

WEBINAR VIDEO TRANSCRIPT

Office of Population Affairs

A Systems Thinking Approach to Teen Pregnancy Prevention

27 February 2020

JAMIE WEINSTEIN: Good afternoon, and welcome to A Systems Thinking Approach to Teen Pregnancy Prevention webinar. I'd now like to turn it over to Richmond Pajela at OPA.

RICHMOND PAJELA: Thank you very much. Thank you, everyone, for joining. So this week and next week, OPA will be holding a series of webinars on key concepts related to FY 2020 TPP FOAs. These TA webinars are led by experts in the field and will present information at an introductory level on concepts found within the FY 2020 TPP FOAs.

Please note that these webinars do not cover any information specific to the FOA. All youth-serving organizations working on teen pregnancy prevention, including potential applicants, are invited to participate in the webinars and access the recordings at a later time. So yesterday, we had a webinar-- Inspiration, Ideation, Implementation, The Power of Design Thinking in Teen Pregnancy Prevention webinar. The recording of this webinar, the slides and recording audio, will be up on our OPA website within a few weeks if you were not able to attend.

Of course today, we're having our Systems Thinking webinar. And on Monday, March 2, 2020, we'll be having our Youth Engagement Matters, The Power of Youth Voice in Teen Pregnancy Prevention webinar from 2:00 to 3:00 PM Eastern Time. That webinar will cover effective engagement of youth in program planning, implementation and evaluation, and how to cover or apply the power of youth voice as a strategy for system change.

So for an important note, we will not answer any questions related to open funding opportunity announcements during these webinars. Any questions that you have about these FOAs should be directed to OPA and for OASH Office of Grants Management.

Now I'll be introducing our presenter. Our presenter today is Sheri Marlin. She is the chief learning officer at The Waters Center for Systems Thinking, where she provides technical assistance, coaching, facilitation and other systems-thinking capacity-building services to a wide range of education and community-based systems. She consults with a variety of companies and organizations to help them increase their effectiveness in order to achieve their desired results. She works with groups to create alignment between their policies, procedures, and core values.

She is currently working on an NSF project to develop a curriculum to promote equity and increase awareness of STEM careers for urban high school students. She also works as a coach and a capacity builder for school districts and Head Start programs with an emphasis on

increasing the capacity of early childhood educators to intentionally developing critical thinking skills in their students.

Her expertise includes systems thinking and organizational learning, early childhood education, literacy development, leadership, communication, and curriculum. Her previous work experience includes teaching at pre-K to 20 level, school principal, district-level professional developer, curriculum director, and teacher evaluator.

Sheri has authored several books and publications in the areas of systems thinking. Her systems thinking work extends beyond US and includes Turkey, Japan, Afghanistan, and Mexico. She earned her masters degree from the University of Arizona. And now turning over to Sheri Marlin.

SHERI MARLIN: Thank you, Richmond. It's a pleasure to be with you all and to support you in this introduction to systems thinking as you think about how this might inform the work that you're doing in the areas of teen pregnancy prevention.

So we're going to start with just a image. So I just want you to look at that and see what you see. So in your mind, what do you see in this particular image? And I'll give you just a moment to look at that. And I'm going to ask you the same question. What do you see now?

So for most people, they saw a clown face in the beginning and only a clown face. And I can assure you-- I'll go back just so you see the original image is exactly the same as image two, which was simply moved to its side.

Now we're going to talk through some formal and some fancy definitions about systems thinking. We're going to look very specifically at what a systems thinker does in our webinar time together. But this illustration of the clown and the circus I think is something that I hope you will take with you and remember, that this is really the essence of systems thinking. It's how we can change our perspective to see things from a different way, seeing the big picture, and really recognizing that not everyone in our system sees things in the exact same way.

So here, hopefully you've gone from the clown face. You see that whole circus-- the ringmaster, the dog, the elephant. And this is a great image to use with a large group of people because people constantly are seeing new things, getting new insights into their system using this little circus image. There's elephants in the back. So there are many, many ways that-- this helps us really recognize the power of systems thinking and the power to see things in new ways.

So that's a rather visual way to think about systems thinking. But let's take just a minute to talk about what is a system. Well, a system can be very mechanical. So your washing machine, your car, your bicycle is a system. It's a number of different parts, but those aren't parts that are just in a heap or in a pile, but they're put together in a very specific way.

There's structure. The way the parts of this washing machine are put together are structured in order to get you a specific result-- hopefully, clean clothes, hopefully clean clothes with minimal water usage, minimal utility usage. So there's a system to how those pieces come together. They change over time. And if a piece of your washing machine breaks, hopefully, with the power of YouTube or with a good Maytag repairman, you can find out exactly what broke in that system and find a way to fix it.

