

Pervasive, Persuasive Health: Some Challenges

Sean A. Munson

pervasive, persuasive health

The collage illustrates various mobile and web-based health tracking and persuasive technology applications:

- Top Left (GoalPost):** A mobile application showing a progress bar from Aug 22-28. It tracks "Primary" and "Secondary" goals. The "Primary Goal" is 17% complete. It also tracks "Cardio" and "Strength" training sessions.
- Top Middle (Health Watch):** A desktop application titled "HEALTH WATCH" showing a list of health entries for March 5, 2012. Entries include Glucose, Meal, and Exercise logs. A sidebar shows a photo of a group of people.
- Top Right (Calendar):** A calendar application showing activity logs for the week of March 5-11, 2012. Activities include Glucose, Meal, Exercise, and Cardio. A red box highlights activity on March 10th.
- Bottom Left (Good Things):** A mobile application showing Sean Munson's stats: 810 GOOD THINGS and 0.8 PER DAY. It lists "YOUR TOP GOOD THING WORDS" including "good", "fun", and "delicious". A timeline shows daily activities like "dinner" and "run".
- Bottom Middle (Timeline):** A timeline application showing a sequence of events from 4pm to 10pm. Events include "dinner", "run", "workout", "meal", and "meditation". Icons represent each activity.
- Bottom Right (Illustration):** A colorful illustration of a garden with sunflowers, butterflies, and flowers, likely representing a positive or healthy environment.

what's next?

The collage illustrates various mobile applications designed to track health and fitness activities:

- GoalPost**: Shows a progress bar for a cardio goal from Aug 22-28, with Primary and Secondary activity tracks. It also displays a primary goal completion status (17% complete) and strength training session details (33%).
- Health Watch**: A dashboard showing a line graph of activity levels over time, a list of recent entries (Glucose, Meal, Glucose), and a calendar view with meal icons and values (e.g., 100, 300, 200). A photo of a person is displayed at the bottom.
- 3GT**: Displays Sean Munson's stats (810 GOOD THINGS, 0.8 PER DAY), top words ('good', 'fun', 'delicious'), and a timeline of daily activities (4pm-10pm) represented by colored bars and icons. It also shows a contact list (Bauer et al, Shuteye) and communication tools (SMS, Email, Phone).
- UbiFit**: A colorful illustration of a garden scene with flowers and butterflies, with the text "Consolvo et al, UbiFit" at the bottom right.

what's next?

- continued incremental improvement, integration of new technical capabilities, & reconciling different findings. more careful / precise studies.
- individual differences in preferences and responses
- Major areas that have not received enough attention from the Health+HCI community?
 - **One-time behaviors**
 - **Tapering and weaning off of the intervention**

one-time behaviors



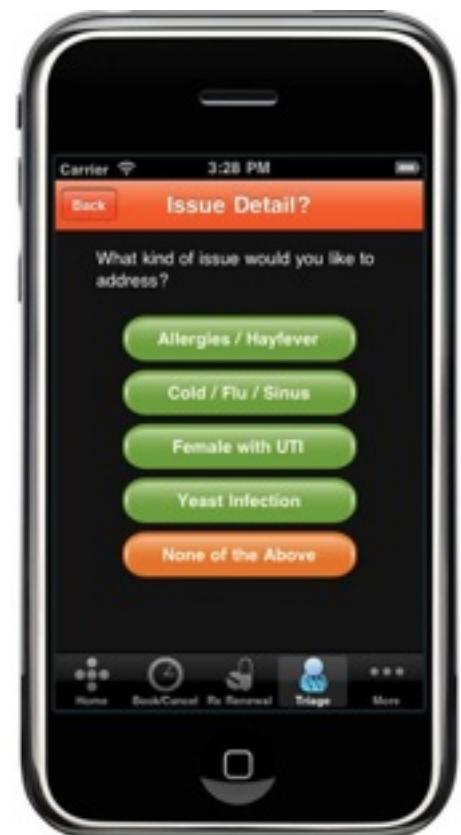
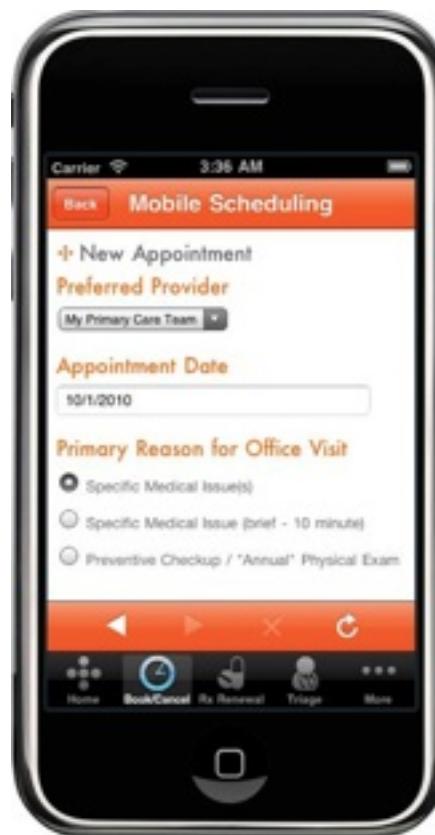
some persuasive advantages of tech carry over

