Understanding the drivers of youth violence in an urban community

STEVE PETERSON | THAYER SCHOOL OF ENGINEERING AT DARTMOUTH COLLEGE | ISDC 2020

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Overview

- Objectives and big picture context
- Youth Violence Systems Project (YVSP) background
- About the model
- Simulations
- Wrap-up observations

My objectives for this session

- Help to build your understanding around...
 - The community process behind YVSP
 - How we used systems thinking/system dynamics in the project
 - How the work has been/is being used
- Engage you in a discussion around "Big Tent" uses of a system dynamics approach
- Encourage you to use this stuff to support positive change in the world

What are *your* objectives for this session? DROP A NOTE INTO THE CHAT!

Big-picture context

DISPROPORTIONATE HOMICIDE DEATHS AMONG BLACK MALES



Source: CDC (https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_06-508.pdf) Accessed 2020-07-02

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Big-picture context

A FATEFUL ENCOUNTER AT A WORKSHOP

Youth Violence Systems Project

YVSP PROJECT BACKGROUND

- Objective: Improve understanding of community-based violence in Boston
- Strategy: Deeply engage community in development of dynamic model of youth violence

Tactics

- Do your homework
- Engage key stakeholders from the community
- Learn from the source
- Keep the community in the loop
- Show them that you respect them
- Anchor the development effort in community-based design teams—community members have *real* decision-making role with respect to model

Key partners

CAPACITY BUILDERS | STREET CREDIBILITY | HOW DO THE PIECES FIT TOGETHER

Organizational

- Emmanuel Gospel Center
- Black Ministerial Alliance of Greater Boston
- Boston TenPoint Coalition
- High Risk Youth Network
- United Way of Massachusetts Bay and Merrimack Valley

Community

- Bird Street Community Center
- Bowdoin Street Health Center
- Catholic Charities Teen Center at St. Peter's
- Charles Street AME Church
- College Bound Dorchester
- Dudley Street Neighborhood Initiative
- Freedom House
- Project Right

Funding

- Barr Foundation
- Charles H. Pearson
 Foundation Fund, Bank
 of America, Trustee
- Florian O. Bartlett Trust, Bank of America, Trustee
- Frank Reed & Margaret Jane Peters Memorial Fund I, Bank of America, Trustee
- State Street Foundation
- United Way of Massachusetts Bay and Merrimack Valley
- Yawkey Foundation II

Stakeholder listening sessions

GROUND TRUTH AND COMMUNITY ENGAGEMENT

- Community residents
- Community-based agencies
- Academic and institutional stakeholders
- Hard-to-reach focus groups*



Neighborhood design teams

DECISION MAKERS FOR "WHAT'S IN" AND "WHAT'S OUT" OF THE MODEL

- Team = 6 Adults + 6 Youths
- Frequent modeling teamdesign team meetings
- Key tasks design team activities:
 - Generate ideas for model conceptualization
 - Review and sign off for model structure
 - Testing
 - Outreach to broader community
- Work like this can be transformational



About the model

YVSP MODEL OVERVIEW



"Slippery Slope" dynamics

INITIAL MAP DRAWN ON CHALK BOARD AT THE END OF AN EARLY MEETING

- Stocks represent pools of youth with respect to gang involvement
- Flows show movements between population pools.
- This "main chain" created a framework for careful thinking about the drivers of youth violence



- How might we slow movement toward the edge?
- *How might we facilitate movement back toward uninvolved?*



Richer, more nuanced slippery slope structure REFLECTING MULTIPLE CONVERSATIONS WITH BROAD SET OF STAKEHOLDERS

Multiple upstream categories

67-75.

Multiple categories of gang; multiple development stages for gang members



Feedbacks around gang formation and decline



Nonlinearities and High-risk Interactions

NONLINEAR RESPONSE EMERGES FROM OPERATIONAL FOCUS

- The model draws from network theory to create a physical, operational, and endogenous perspective on the relationship between slippery slope dynamics and youth violence
- Within each pool of youth, sub-groups define network nodes
- Connections exist between each node in the resultant network
- The further down the slippery slope, the greater the flux over time of high-risk interactions along the connection
- The emergent network is the physical basis for production of violence in the model

Illustrative "Slippery Slope" Networks



Digging into reasons that the system can get "stuck" KEY FEEDBACK RELATIONSHIPS



These positive feedbacks can drive a community to a low level of performance and then keep it stuck there

Simulations

HTTPS://EXCHANGE.ISEESYSTEMS.COM/PUBLIC/STEVEPETERSON/YVSP-NEIGHBORHOOD/



Facilitating community conversations

COMMUNITY FORUM

- Where is the leverage?
- How long will it take?
- Is it sustainable?
- Are there synergies?



Model experiments can facilitate engagement and learning

- Evidence from the real system
- Conversations with individuals/groups who have a different perspective

Project impact



Life-cycle of a map of slippery slope dynamics



Project impact OBSERVATIONS FROM STAKEHOLDERS

"Being on the Design Team showed me that I had a different role than I thought I had... It kind of boosted my self-esteem as a youth in the community that I can have hands on contact with something that's going to change the community." *Design Team Member, youth*

"I think that [being on a Design Team] is something that every community should go through... this type process can bring people together to really think about how do we collaborate and deal with issues rather than just leaving in to one or two organizations." *Design Team Member, staff at a community organization*

A few wrap-up observations PROCESS AND TOOLSET

- Community members seem to take to this stuff—the systems approach "feels real"
- Many community members seem to have a strong intuition for interdependencies...but they may lack a language to express their intuition
- This stuff (dynamic thinking, stock and flow thinking, feedback thinking, endogenous perspective) can serve as a language for sense-making
- A model can serve as a laboratory setting to facilitate engagement and community learning. Participants can...
 - Relate model results to what's happening in the real system
 - Engage in emotionally de-fused conversations with individuals/groups who have different perspectives