Human systems, on the other hand, have those same pieces. There's elements and parts. There's relationships. There's things that change. But when we add the element of people to our system, they become increasingly complex and we have more opportunity to use systems thinking in some different ways.

So here's that more formal definition of systems thinking. Systems thinking is a way of seeing the world that focuses on relationships that exist between the parts. Structures define relationships in terms of the behavior of the system. And behaviors-- so as we think about relationships and structures-- and a systems thinker will think about these things over time, not just as a specific event or a discrete series of events.

And you're seeing the language of what is a system. There's these elements and parts. There's relationships. There's behaviors. There's pattern. And this is a way of thinking and a language for describing how things work in a system.

So let's go back to those characteristics of systems for just a minute, these four ideas. And I think that definition right here is a really clear one too, that a system is a collection of elements that interact with each other over time to function as a whole. Sometimes I like to think of systems thinking as a vantage point, a way of which you're looking at a particular set of parts and elements and relationships.

So let me give you a couple examples of system using these four characteristics, and then I'm going to ask you to really begin to think about the systems that you're working in, the systems where you're desiring to bring about change and to impact change in specific ways and see if you can make some connection to those. But let's start with an ecosystem.

So the parts of an ecosystem, it may be the plants, the animals, the amounts of sunlight, air, water. All those could be viewed as discrete elements or pieces, but they are parts that were brought together. They're interdependent. There's relationships that formed between those parts.

So there's the relationship in an ecosystem of predator-prey. There's food supply. There's the quality of the habitat that's the coming together of the amount of food, the amount of water. And these are dynamic. You can measure a population. You can graph how a population of a specific species within an ecosystem may be changing over time.

And an ecosystem has a goal. Typically in natural systems, the goal of those systems is to come to some kind of balance or equilibrium. When one species is removed from an ecosystem, sometimes we think that as a predator or a problem or even an insect, an annoying mosquito, but if they come out of that system, they can have a really powerful impact. So there's a goal of these natural systems to come in balance.

Sometimes those goals are in conflict. Let's say, in our ecosystem, if we think about rabbits and coyotes-- so the rabbits have a desire to live and survive and reproduce in their system, and the coyotes are all about that rabbit population growing. Because for them, it is a greater food supply. And they're competing for some of those same elements, for water and things like that. So in natural systems, there's competition.

And so I just want to move it now to a different type of a system. Let's think about a transportation system. So perhaps in your commute today or somewhere that you went, you dealt with a transportation system. You may have traveled by car. You may have traveled by public transportation. Pedestrians are a part of this transportation system. The laws and the rules that govern our roads, these are all examples of parts in a transportation system.

How those parts come together and interconnect produce the relationships. So sometimes that produces traffic that's pretty unpleasant, or there could be safety issues that arise from those parts. When pedestrians are in competition for right of way with cars can have very dire consequences and results.

Dynamic-- things change in a transportation system over time. There may be, in your region or area, a time when the traffic jams, when traffic is at a much higher rate or pace than it is at other places. But we all have a goal. We have a goal of getting to where we need to be in a timely way. And again, just like with rabbits and coyotes, sometimes those goals can be in conflict.

Hopefully, as I've gone through those examples, you've been able to think a little bit about what are some of the characteristics, focusing specifically on key elements, of the system that you are working in with respect to teen pregnancy prevention. I would encourage you to recognize that your systems, whether they are agencies or educational programs, your systems interact with other systems. So for example, some of you may interface with health care systems, with educational systems, with juvenile justice systems.

And the idea of a nested system is a really important idea in systems thinking and systems understanding, recognizing the structures within systems. But within those systems, within your system, are some key parts and some key relationships that can really be helpful and important in looking about how you want to bring about the desired change in your particular system.

So this is a poll question. This would be a great time for you to enter something in the chat if you've had some ideas about the elements of the system that you are working in. And Jamie will share some of those as they come in. This would also be a great-- this has been quite a bit

of information. So this would be a great time-- if you have a specific question about the systems thinking content, feel free to share some of those as well, Jamie. So we'll give you just a minute to think about key elements of your system.

JAMIE WEINSTEIN: Thank you, Sheri. We did have one question, if you could possibly explain a little further the definition of dynamic, please.

SHERI MARLIN: Excellent. Excellent question. Thank you. So dynamic, really, in that context, is talking about change, something that changes over time. In our ecosystem example, it might be population. In traffic, it might be the number of the cars on the road at any given time.

As you think about elements of your system, you may be paying attention to graduation rates, accessibility to health care. But it is that the systems thinker would say this is not just a single event, but as things that change over time.

