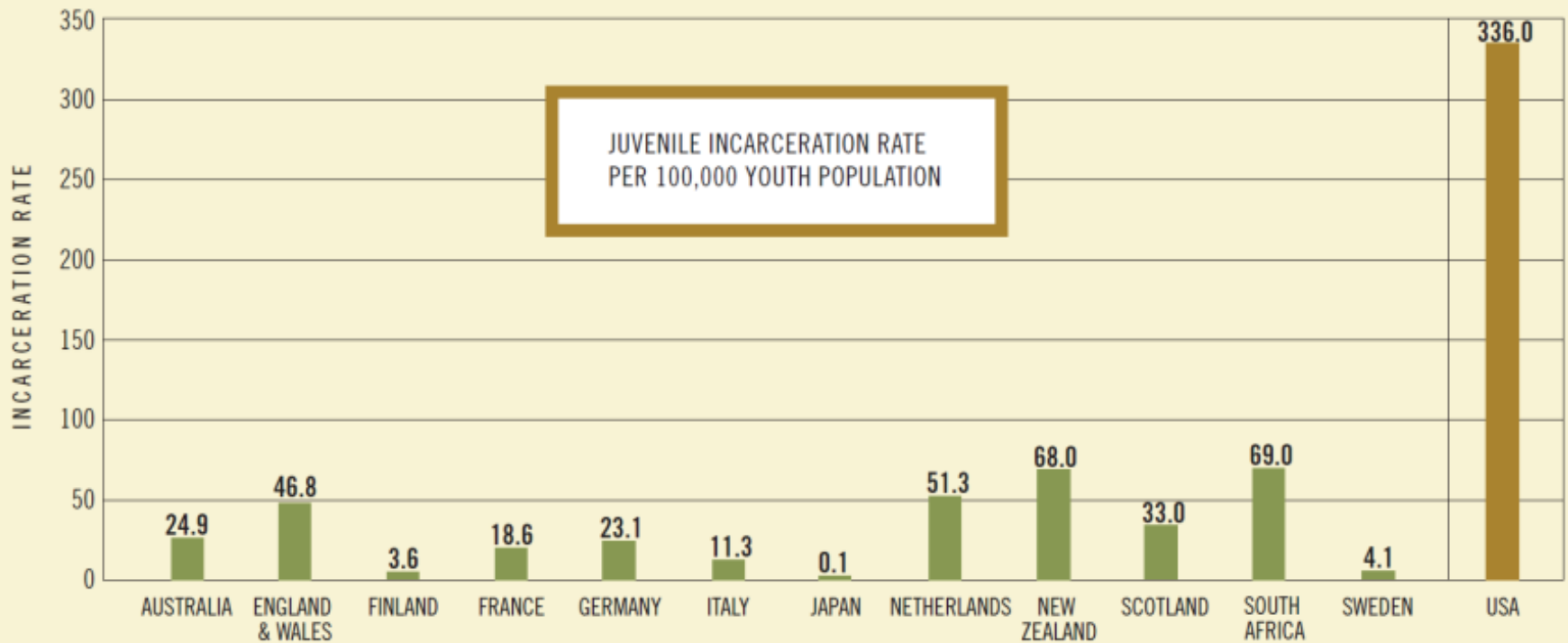
Examples:

- Tehran's pollution related death rates rising: 27/day (9,855/year) estimate in 2007; 180/day (67,500/year) estimate in 2015
- U.S. incarceration rates skyrocketing (~100,000 in 1920 and ~2,400,000 in 2008)

Youth Incarceration in U.S. and N.Y.C.

