

Storytelling to *Accelerate* Climate Solutions

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Abstract:

Public health communication strategies, including entertainment-education, can effectively change human behavior, improving health outcomes from climate change. Tools from social psychology, including social modeling and building self and collective efficacy, can help us to create a new model for current, culturally-relevant stories that can help communities adapt to climate change. As an example we will share key learnings from Rhythm and Glue, an applied television prototype, based on research from an NSF Advancing Informal STEM Learning submission. Best practices for climate communication include adaptations of entertainment-education techniques for culturally grounded representations of climate engagement positive outliers. As science communication progresses in adapting social psychology and sociology practices for climate communication, we would like to share how this prototype applies the methods and suggests some new directions that further adapt the practices to account for limited resources and media fragmentation challenges. While this work focuses on climate, it has broad implications for future science communication practices.

Introduction:

Health impacts from climate change massive, deleterious effects on the health of our communities. Plots from mankind's long history of storytelling cannot help us prepare for the unprecedented environmental shifts we are experiencing. Despite over a half-century of evidence that science and health communication strategies, including entertainment-education, can effectively change human behavior, such strategies are rarely applied by our contemporary entertainment or media industries. Tools from social psychology, including social modeling and building self and collective efficacy, can help us to create a new model for current, culturally-relevant stories that can help communities adapt to climate change.

Stories need to be set in the present day and frame climate solutions as hopeful, funny stories that effectively teach climate change adaptation, mitigation, and resilience strategies. Up-to-date research on adaptation, mitigation, and resilience strategies can be iteratively utilized in these stories to better equip communities to manage climate change disasters and reduce global health impacts.

Agency as a story structure:

Agency is knowing what to do and having the confidence that you can overcome the barriers to solve the challenge. Agency is achieved through setting proximal and distal goals that are periodically re-evaluated. It's applicable at both the individual and collective levels. Agency as a generalizable skill is both teachable and broadly applicable to the regional specificity needed for complex problem solving that will be involved in cultural adaptations for climate change. Modeling agency becomes the new narrative structure for rapidly advancing climate solutions. These stories, set in the present, begin today with what's available right now and stay present with us as we all figure out how to adapt to our changing climate.

Prototype entertainment-education program for climate engagement:

As a prototype, Rhythm and Glue was developed to demonstrate how the storytelling approaches of entertainment-education can be applied to action-based storytelling for climate change. A range of stories following this structure can be designed for a variety of regionally and demographically specific groups, then linked together through transmedia platforms. The transmedia approach provides the opportunity for facilitating a broad conversation from a variety of stakeholder perspectives. Improving the coordination between programs through a transmedia interface can help them “click” into a coordinated series synchronizing the real-world responses and digital storytelling. This strategy would result in a much more intentional storytelling format that can work in conjunction with climate journalism programs focussing on actions and solutions.

The entertainment-education series Rhythm and Glue was developed as a health communication strategy to deliver multiple, parallel climate interventions. The story is based on audience profiling following the Global Warming Six America's audience segmentation (Goldberg et al 2020) to mimic perspectives from each of the six groups (from 'alarmed' to 'dismissive') in proportionate representation to match the intended audience. The images above are concept art developed for this prototype.

Set in Los Angeles, Rhythm and Glue tells the story of a community of twenty-somethings growing into adults as they learn to collaborate, sharing their skill sets, to build a safer city. The story follows the characters through multiple parallel behavioral interventions at individual and collective levels. Slapstick, romantic entanglements, and career advancement anchor the story. Real-time participation would drive audience engagement with climate topics. Each season presents an overarching climate change issue. Season One tackles transportation and the current health effects of climate change, with subsequent seasons addressing; energy, water, food, and waste. The show highlights the day-to-day realities of climate change and models realistic solutions and behaviors that citizens can take to mitigate those effects, for themselves and their communities.