JAMIE WEINSTEIN: We did hear from one participant that their key elements are the health department, the school department, and local health care providers.

SHERI MARLIN: So again, how your system interacts with those other systems is definitely something that would be important. And we're going to look at a tool here in just a minute, and we'll bring in some of those systems connect.

But we sometimes use-- there's a toy, actually, that's called a Hoberman sphere. And it has all of these pieces, but you can get them in different sizes. And Hoberman's a really nice way to show that systems are nested, to go a certain way...

And this idea of education, you have a school system, a school district that operates within the confines of a state school system. The school district has individual schools. The school has classroom. Classrooms then have students, who all have their individual family system.

So this idea that our participant just shared about how the health system, the education system impacts their work in teen pregnancy prevention is very important. But we're going to get a little bit more specific here in just a second and hopefully look at what are some of those pieces of your programs in your agencies that are really significant to the work that you are doing and that you are hoping to scale and to increase.

And this slide is just here to say, how can we use systems thinking to help us manage this complexity? So if you say that the first triangle, three people, three lines-- perhaps it is a case manager, a client, and a referral source. So there's three people within your system. And you have three people, three lines. So the client is connected to both the provider and the referral source. The referral source, likewise, is connected to both of those people.

But I would imagine that many of you are from programs where one case manager could easily work with 13 people. Just say they have 13 clients on their caseload. And that creates 91 lines of complexity and relationships.

So I put this slide up just to underscore the importance of, when we think about why we need to look at our systems differently, why we need to take the time to think about what are those elements, what are those discrete pieces within our system-- because we rapidly jumped from three lines of complexity to maybe 91 lines of complexity. In reality, probably you have programs that serve hundreds of students and hundreds of youths. And how we manage that is an important part of going forward and an important part of the proposals that you're working on.

So if you think about elements of your system-- so remember, there are four characteristics of a system-- elements, relationships-- we've talked quite a bit about relationships-- nested systems, those other systems, and even the connection of pieces within your system. There are things that change, but take just a minute to reflect. And if you'd like to put something in the poll, you certainly can as well. What are some of the important goals of your teen pregnancy prevention efforts?

And one of the reasons that we talk about what is the system and that we have spent some time on this particular concept is that goals often are in a little bit of competition with one another. So sometimes, it's not even competition, but just a little bit of conflict. When we're looking to achieve the same thing but we do it in different ways, people have a different perspective, a different take. Stakeholders within the system can have goals that may feel like they're in conflict.

And so to see the bigger picture of the system and to see how those goals may be in conflict with other people who are also seeking to do really good work can be really important. So again, just if you have some goals of your work.

JAMIE WEINSTEIN: Hi, Sheri. We have received some goals. They include reduce teen pregnancy or reduce teen birth rate, tools, working on behaviors, learning, and skill building--

SHERI MARLIN: Great.

JAMIE WEINSTEIN: --clinics, working on contraceptives and testing, as well as parents and faith organizations talking to kids.

SHERI MARLIN: Cool. Excellent. Please keep those things in mind, and we're going to continue to dive here just a little bit deeper. So another question that, by virtue of our webinar format, I'm just going to ask you to answer in your head and I'm going to share with you what I typically hear, if I said to you, what is a farmer, you would think or say-- and what we often hear is something like, someone who grows food, someone who works with cattle. But the question is answered in terms or in regards to what that individual does.

Perhaps if I said to you, what is a teacher, someone who teaches, someone instructs student, someone who cares about students. So at the Waters Center, when we ask the question, what is a systems thinker, we really believe that we answer that question best in terms of what a systems thinker does.

And so we define systems thinking, yes, as a vantage point. Yes, it is all those characteristics of systems. It's about relationships, the dynamics. But if you want to know what to do as a systems thinker when you're sitting down and you're working in your agency-- you're trying to manage complexity. You're trying to put together a proposal-- our theory is that a systems thinker really does these 14 things.

Now, we're not going to be able to cover all 14 of these in depth in the time that we have. But I believe that, in your chat box now, there will be a link to our website where you can actually download these 14 habits. You can also find reference to these habits. And on sort of a set of cards, like physical cards that you can flip online that puts some questions on the back, that will help you get to using these habits and systems thinking as you plan and as you carry out the important work that you're doing.

This is what a systems thinker does. Now, we've talked about some of these already. We've talked about that a systems thinker-- the clown photo was the beginning, about seeing the big picture, seeing the clown, seeing the circus. We talked quite a bit about this one, that it's really important to change perspective in order to increase our understanding of the system.

When we think about those 91 points of complexity with just 14 people involved in a system, that's a lot of perspectives to take into account and to try to build an understanding with and around. So here are some habits.