FIGURE 1

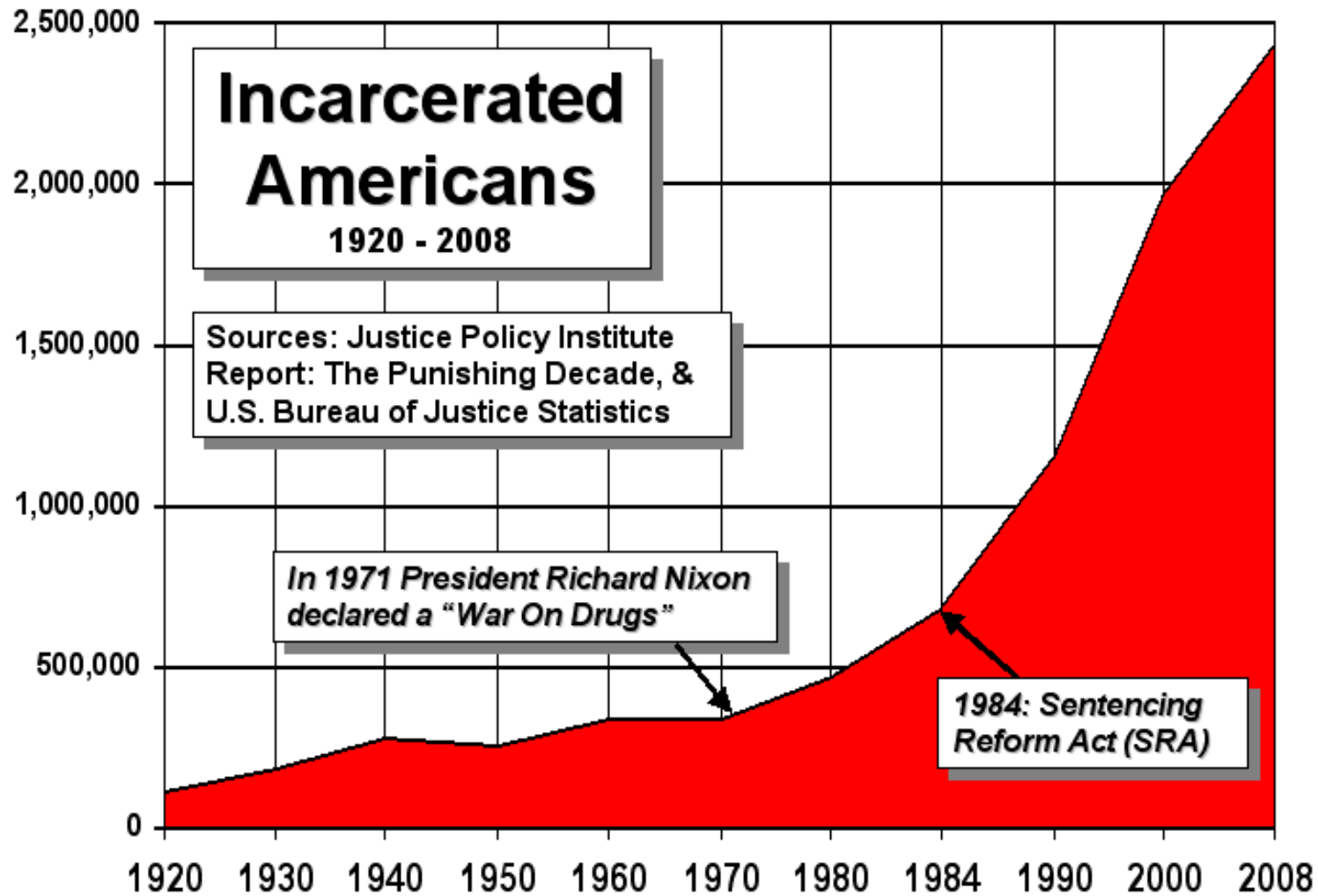
YOUTH INCARCERATION RATE: UNITED STATES VS. OTHER NATIONS



Source: Hazel, Neal, *Cross-National Comparison of Youth Justice*, London: Youth Justice Board, 2008.

Source: [AECF - No Place For Kids](#)

US Incarceration



Web of Life Activity

Exploring the ecosystem through web of life

Activity description:

1. Select 1 observer to record the relationships that will be identified in this activity
2. Draw a large circle on your flip board paper
3. Identify key variables related to your chosen problem/challenge and assign each to an individual
4. Put a large dot in front of each individual on the circle's circumference
5. Have one person suggest how his/her variable is related to one of the other variables, holding on to the pen and drawing a line from their dot on the circle to the dot that represents the other variable.
6. Continue to identify as many connections as possible while the “web” grows in complexity

Potential variables for exploring incarceration example: level of mentorship, employment opportunity, education, safety, poverty, social stigma, police discrimination, political environment, inequality, mental/physical health, etc.

Potential variables for exploring pollution example: alternate transportation, employment opportunity, sources of power for vehicle, sanctions, etc.

Bridging community and discovering icebergs

Identifying the Community / Ecosystem Members/ stakeholders

Activity Description: Identify the community / ecosystems members / stakeholders of your chosen problem / challenge and write them down on a flip chart paper

Members / Stakeholders:

- People and organizations that affect and are affected by the issue
- Anyone that can make a contribution to the effort
- Anyone that can possibly derail the effort if not on board

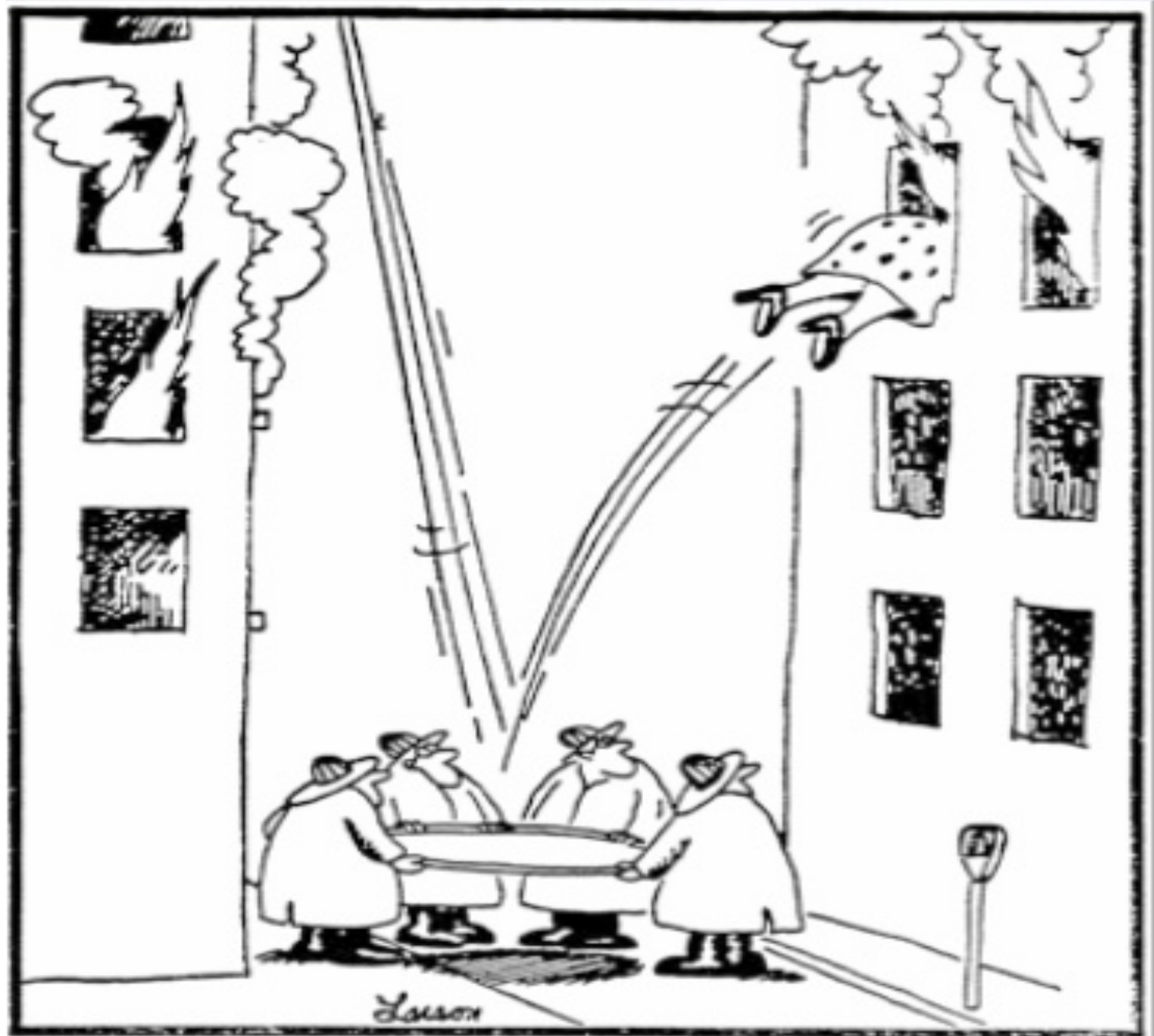
Stakeholder examples:

- Non profits presenting community interests and/or specific populations
- Government agencies, politicians, policy makers and implementers
- Law enforcements,
- Schools
- Business concerns with the impact of an issue on economic development
- The media
- Members of target population

Source: [Systems Thinking for Social Change – David Peter Stroh](#) (check for section 6.1 for a table of a case example)

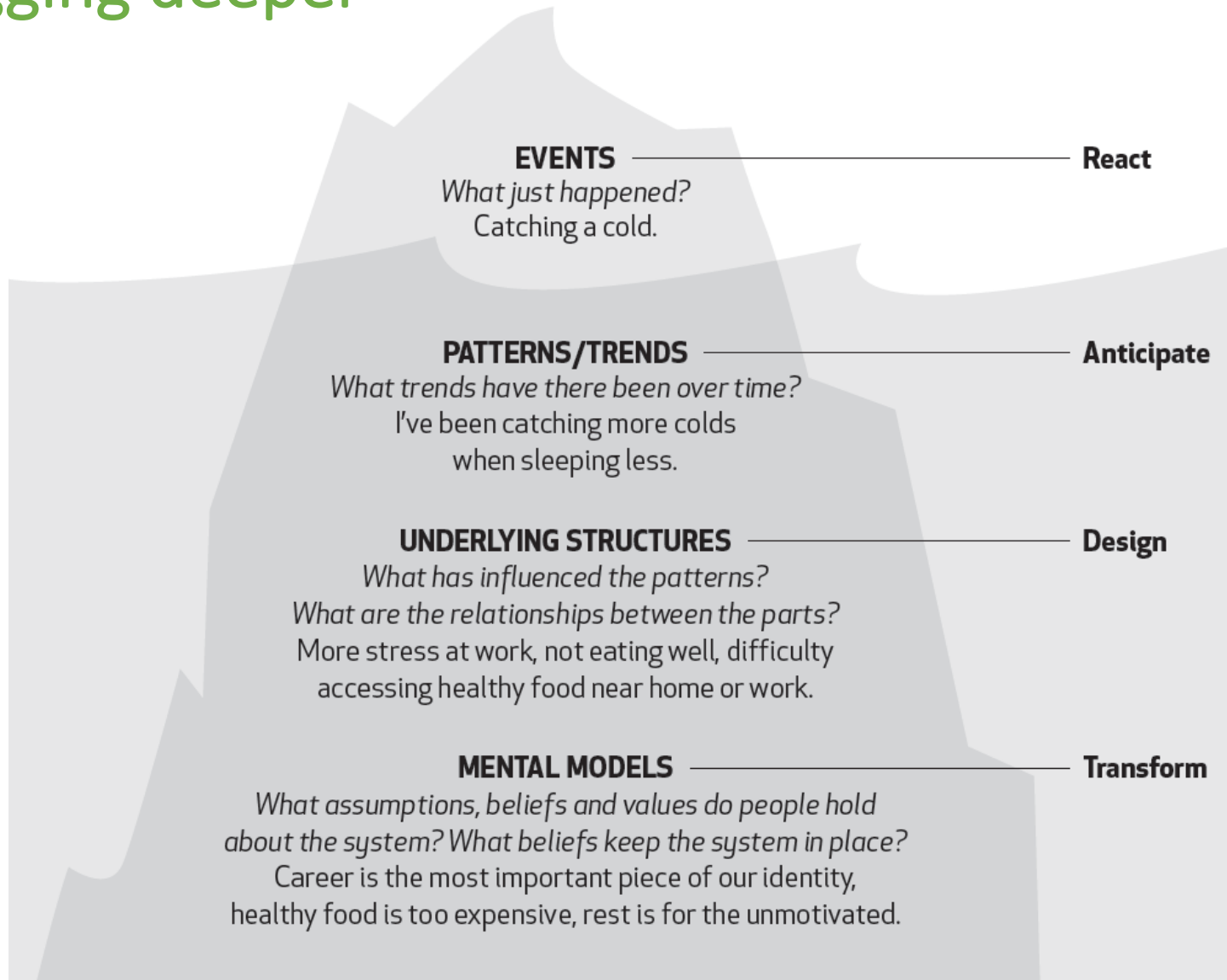
A photograph of an iceberg floating in the ocean. The top part of the iceberg is visible above the water line, while the much larger, submerged part is visible below. The text "Discovering icebergs" is overlaid in green on the submerged portion of the iceberg. The sky is blue with some light clouds.

Discovering icebergs



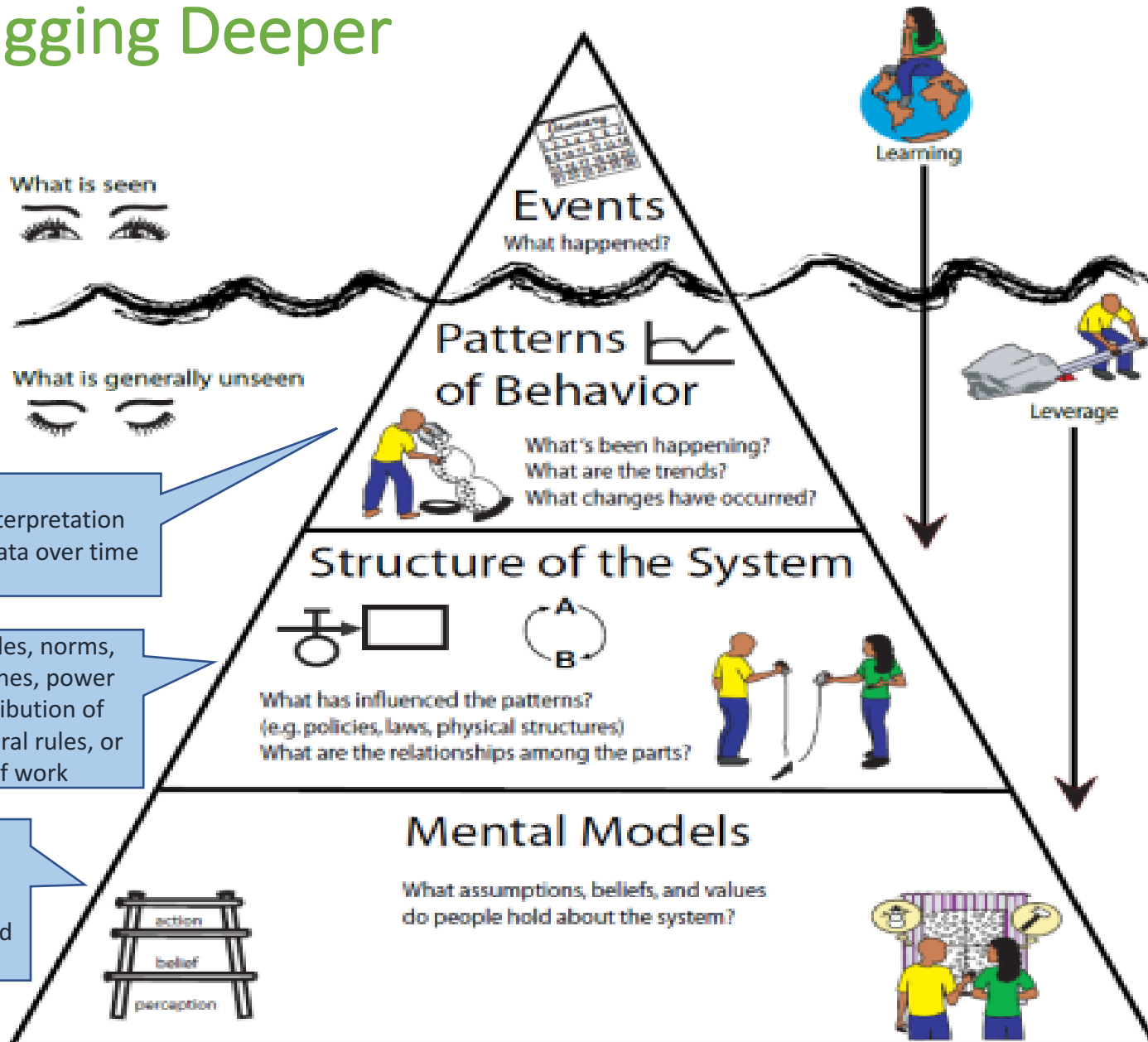
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Digging deeper