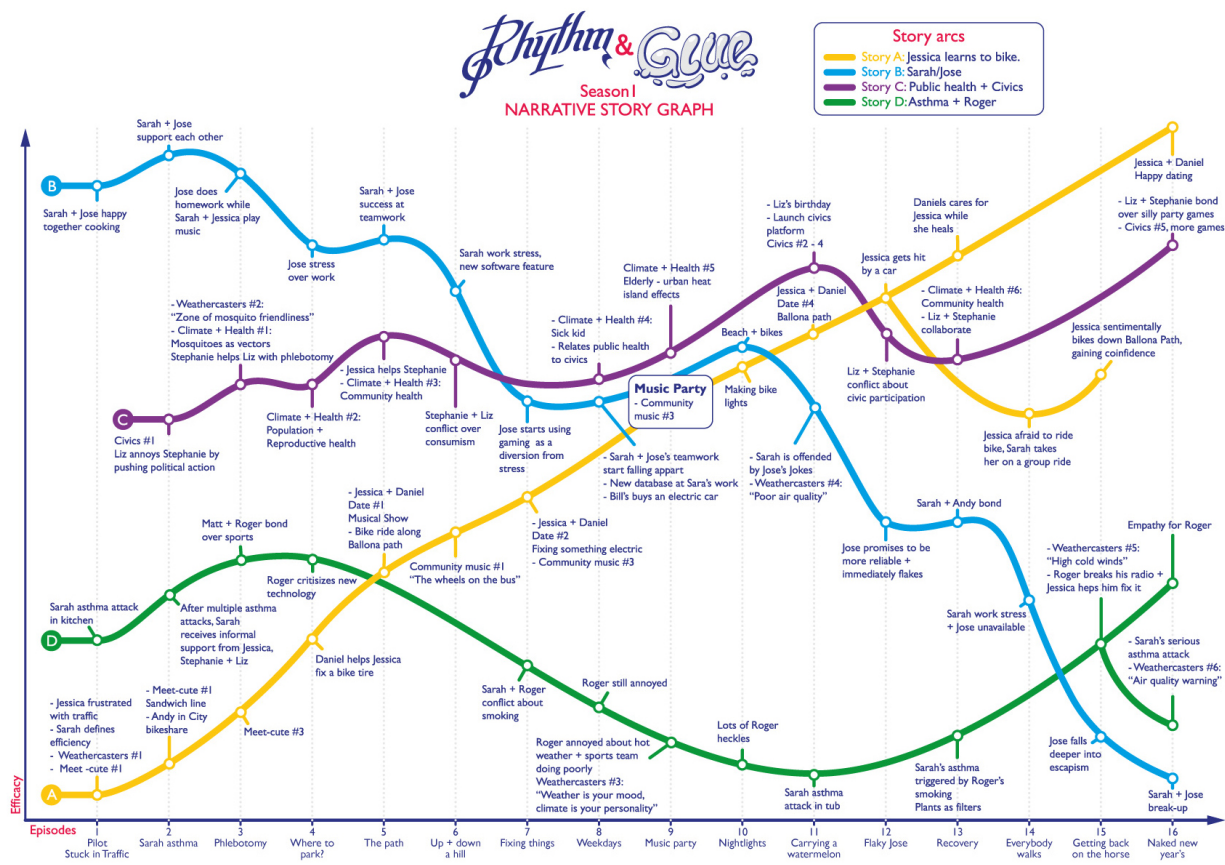
Concept art developed for the television prototype Rhythm and Glue.

Entertainment-education, an established health communication mechanism, is an ideal vehicle for conveying climate health impacts and solutions. Entertainment-education is a fully integrated communication campaign that uses a narrative story as one piece of a larger communication strategy to build audience engagement for public health interventions. Entertainment-education narratives are designed to deliver accurate information from reliable sources and model desired change through parasocial interaction, character identification, self-efficacy, and the mediation of interpersonal communication. Entertainment-education involves production methods for long-running multi-episode narratives or serial dramas and are grounded in theories of narrative persuasion and behavior change with the explicit aim of promoting pro-social messages. Entertainment-education begins with formative research that includes demographic and other pertinent information about the target audience and the desired pro-social behaviors the show will model. This research is used by writers to accurately create characters that represent the target populations. Geospatial mapping of localized climate adaptation can be systemized to create up to date reference material.

Fictional narratives are created for engaging cognitively, emotionally, and socially, helping to effect attitudinal and behavioral change among individuals and communities. Fictional narratives use implicit persuasion approaches that reduce counter-arguing and psychological resistance. Entertainment-education has proliferated, over the past forty years, to thousands of projects globally becoming an influential health promotion strategy, but up until now has not yet been developed as a coordinated mechanism for supporting rapid climate engagement.