So here's another somewhat lighthearted view, but really serious, about why take a systems view, why take the time to think about those 14 different habits. Because even though those guys are pretty happy that the hole is not at their end of the boat, ultimately, they're going to sink too. And so it's not just the men who are bailing, but everybody in the system.

Everybody-- the education part, the health care providers, all the things that we heard in that goal that Jamie just shared are really important parts of the system. And we want to use the tools and habits that we're going to talk about to see that total system picture.

So this is an iceberg, and the iceberg is a metaphor that we use often in systems thinking. Because if you know the story of the Titanic-- and I am told by scientists that about 10% of an iceberg is visible above the waterline and 90% of that iceberg resides below the surface of the ocean, below the waterline. And what sunk the Titanic was not the 10% that they could see. It was the 90% that they could not see.

So another definition, if you will, of systems thinking that I think is really helpful is systems thinking are the tools and habits that help you see beneath the surface of the water. It's where

deep learning happens. It's where leverage happens. When you think about planning programs and ideas and coming up with solutions, where can you find the leverage in a system in order to be able to make maximum impact with the resources that you have?

Sometimes in systems thinking, we use the idea-- and this is a quote from Peter Senge, author of *The Fifth Discipline*. I really like this one. "Be as honest as you possibly can about your current reality and as clear as you possibly can about your desired results." And that's how you'll bring about effective change.

So one way to view an iceberg and to look about it is to think that you have an event, a service, an opportunity. And I think it's great, as organizations, to think about those events as an opportunity because there are so many things that you could do, programs that you can provide. And how do you make a really good decision, an impactful, change-making decision about which one of those you want to engage in and which services you can provide most effectively and efficiently?

So as you go down the side of the iceberg, you begin to look at patterns of behavior, change, dynamics, just like the question that was asked. I would really encourage you that as you think about these-- what's been happening, what are the trends, what things have occurred in the past-- that you take the time to physically grasp some of those trends.

And we heard those in the elements. Many of the elements that were shared by Jamie were trends-- pregnancy rate, conception, contraception, accessibility. Those kinds of things are easily graphed over time.

I'll just mention that we're not going to spend a lot of time on patterns of behavior and graphs in this webinar, but I would encourage you, at this level of the iceberg, to really think about those trends and take time to physically grasp them. It's one thing to think about data, to see it in a table, and it's another thing to visually see it in a graph that uses time on the x, on that horizontal axis, and shows how things have changed.

The other thing that physically making a line graph of these stories, of the patterns of behavior in your system that it does for you, it allows you to draw a line today and do a hope and a fear, a trajectory. What would you like to see happen perhaps as a result of the proposal that you're creating, and what's your fear, your fear that could happen or that will happen if it doesn't go forward? So really, thinking of patterns and behavior in terms of the past, but also in terms of the future.

Going deeper in the iceberg, we go down to structure. We see another one of the habits of a systems thinker. A system structure generates its behavior. We're going to talk about that quite a bit here in just the next few minutes.

The structure of a system-- and we can represent those with some systems tools, which we'll be doing as part of this webinar. But structures are also the policies, laws, all the things that

govern the work that you do. Some structures we have tremendous influence over, and some structures we may not.

There may be some things in the state statute or federal law that are there. They're federal laws. Those aren't things that we can change as we seek to work in the programs and design the interventions that you're seeking to intervene. And so a systems thinker is really good about focusing on those structures over which they have some control, over which they can make a difference.

And then at the deepest level of the iceberg is the mental model. And the mental model are the attitudes and beliefs that people have about a system.

And here's another one of our tenets of systems thinking. We believe, if you really want to make change, if you want to make impactful change as a systems thinker, you have to deal at the mental model level. So we are going to also spend some time in this webinar talking about mental models.

So we've talked about big picture. I just talked about behaviors and patterns change over time. We're going to use some tools for structure and for leverage and how you can identify those. We are going to talk about people's mental models, and we're going to see how circular feedback can be useful in propelling your good work forward.

So this is a tool. This is a very basic tool of systems thinking. It's called the connection circle. It connects to this habit, systems thinkers make meaningful connections within and between systems. And one of the things that-- again, back to our nature example, this is a farmer.

As I share this example and the one on the next slide, I would really ask you, if you've got a piece of scratch paper, if you're doing this webinar with some colleagues, that you might put a piece of paper or something to draw on in the center of the table. And you take those elements that we talked about at the very beginning about 20 minutes ago, and you place those around the circle just like these elements have been placed here.