Source: [A Systems Thinking Model: The Iceberg - NWEI](#)

Digging Deeper



May include: Interpretation of events and data over time

May include: rules, norms, policies, guidelines, power structures, distribution of resources, cultural rules, or informal ways of work

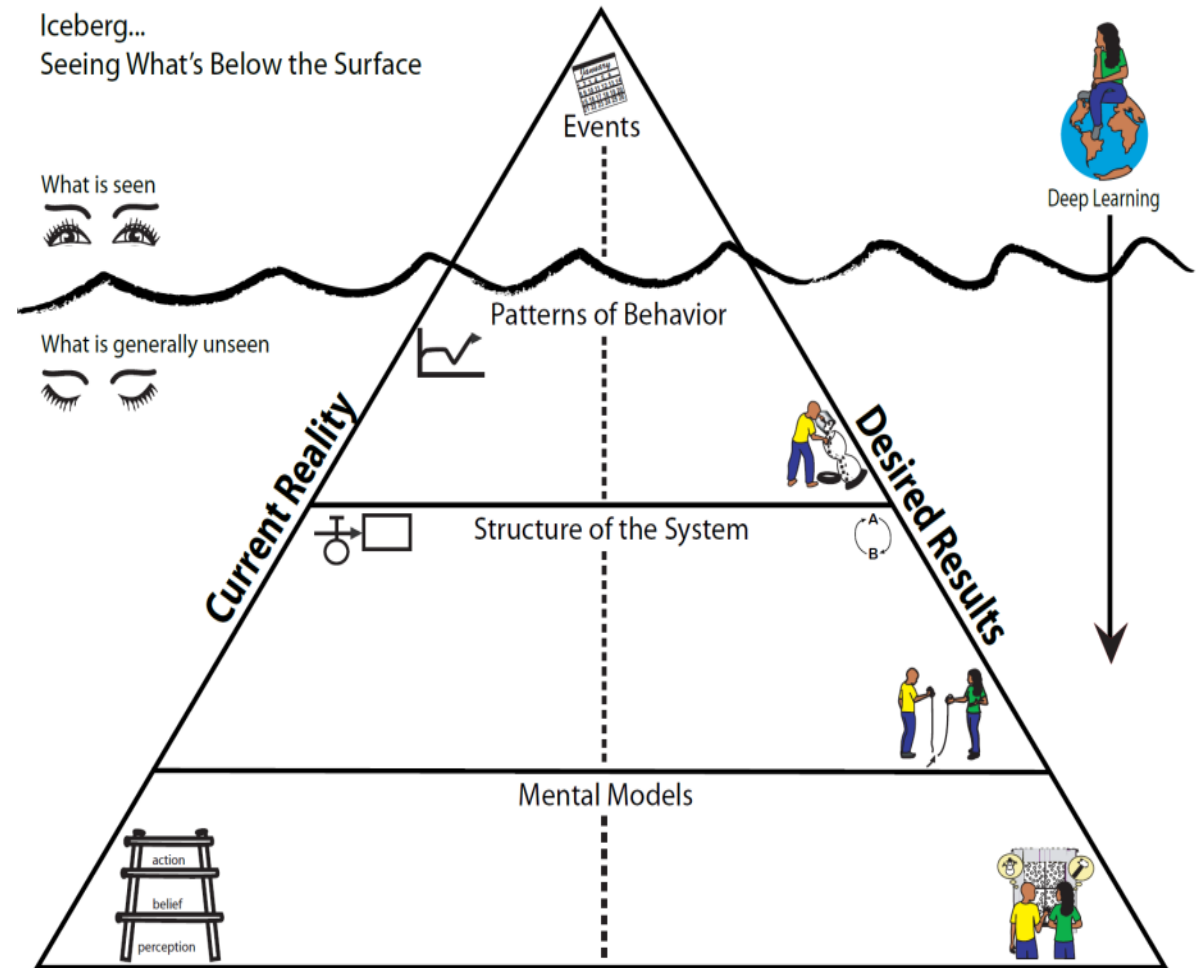
May include: Conscious or Unconscious assumptions and beliefs

Discover your own iceberg

Activity description:

With the perspective of each of the ecosystem member / stakeholder that you identified, create an iceberg for your problem / challenge on a flip chart.