- monitoring to identify people who would most benefit from a screening or from a vaccination
- tailored messaging
- at the right time and right place (*kairos*)
- social networks and social messaging

but how do we engage with people in the first place?

but how do we engage with people in the first place?

- Bundling



Distribute messages through consumer-facing EHR app?

but how do we engage with people in the first place?

- Bundling
- Veiled viral messaging (Hansen & Johnson)

The image shows a screenshot of a website titled "Fact Check: HPV". The main heading is "Fact Check: HPV" in large white letters on a pink background. Below it, there's a photo of five young adults (three men and two women) smiling. A pink button in the top right corner says "Invite Friends". On the left, there's a section with a yellow background and a small photo of a woman's face. It contains the text: "Get the facts you need to protect yourself and others from Human Papillomavirus (HPV), a leading cause of cervical cancer and genital warts". Below this, there's a form for inviting friends anonymously, which includes fields for "From", "Subject", and "To". The "To" field has placeholder text: "(Please enter the email addresses of the friends you want to invite)". On the right side, there's a pink box containing a "quiz!" section with the text "Think you know the facts about HPV?". Below that, there's a question: "How effective is the vaccine at preventing cervical cancer?" followed by a slider for answering. The slider has a scale from 0% to 100%, with a red marker pointing to 63%.

Fact Check: HPV

Invite Friends

Get the facts you need to protect yourself and others from Human Papillomavirus (HPV), a leading cause of cervical cancer and genital warts

Invite friends anonymously

The invites will be sent anonymously. Your information will not be disclosed.

From: HPVPvention@prevent.org

Subject: Invitation to Join FactCheck:HPV on Facebook

To: (Please enter the email addresses of the friends you want to invite)

quiz!

Think you know the facts about HPV?

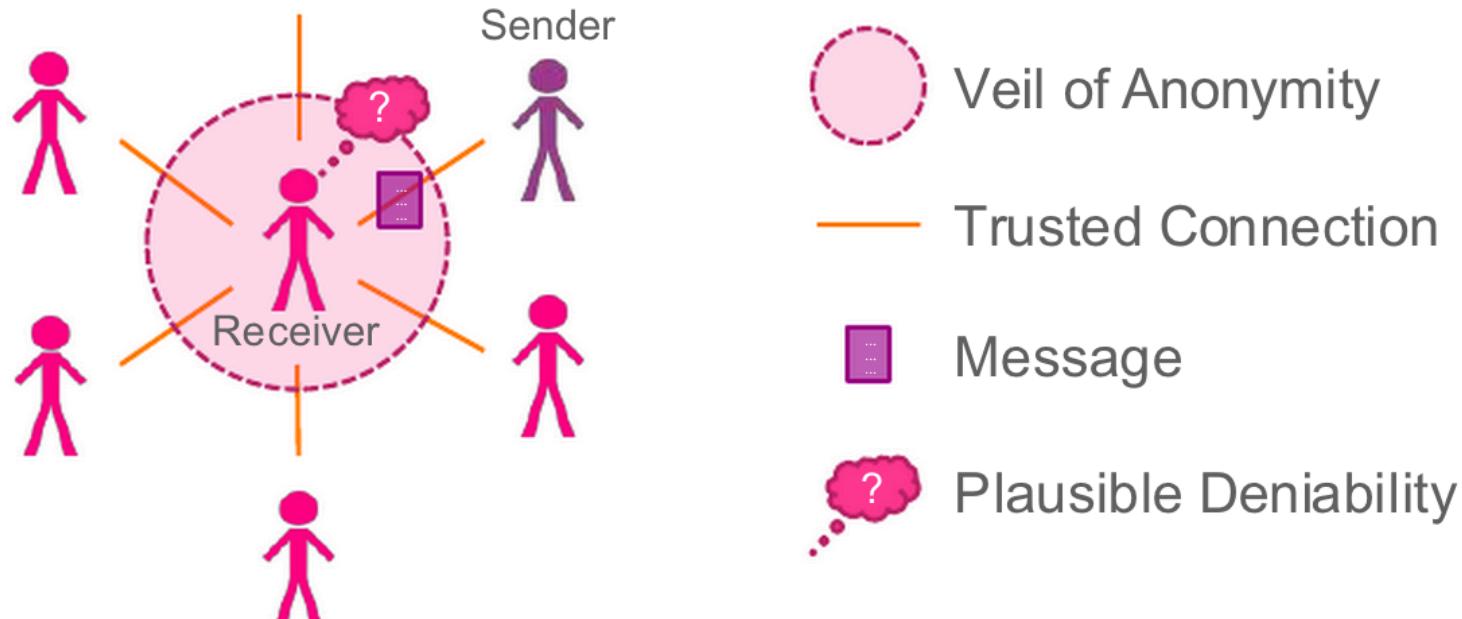
How effective is the vaccine at preventing cervical cancer?