So in this case, if my ultimate system is the farmer's success, the farmer's ability to produce crops, certainly, the farmer's success impacts the fruit. That line's not there, but I could draw a line from farmer success to his fruit. The fruit impacts the success.

You should actually see a little closed loop in this system. So fruit produces seed. Seed produces plants. Plants produces fruit. And we call that a reinforcing loop. And we're going to see that loop in a couple of different contexts over the next couple of slides.

Now, because very few things can reinforce forever, we have predators. Bunnies are going to come, and they're going to eat some of the plants, which is going to reduce the yields of fruit, which will reduce the seeds that are produced.

And then you see some blank lines here. Because one of the important things that a systems thinker does is they look to try to determine what are the other elements in the system that they're not taking into consideration. Now, again, agriculture is a huge field with tons of scientists giving a lot of thought to how these different pieces come into play. And I'm sure there are many things that are not on there. But hopefully at this point, you have taken some time to create your own connection circle with your teen pregnancy prevention system in mind and that you're beginning to physically draw some additional connections.

So here's another one. Here's another connection circle just with some typical variables that might impact any of a variety of businesses. So again, we have a closed loop in here. It's pretty straightforward, that I'm really interested in sales of my product. The more sales I have, if I've done a good job, hopefully I'll get more recommendations. Recommendations will lead to awareness of my product. Awareness of my product will lead to more sales.

So I may be really, really focused on sales and looking for all the different ways that I can increase sales. But the principle of reinforcing feedback says maybe the sales, the trajectory, the graph, if you will, of my sales is not increasing at the rate that I would like it to. So maybe I need to think about how can I increase awareness. Recommendations may be one way, but is there another way that I can increase awareness of my product or my system?

And there's a connection here between innovation and cost. So if I am manufacturing something in a field where innovation really matters but innovation really drives up my cost, then I might ask, what else was connected? Is there some way that I can innovate without increasing cost?

What are the connections between innovation and profit? What are the elements that need to go between that? So again, asking questions to help me understand how the variable, characteristics of the system, the variable or the elements, what are those relationships? And that's what these arrows are showing. They are designed to show causal relationships between elements in the system.

So why would we do this? And let me bring back our iceberg here. Because we've got an event. We're trying to be as honest as we can about our current system. We've identified some patterns of behavior. And now this connection circle is an easily accessible systems tool to help you to look at the structure of your system.

And again, as we've seen, you're working in systems. Your systems are nested in other systems. Ultimately, if you're looking at a proposal, it's going to be connected. What are those connections? And again, I'm really encouraging you that you're physically working on some of these as you go.

Now, both of the ones that we've just looked at, both of the connections circles, the one about farming, this one about sales, have what we call a closed loop. So you can tell a story from

recommendations to awareness to sales back to recommendations. And you can tell that story over and over again.

This is the principle of reinforcing feedback. Feedback can be reinforcing. It can be balancing. For our purposes today, we're really looking at structures in your system where you might be able to take advantage of reinforcing feedback.

The core theory of success that you see on the screen was developed by Daniel Kim. Daniel's theory is that as we increase the quality of our relationship, we increase the quality of our thinking. If we increase the quality of our thinking, we increase the quality of our action. Increased quality of action will lead to better results, and better results will lead to greater relationships.

Let's go back to our manufacturing company in the loop that we had before, and let's say that those sales really were going through the roof. The trend of sales and profit in that company is unparalleled. Well, if that's true, then it's likely there's a lot of celebration going on, some good relationships, trusting relationships.

Sales are increasing. Sales trusts manufacturing. Manufacturing trusts marketing. People are working, supportive together, which is increasing their quality of thinking. If we're getting along, if we're talking, if manufacturing is talking to marketing, they can begin to have some new ideas. They're generating some innovation that perhaps isn't costing them a lot of money or a lot of expense. That quality of thinking improves the quality of actions. More results. More relationships.

So that's the core theory of success going in a very, very positive direction. But let's say results have stalled just a little bit. Maybe those profits aren't increasing at the projections that the corporate board would like. And in that case, sometimes we get really focused and stuck on results.

So we look at, how can we get that rate of teen births down? How can we get that rate-- and we focus and we fixate on a particular result. The principle of reinforcing feedback says, if there's something else in this loop that you have control over that you can use as a driver to reinforce this loop in the direction you want it to go.

So for example, if the results aren't exactly where we would like them to be, what can we do about our quality of thinking? And I would advise you that pausing today to spend a little time on this webinar, thinking about the tools and habits of systems thinking in relation to your system and your project is one way to pause, to improve the quality of your thinking, leading to an action that will drive your results, give you cause to celebrate relationships.