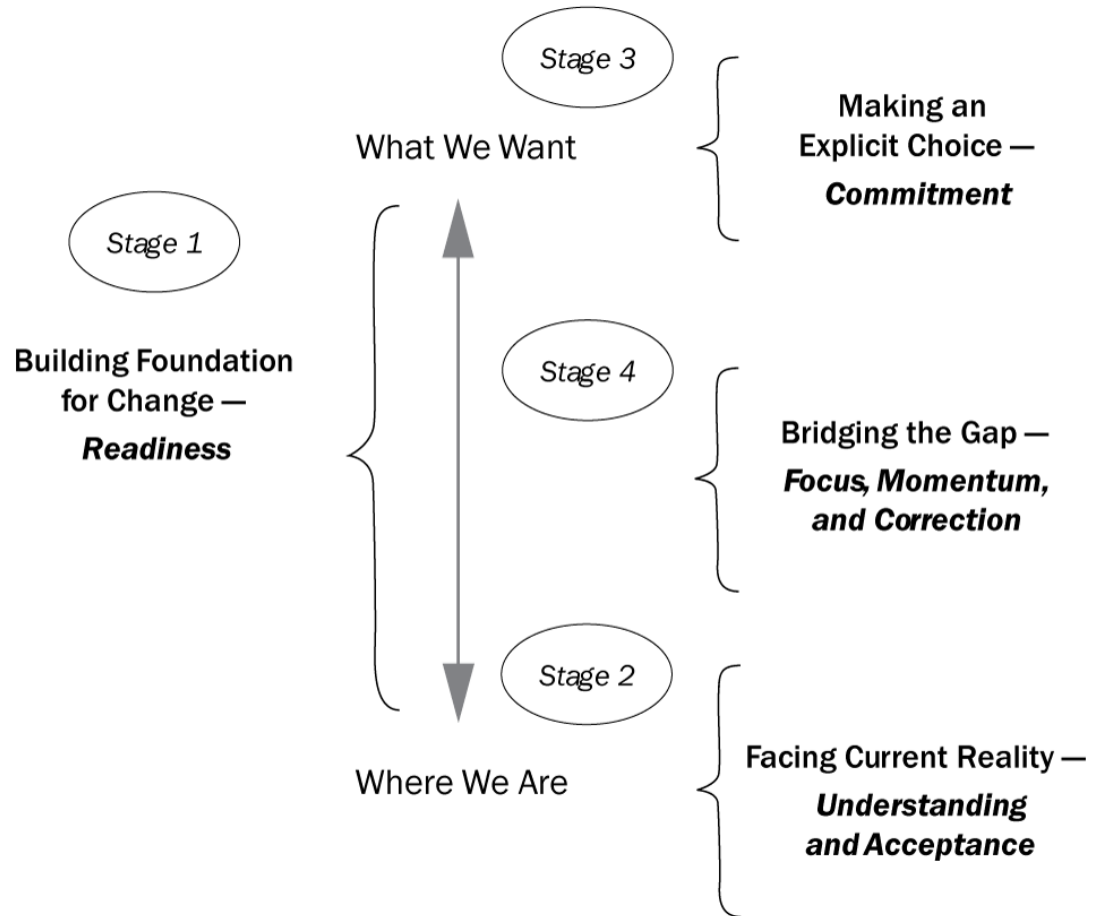
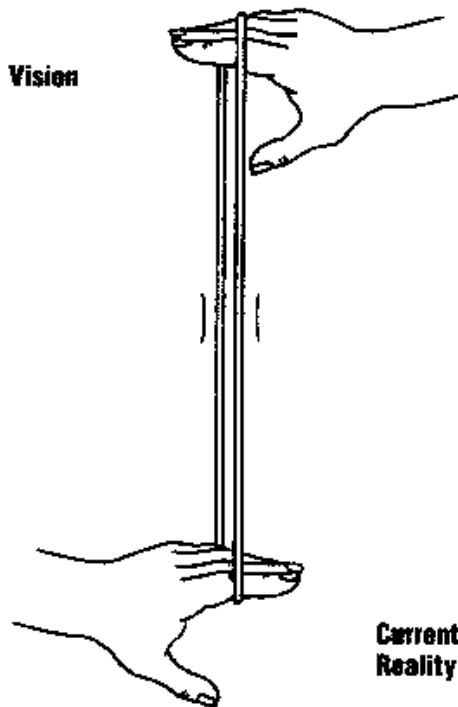
Important note: First build the left side of the iceberg (top to down) and then build the right side (bottom up)



Bridging the Gap Between Reality and Vision

Understanding the Creative Tension

Figure 1 The Principle of Creative Tension



Source: Figure 5.2 from [Systems Thinking For Social Change – David Peter Stroh](#) (right diagram) built on the Figure 1: “Creative Tension” model from [The Fifth Discipline - Peter Senge](#) (Left diagram)

The Four-Stage Change Process

1. Build a foundation for change	2: Help people face current reality	3. Help people make an explicit choice	4. Help people bridge the gap between reality and vision
<ul style="list-style-type: none"> • Identify and engage stakeholders • Establish common ground (where they are & want to go) • Build stakeholder capacities to collaborate 	<ul style="list-style-type: none"> • Identify interviewees • Organize & Begin to improve info quality • Develop preliminary systems analysis • Engage people in developing their own analysis • Surface mental models • Create catalytic conversations & stimulate awareness 	<ul style="list-style-type: none"> • Identify case for status quo uncovered in stage 2 • Compare benefits of change and costs of not changing • Create both/And solutions that achieve the benefits or make hard trade-offs • Make an explicit choice and bring to life through a vision that illuminates what the team deeply wishes to create 	<ul style="list-style-type: none"> • Propose & refine high-level interventions with community (↑ system awareness, “rewiring” causal feedback relationships, Shift Mental models, Reinforce chose purpose with plans, metrics, incentives, authority structures & funding) • Establish a process for continuous learning & outreach (Engage stakeholder, develop implementation plan, refine data, evaluate & revisit plan regularly, expand stakeholder involvement)

Source: [Systems Thinking For Social Change – David Peter Stroh](#)