Multiple and parallel climate interventions:

Entertainment-education is particularly effective at producing cultural shifts and is therefore a well-suited mechanism to shape and support rapidly evolving culturally integrated climate adaptation strategies. Narrative fiction is ideal for engaging with audiences over long periods of time because it maintains audience interest and reduces messaging fatigue. Climate adaptation isn't going to be a single health intervention, it will be a long term-term fast-changing set as we figure out how to adapt culturally. Entertainment-education is poised to be an effective tool for creating healthy long-term behavior patterns for creating cultural resilience, especially as we need communication strategies to match the rate of cultural transformation needed for climate mitigation and adaptation.



This chart visualizes the multiple interwoven story arcs for Season One for the entertainment-education climate communication prototype called Rhythm and Glue. The different storylines model different types of agency, from personal agency to make lifestyle changes, to agency for climate action in community, professional or civic contexts. Storyline A (yellow) models iterative goal setting where one friend guides another to learn to navigate active and multimodal urban

transport. Storyline B (blue) is the introduction to social-emotional skill building for the character Sarah, who by Season Five of the show grows from a computer programmer into a community leadership role eventually getting elected to local office. Storyline C (purple) demonstrates local health impacts for a variety of community members in a medical procedural setting. In Storyline D (green), air quality conflicts in a residential setting lead a climate skeptic to collaborate in solar panel installation in his apartment complex due to his support for energy independence.

Tools for integrating physical and digital communication:

Coordination can be systemized across media formats to support “clear simple messages, told often from a variety of trusted sources” and to reduce lag time between real-life events and story publishing.

To integrate physical and digital storytelling tools including a GIS interface to collect positive outliers for climate adaptation, people serving as transmedia story leads connecting related stories across media formats, digital markers incorporated into social media campaigns and physical nudges added to the built environment can be combined to synchronize real life with the storytelling programs. This is ongoing work across a broad set of disciplines. If you would like to participate please contact us.

Mapping

Visual mapping of efforts in local communities provides place based coordination to accommodate regional variations. GIS tools can overlay cultural visualizations of positive outliers can be reinforced through multiple channels and incorporated into physical environments through physical nudges and reinforced with digital markers throughout media formats. Coordination between institutions will increase the possible touch points and is tailorable to subpopulations. There is a long history of geospatial analysis in public health analysis and intervention (Davenport 2012, Graham 2011) but not yet expanded to include comprehensive climate change solutions. Recent applications of GIS in health communication for managing covid-19 showcase how fast these tools can now be built and applied (Perkel 2020).

Glue

People serving as transmedia story leads as staff to track and support the integration of these campaigns across media types and territories. This staffing issue needs to extend beyond typical institutional purviews. “assign transmedia storytellers who are platform-independent; to oversees the macro, meso, and micro story circles; and expands and integrates stories, invitations, cues-to-action, and much more.” (Lutkenhaus 2020). Spreadable entertainment-education adapts the practice to accommodate changes in the media landscape such as media saturation, audience fragmentation and algorithmic personalization by creatively coordinating elements of a story across platforms, thereby providing multiple entry points across a wide range of channels. (Lutkenhaus 2019)

Digital Markers

Purposely incorporating digital “markers”—new words, phrases, visual representations, and practices that are well-aligned with a project’s social objectives—both promote new social realities and also can be used to track how audience members engage with them over time. For climate communication, a set of markers for each of the actionable behaviors that interweave narratively. Markers need to connect to events in the real world to be effective (Lutkenhaus 2020) (Bouman 2012), so coordination between real events and the narrative fiction should be interwoven.

Physical Nudges

Physical community integration of the markers at a local level within the physical environment of coordination from capillary-like fiber interwoven into our communities up to a globally coordinated set of pathways. Local level markers can be incorporated into the built environment, like guides for navigating a metro system, to help people find pathways more easily. This assists people who would like to participate, find pathways for them accommodating their relative interest, time availability and skill levels. While visual nudges are common and recommended, to accommodate a diversity of learning styles, including sensory guides (visual, auditory, sensory) will improve accessibility and equity for people unable to participate in digital resources. (Dreibelbis 2016)

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