I want to pause here and say one more thing about these reinforcing loops. Just as they can reinforce in a virtuous direction, in a positive direction, loops can also reinforce in a vicious direction. So those Ses suggest that this loop-- these variables are going in the same direction.

Quality of relationships improved. Quality of thinking improved. Quality of action improved, and so on.

Same direction also means they're going down. So perhaps you're working in a company or a place-- many of us may have experienced this-- where morale is really low. Quality of relationships is not good. There's not a lot of trust. People don't get along. They don't spend time together outside of work. They don't look forward to coming to work.

Their thinking that they're able to do as a group probably isn't what you would like. They're more competitive than collaborative. They're not coming up with good ideas together. Quality of thinking goes down. The quality of action goes down.

People aren't making clear decisions. They're not making decisions in the best interest of the company. Their actions don't reflect a real commitment to the mission and the drive, which is going to have an adverse impact on results. Results are also going to go down.

So again, one of the principles of reinforcing feedback is that we can use it to drive things in the direction that we want them to go, but sometimes things are going in a direction that we don't want them to go. And then we can use this principle of reinforcing feedback, circular nature of conflict, cause and effect relationships in order to change the trajectory.

Now, that may sound just a little bit complicated, but it's not. And I'm going to use some first graders to illustrate that they can understand reinforcing feedback. So what you're going to see is a very brief video of some first graders that were having problems on the playground, and they were saying unkind things to one another and they had hurt feelings. And unkind words led to hurt feelings.

So they came up with some solutions, or what we would call they wanted to break their reinforcing loop, things like playing a different game, playing with a different friend. Those were some ideas that they had. But in this little clip that you're going to watch here in just a minute, they actually came to a different understanding of how to use reinforcing feedback to solve their problems. So Steve, if you would please play the video now.

[VIDEO PLAYBACK]

- And our reinforcing loop is about we get mean words, hurt feelings. Mean words hurt feelings. Then we get fights, and we get mean words again and hurt feelings. And then we thought about some ways to break the loop.

- Mhm. We thought about all our ways to break the reinforcing loop, but we tried this. This is crossed out. We didn't really get to-- well, it didn't work. That, saying I'm sorry, kind of worked, but we haven't tried these out yet. And the next time we get in a fight, we're going to try to try it.

- What would the behavior over time graph look like for this reinforcing loop?
- First, it would look like that. It would be-- and then we would get hurt feelings and mean words. It would keep looking like this. And then one of the leverages would make it go down.
- If I have hurt feelings, if I play with someone else, if that person doesn't really want to play with me, I could go ask another person.
- If this reinforcing loop said nice words, nice feelings, we could get rid of this, get rid of this, and get rid of these, and change them to something that's not bad, change it to something that's good that will keep the loop going.
- The thing is whenever you have a reinforcing loop that's actually bad, you need to either find another friend or, rather, just think of something that can break the reinforcement loop. And if it was also a good reinforcing loop, it wouldn't have all these problems.

[END PLAYBACK]

SHERI MARLIN: Thank you. Thank you. So again, these guys did a pretty good job, that they recognized that they were in a viciously reinforcing loop. And rather than just trying to break that pattern, they wanted to change their drivers to something positive.

And I will tell you that-- some of you talked about behavior systems, that that one actually impacted that school for a very long time. And those students were really excited to help us solve other problems. Jamie, do we have any-- we have, again, given a lot of information. We're going to spend some time on structure and then move to mental models. Are there any questions or concerns we need to address before we move forward?

JAMIE WEINSTEIN: We did have a couple questions, Sheri, if you could address how to determine the boundaries of your system-- for example, for individuals that work with youth in schools and community groups.

SHERI MARLIN: That's a great question. And that really shows me that you're thinking like a systems thinker. So I don't know that I can tell you, in this webinar and out of context, how to determine boundaries, but I'll say it is really, really important to do so.

And an illustration that I really like is the idea of a-- it is an education example, but it's out of a research paper. And I was talking with a librarian many years ago now, but he said, you used to be able to tell students to do a report on China. And they went to the Funk & Wagner Encyclopedia. And they pulled out volume three of C, and they could flip through that and get an idea about what it is that they needed to know about China.

If you tell them today to a report on China and they type it into Google, they're going to get over a million responses. And those responses will have everything to do from dynasties to

China to Tiananmen Square. And so they have to have some parameters. They have to know-- one of the skills we have to teach students is how to establish boundaries in that system. Same thing in writing a good paper. How much can you cover?

But for systems thinkers, it gets to that idea that we just a little bit about. What do you have control over? And to talk about Stephen Covey's model, where can you best exert your circle of influence in order to shrink your circle of concern?