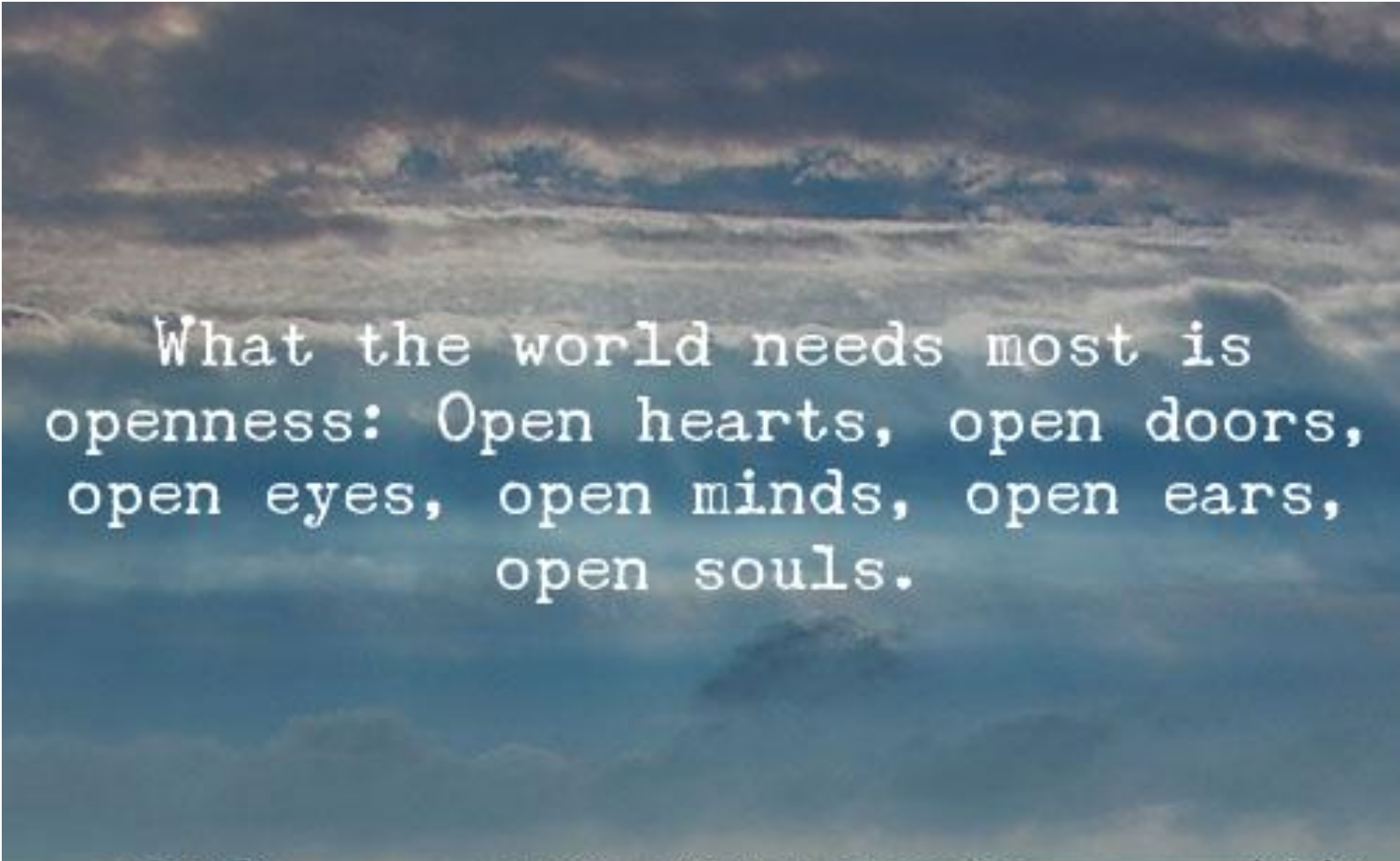
For more information, check
out our [Systems Thinking](#)
[Webinar](#)

Thank you very much!

Yassaman Nouri

Social Impact Entrepreneur and Community Bridge

Yassaman.nouri@gmail.com

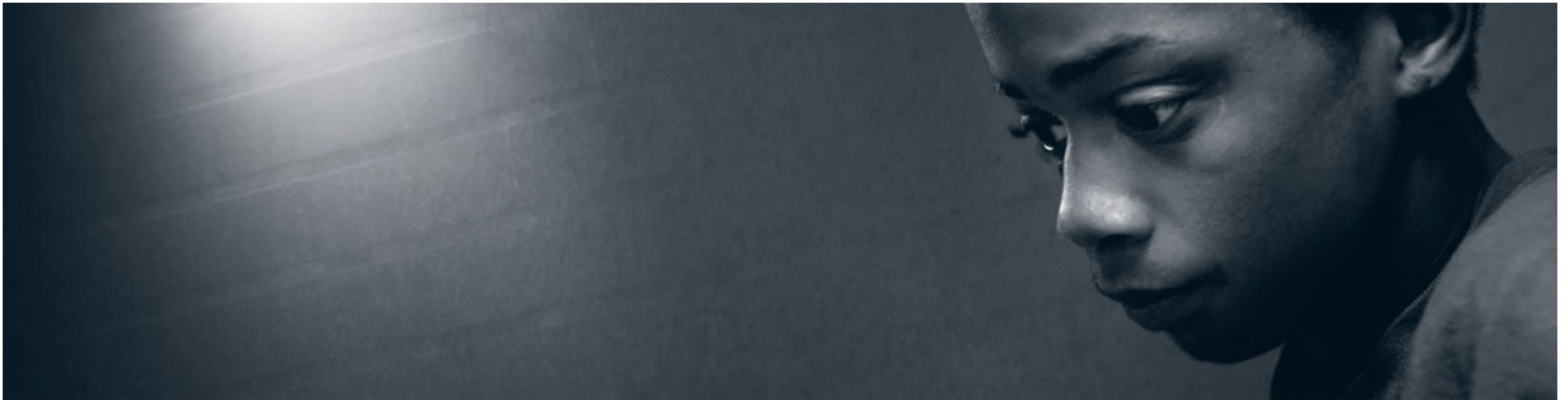


What the world needs most is
openness: Open hearts, open doors,
open eyes, open minds, open ears,
open souls.

Questions?