Use the slider to approximate your answer

0% 63% 100%

but how do we engage with people in the first place?

- Bundling
- Veiled viral messaging (Hansen & Johnson)



Socially Bounded Anonymity

“One of your friends who wishes to remain anonymous...”

but how do we engage with people in the first place?

- Bundling
- Veiled viral messaging (Hansen & Johnson)
- Immunization drives on Facebook, etc.

Today is Election Day [What's this? • close](#)

 Find your polling place on the U.S. Politics Page and click the "I Voted" button to tell your friends you voted.

02622744 People on Facebook Voted

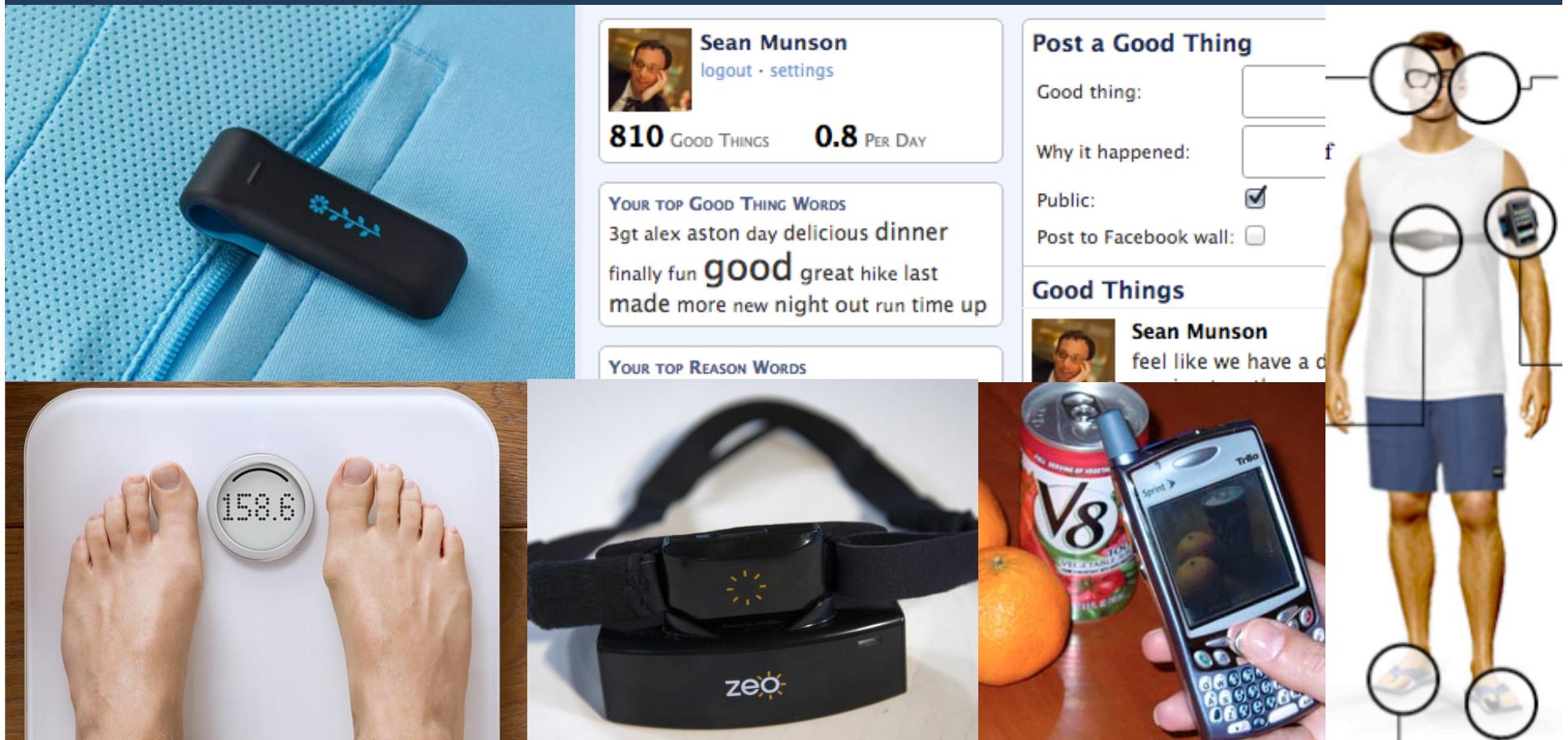
[I Voted](#)

  Troy Westhaus, Devin Adair, and 7 other friends have voted.

but how do we engage with people in the first place?