So I think you want to take the boundaries of a system-- when you're thinking about the groups that you're working with within schools, within community agencies, how big can you make your system in order to get the best picture possible while still having it be something over which you have some influence so that you're not just kind of spinning your wheels and circle of concern? And it's an excellent question, and it's really an important thing to think about.

To take it back to the iceberg-- and yeah, I'm going to go ahead and get to that iceberg just a little bit. That boundary of the system really does impact the structure, but you might want to spread it out to go to the mental model level. And I might suggest that-- that when you're thinking about, that you be as inclusive as you can, because of this human system, of what are the mental models that are at play. What are people's-- their deep values, beliefs, understandings of the system, and then how can you incorporate those into the plans and the projects that you design?

JAMIE WEINSTEIN: One more question, yes. Would you be able to discuss leverage points a little more and describe some concrete examples?

SHERI MARLIN: Sure. So I'm going to go back. There's a slide. So a leverage point-- and there are lots of ways to determine leverage points by applying multiple tools. But I think one of the reasons that I chose to share this idea of reinforcing feedback is that you can look at-- once you get a loop-- so hopefully you took some time. You built a little connection circle or you will do that as you reflect on this webinar.

If you can find a closed loop in there, some kind of reinforcing system within the system that you've designed, then you can talk about where is the leverage. So this was one that we have designed because it works with lots of organizations. And one of the things that many people, particularly in human services or-- and companies they're trying to develop buy in. And you have a new initiative, and you need people to believe in it and to work toward it.

Now you see again the plus and the S here-- so same thing. It's moving in the same direction. So there's evidence that an initiative has value, research-based best practice. There's the perceived value of that initiative-- the number of people buying in and the level of engagement. So that probably affects, in some way, most of the systems that you're looking at.

If you wanted to look for the leverage, you might ask yourself questions such as, where am I already seeing the most results? So for example, if there's a lot of perceived value of initiative--

you have a lot of early adopters-- then perhaps you can look at how you have developed those early adopters, and that might be a point of leverage.

Maybe you have a plethora of evidence, like it has been researched. It's been proven over and over in different contexts or in contexts that are very similar to yours. So then the leverage-- if you're looking up here at this top box, the evidence might be to think about how can you best make that evidence accessible. How can you disseminate it to the people who would then move them from understanding the evidence to perceiving values to being one of your early adopters?

Maybe you have a lot of people buying in, but you see a weak link here. So number of people buying in is not leading to a high level of engagement. So is there some support that you could provide to the people who are already using this program, the agencies, the schools that would help them move to a higher level of engagement? So leverage really is about looking for where in your system can you have impact.

And I'm going to go to this next slide. This is perfect lead in because we have that leverage habit and the idea there, the physical leverage, the moving. But this, I think, is one of the best and most frightening quotes in systems thinking, that "your system, any system is perfectly designed to reduce the results that you are obtaining."

This is a powerful truth, and it is housed in the structure level of the iceberg. It's empowering and a bit frightening to recognize the power we have individually and collectively to achieve our desired results. Recognizing that a system structure generates this behavior allows us to make high-impact change without casting blame. The failure of the system to produce lies in the structure of the system, not in the people.

So this is one of our habits illustrations, but I think it illustrates-- well, you see the boy has a kite and the girl has a pinwheel. Both toys are made out of paper, stick, and both of them are acted upon by air. And yet, the behavior of those systems is very different. The kite goes up, up, up while the pinwheel goes round and around and around. So the structures of our system are often where we can find leverage.

A specific example, an employer wanted to increase attendance at work and so they put in a very rigid personal leave policy. You could only take personal leave of certain days. It had to be pre-approved by a supervisor. If it was on a Friday or the day before a holiday, it had to be approved by a higher supervisor. And it decreased absenteeism for a very short period of time.

Over time, it decreased personal leave, but it made a huge increase in sick leave because people were like, I need the time off. I'm not going to go through these hoops. I'm going to just take sick leave.

So that was an example where the structure of that system drove people to behave in a way that they perhaps wouldn't otherwise have done. They wouldn't have taken unnecessary sick

leave, but it was so cumbersome to take personal leave that they did that. So that would be an example of a structure where they were attempting to have leverage over increasing attendance at work and they actually backfired, a solution that backfired for them. So those are subtle kinds of things, policies, procedures that impact people and affect the systems and the desired results that they're after.

I am mindful of the time. So I think mental models is the highest point of leverage. Again, we're still on this leverage question because this is where as an employer, as a boss, I can create some-- I can try. The example I just gave was a non-example.

But I can try to create structures that get people to behave in a certain way. But if I want them to behave in the way that long-term has the best interests of customers in mind, really gets what customer service is, then I need to change their mental model and their deeply held attitudes and beliefs about the system.