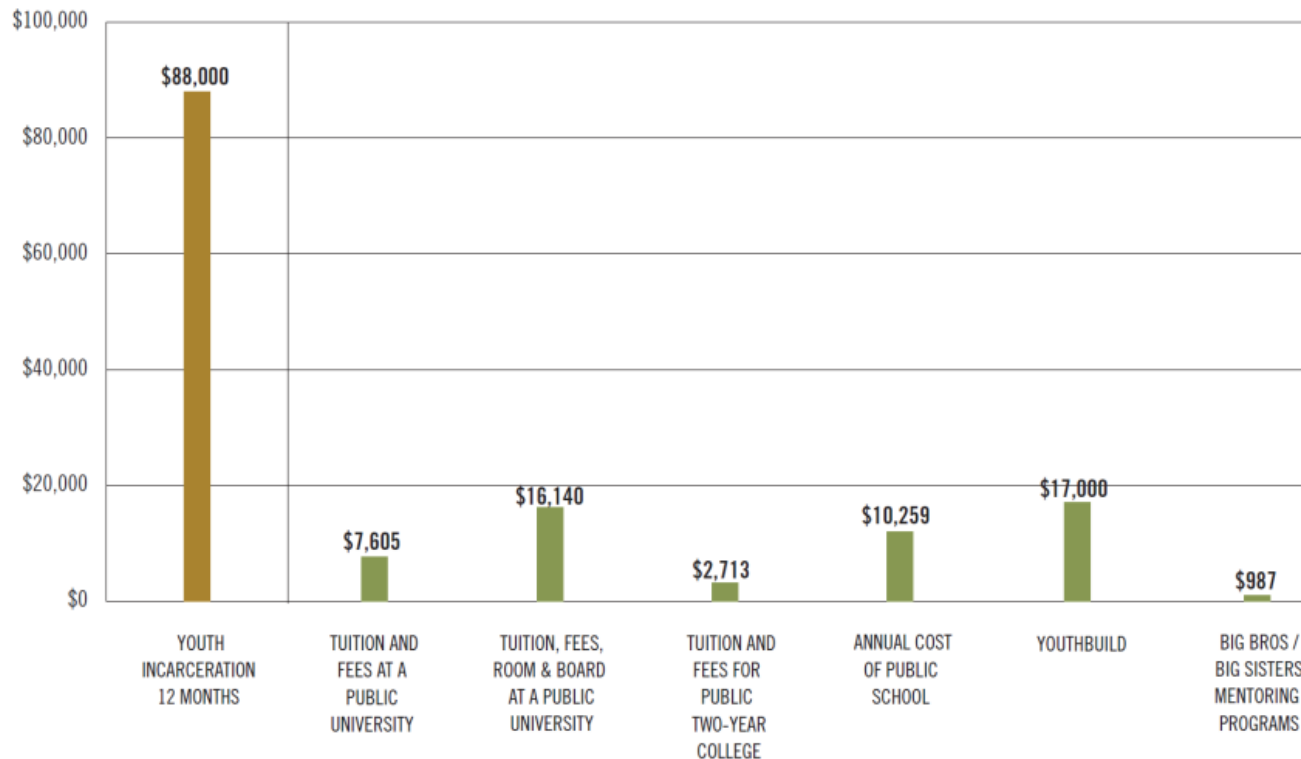


Extra example: Youth Incarceration (U.S. & N.Y.C.)



Short term and long term focused investments

FIGURE 7
ANNUAL COST OF JUVENILE INCARCERATION VERSUS OTHER YOUTH INVESTMENTS



Sources: American Correctional Association (for costs of youth incarceration); College Board (for costs at public universities and public two-year colleges), U.S. Census Bureau (for costs of public education), Cohen and Piquero (2008) (for costs of YouthBuild), and Public Private Ventures (for costs of Big Brothers Big Sisters program).

For more information, visit www.aecf.org/noplacforkids.

Roca

- Mission: To disrupt the cycle of incarceration and poverty by helping young people transform their lives.
- In 2000, learned **Peacemaking Circles** practice from the Tagish Tlingit people in the Yukon Territories, and starts using and applying it to diverse settings, from street conflicts to sentencing and parole circles.
- 2013 results of high-risk youth in Parolees & ex-convicts programs:
 - 89% of had no new arrests
 - 95 % had no new technical violations
 - 69 % remained employed
 - Massachusetts entered into a \$27 million social impact bond with Roca, whereby Roca will be paid to keep at-risk youth out of prison, receiving remuneration directly in proportion to the positive outcomes they achieve

Source: [Roca Inc.](#)

Roca Peacemaking Circle

“We learn to listen to each other in a deep way in circles,” says Roca youth worker Omar Ortez. “You see that a problem is not just one person’s problem, it is all our problem.”



Roca Inc.



ENGAGED INSTITUTIONS

“The ultimate goal of our Engaged Institutions strategy is to create systemic improvements in the way our society addresses crime, poverty and over-incarceration of young people. Roca aims to create a “safety net” around young people, which serves not only them, but also our society as a whole.” Roca Inc.

Partnership building through Circle Talks

In its simplest form a circle talk:

- Is done in a complete circle
- Only the person holding the stick talks, all the rest listen
- The stick is passed around in a clockwise direction
- A person talks until they are finished, being respectful of time
- A person may pass the stick without speaking, if they so wish
- If desired, the stick may be passed around again
- What is said in the circle stays in the circle
- A circle is used to discuss issues of importance
- Is extremely respectful of everyone as individuals and what they have to say



Restorative justice through circles

- **Participants:** Volunteers from justice system personnel, victim, victim's family, offender, offender's family, community representatives, community concerned members
- **How it works:** value driven process combining meditation and conferencing with a "talking piece" typically used around the circle while is being directed by a "keeper"
- **Why:** to bring healing and understanding, and involving the whole community in division making and healing. To build on values of respect, honesty, listening, truth, sharing and others
- **Results:** The offender shares why/how he committed the crime, the victim shares how they were affected economically, physically and emotionally and through sharing, they build a strategy for addressing the crime (is: restitution, or community services) and the causes of the crime with follow-up support circles to track the progress of plan of actions

[Source: Centre for Justice & Reconciliation](#) (descriptions, articles, handbook for facilitating circles, examples, etc)