- Bundling
- Veiled viral messaging (Hansen & Johnson)
- Immunization drives on Facebook, etc.
- **We need more tools like this**

tapering, weaning, graduating



Purpura, Fit4Life

if we don't...

The collage consists of four panels:

- Top Left:** A diagram showing a man wearing a white tank top and blue shorts. Various sensors are highlighted with circles: a Data Recorder and Beacon Accessory on his head, an Earpiece on his ear, a Heart Rate Monitor on his chest, and another Data Recorder and Beacon Accessory on his foot. Labels explain the functions of each component.
- Top Right:** A woman in a white tank top and blue shorts. An Earpiece is highlighted, and a label explains its function of providing information and advice based on individual behavior.
- Middle Left:** A graph showing a downward trend followed by a sharp upward spike after a vertical dashed line labeled "Remove intervention".
- Middle Right:** A car's infotainment screen displaying a map with Chinese labels, indicating navigation or location tracking.
- Bottom Right:** A photograph of a dark-colored car completely submerged in floodwater, illustrating a negative outcome if the intervention is removed.

how can we build apps that encourage development, and then are no longer needed?

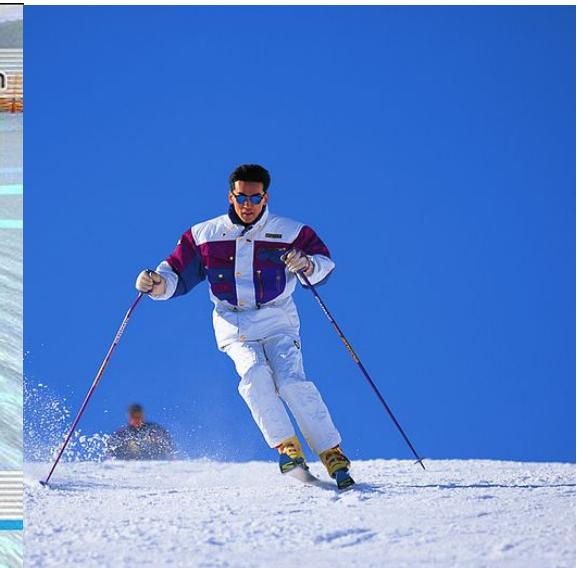
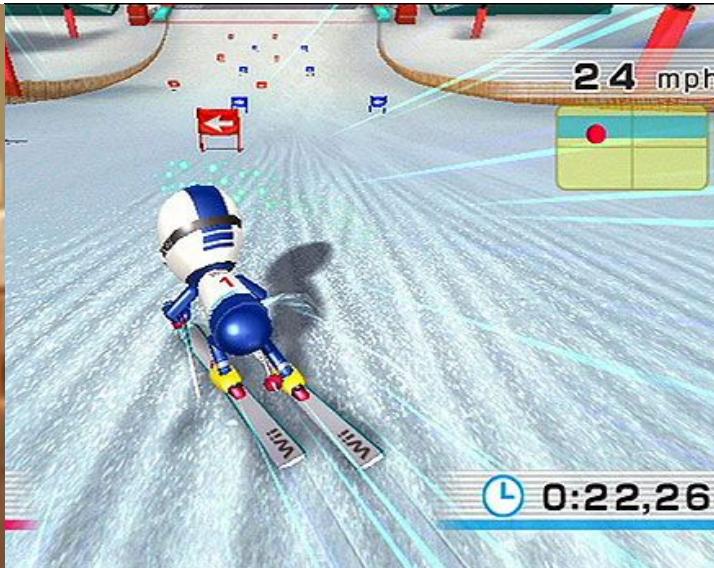
how can we build apps that encourage development, and then are no longer needed?

- *don't* make them frictionless and easy, or make them more difficult over time: quizzes, reduced scaffolding, etc.



how can we build apps that encourage development, and then are no longer needed?

- *don't* make them frictionless and easy, or make them more difficult over time: quizzes, reduced scaffolding, etc.
- Interventions as gateways to activities that are more intrinsically rewarding (e.g. Schwanda et al on *Wii Fit*)



one-time behaviors

tapering, weaning, graduating

[your challenge here]

**Sean A. Munson
@smunson · smunson@uw.edu · smunson.com**