Here's another "what do you see." And again, we're just going to do this. I'll tell you what people see. A lot of people see the frog first. So the frog-- here's the nose, the eye, the leg going into the water. Some people see a horse. So here's the eye, his mane. Here's the horse's ears. Some people see both of those images right away.

And then I always have some creative people who are like, well, it's a fish. Because see, here's the mouth of the fish and the eye of the fish. And he's grabbing food down here, and his back fins are just up here. But I think in the drawing, the artist intended you to be able to see two things, the toad and the horse.

But mental models are based a lot on our experience. They're deeply held beliefs or assumptions. And your mental models probably had a lot to do with what you saw in that previous image. And here's what we believe. We believe they're the highest form of leverage in a system.

So another tool. This one was developed by a man by the name of Chris Argyris at Harvard. And his idea is that all of us have a ladder, and our ladder sits in our pool of experience, what we have come to believe. We perceive things, as in the case of this picture-- maybe a toad, maybe a horse. And as a result of that, we have a belief. We had a belief that that was a picture. And again, we've all had different experiences of a horse, of a toad.

And then the idea of the ladder is that our beliefs lead us to take certain actions. So if we believe that our primary role as a receptionist in an office is to deliver superior customer service, then we are going to wear a smile, come to work enthusiastic, focus on the people who come to our desk. And we are going to act in accordance to our beliefs about the importance of customer service.

But the power of the ladder of inference, if you will, is this reinforcing belief down here that basically says sometimes if we perceive-- if you only perceive the frog, then no matter how hard

I try to show you the horse, you're not going to notice the mane. You're not going to notice the elements of that drawing that showed us the horse.

In that drawing, it's not a big deal. When you're going to service clients and people that we need to understand and ask ourselves the question of systems thinking, are there parts of our system that we need to pay attention to that we are not paying attention to?

And again, considers how mental models affect current reality and the future. So what are the mental model shifts that we want to make in the programs that we design, in the services that we deliver? And how can we best bring those about to our clients?

This has been a very brief time together, so I want to highlight a couple of resources that you can use. I'm going to start with this third bullet. The thinkingtoolsstudio.org is a product of the Waters Center of Systems Thinking. There is a course for every one of the 14 habits that we've highlighted as well as a tool.

We didn't get to spend nearly enough time on the iceberg. Actually, if you go to the tool courses, there's a course on the iceberg. There's a course on reinforcing feedback. So if any of these tools seem like they would be useful technical assistance, you can get a lot of resources there.

There is the book that was mentioned earlier, the Habit-Forming Guide to Becoming a Systems Thinker that I authored with my colleague, Tracy Benson. And then thesystemsthinker.com is, again, a website of articles that give you some great guides to using these tools as leaders and administrators.

So with that, I'm going to turn it back to Richmond, and he can tell us a little bit to conclude with unless, Jamie, there's something else. If there's-- again, the time is 12:58. So I know you have some closing housekeeping. But I'm happy to address anything that feels urgent.

JAMIE WEINSTEIN: I do have one more question here, so I think I'll pose it and give you a minute to answer it. It is, where do you place things like culture, human relationships, disconnection and alienation and trauma within the system?

SHERI MARLIN: Well, so all of those, to me, are mental model. Those are those-- and they fit with the ladder. Because the trauma, that's the experience that-- and when we think of trauma-informed practice, it really is recognizing-- the ladder of inference is a huge piece of that, recognizing that someone else's story is totally impacting their perception of the system. And how can we structure a system that minimizes their trauma, that helps them get into that rational, non-emotional part of their brain where we can think and move them forward?

So the ladder of inference-- and there's a story that I've seen in a lot of trauma-informed care that mirrors the ladder of inference very, very closely. So I would just say that those are all pieces that are really deep into the system, and that the iceberg and that the ladder can be

really great tools to help see and make the connections with those so that we design systems that work.

JAMIE WEINSTEIN: Thank you. We have no further questions.

RICHMOND PAJELA: OK. Well, thank you, Sheri, for that wonderful presentation. I hope everyone learned as much as I did. Before we wrap up, I just want to mention that OPA does currently have three FOAs out right now. They can be found on grants.gov and as well as on our website. You will find the way to our website on the screen right now.

I do want to mention that the grant-- or the FOA numbers that we have have the prefix of AH. We were previously PA, and they have changed to AH. So if you're looking on grants.gov for these specific FOAs, please note that the number has changed. The prefix have.

But if you would like to contact us, learn about some more about OPA, we have some links here as well. And I just want to thank you all for joining us today. Steve, we are now ready to conclude our session.