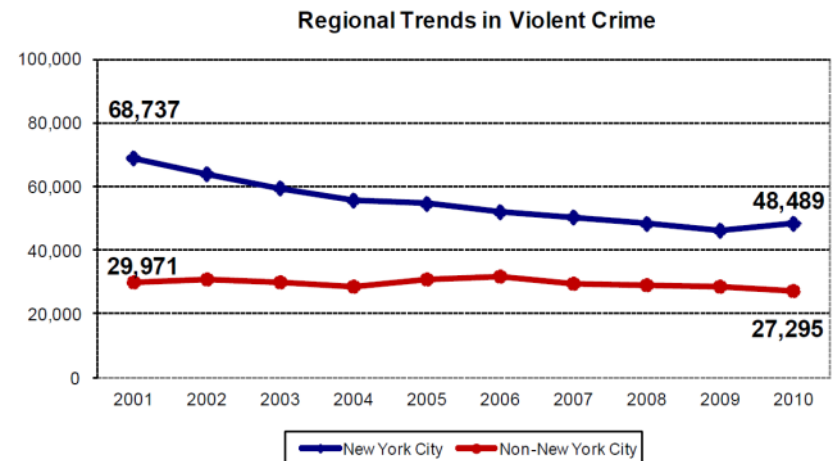
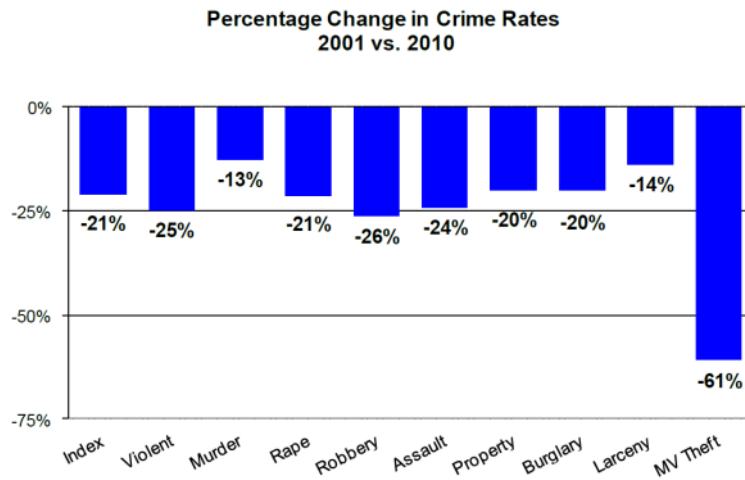
Roca Intervention Model

- Change doesn't happen overnight. Two years of intensive services followed by two years of follow-up give our young people the time and opportunities they need to succeed. [Source: Roca Inc. Intervention Model](#)
- [Relentless Outreach](#) - Knock on doors, engage and re-engage young people, and never give up
- [Transformational Relationships](#) - Build meaningful relationships with young people for the purpose of behavior change
- [Stage-Based Programming](#) - Our programming is tailored to meet young people where they are, cognitively and behaviorally
- [Engaged Institutions](#): Strategically engage systems and organizations in young people's change process
- [Performance-Based Management](#): We rigorously track data and continuously evaluate our strategies and outcomes

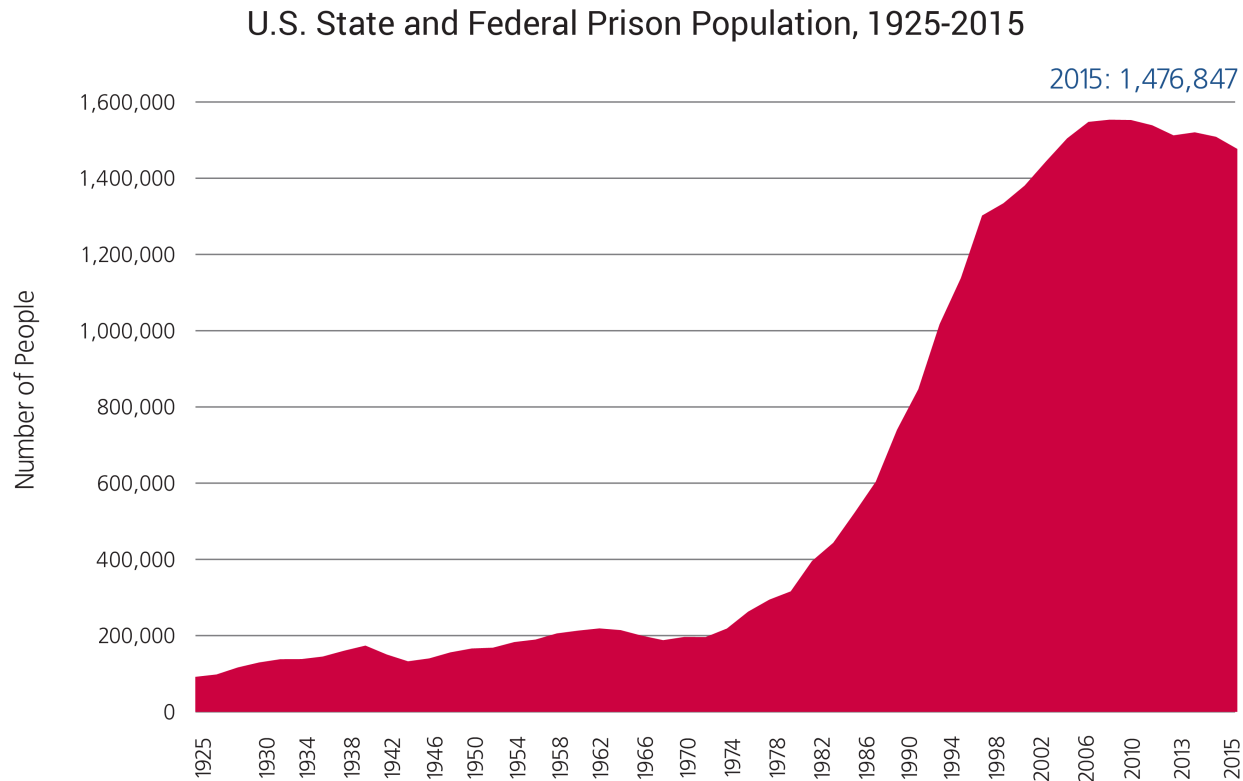
Today, this willingness to open the mind, heart, and will has extended far beyond the four walls of Roca as the organization has evolved into a critical interface between gangs, police, courts, parole boards, schools, and social service agencies. Indeed, many of Roca's important allies are the police departments in the communities it serves.

Crime Rate in NYC

- Over the past 10 years, the overall rate of Index crimes per 100,000 residents declined 21 percent; the rate of violent crimes (murder, rape, robbery, and aggravated assault) fell 25% and property crimes (burglary, larceny, and motor vehicle theft) were down 20%. The largest reductions in crime rates were reported for motor vehicle theft, and robbery (see Appendix 1 for a statewide, annualized comparison of crime rates). Source: [NY Criminal Justice](#)



Incarceration Rate in US



Source: Bureau of Justice Statistics *Prisoners Series*.



- Source: [Sentencing Project - Criminal Justice Facts](#)