Coping with Food Insecurity using the Sociotype construct and Positive Deviance

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Outline

1. What is Food Insecurity?
2. Sociotype and Coping with Food Insecurity
3. Positive Deviance Approaches

Food Security is a Fundamental Human Right

This Pulitzer prize photo was taken during the Sudan famine in 1994. The child is crawling to a UN food camp some kms away. The vulture is waiting for him to die, to eat.
No one knows what happened to the child.
The photographer, Kevin Carter left immediately after.
He committed suicide 3 months later from depression.

The Planet by per capita caloric intake

From Basic Food to processed Junk food in 50 years

World food programme
Food Insecurity and Sociotype

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Vulnerable Groups for FOOD INSECURITY

- Victims of Natural Disasters
- Victims of Conflict
  - IDPs, Refugees, War victims
- Migrant Workers & Families
- Marginal Populations in Urban Areas
  - Unemployed, Homeless, Orphans, Street Children
- At-risk social groups
  - Minorities, Illiterate, Patients, Prisoners, Addicts
- Low-Income Households, 1- parent families
- Dependents
  - Servants, Elderly, Handicapped, Special needs, Pregnant & Nursing women, CHILDREN

Coping with Food Insecurity: the role of the Sociotype
Introducing the Sociotype

Q: How do we COPE with “LIFE” in general and chronic disease and Food Insecurity in particular?

A: Well, it all depends on your SOCIOTYPE......

Multi-Disciplines: Anthropology, Medicine, Nursing, Physiology, Psychology, Sociology, & more...

Berry EM. The role of the sociotype in managing chronic disease: Integrating bio-psycho-sociology with systems biology. Medical Hypotheses 77: 610, 2011

1. Individual / Health
   Intra-personal
   • Nutrition, Growth & Development
   • Physical Health & Well Being
   • Psychological / Mental / Emotional Health
     Sense of Humor
   • Spiritual Belief System(s)
   • Coping strategies throughout the life cycle for disease, aging & misfortune

2. Relationships
   Inter-personal
   Family:
   • With Parents
   • With Siblings
   • With Cousins
   • With Spouse (mate selection)
   • With Children
   Friends: Social Networks
   Work
   and Strangers...
   Sexual Partners / Lovers
3. Context - Community

Education
Employment
Economic Situation
Environment
- Home
- Leisure Time
- Work
Political System
Migrants / Strangers
Ideological Beliefs & Societal values

Some questions for Sociotypic research: from the 3 Domains

**INDIVIDUAL / HEALTH**
- How would you have been different if 5cms ↑ or ↓ in height?
- How to live with Special Needs, blindness, stuttering, deformity?
- Are you hungry in your Head or your Stomach?
- How to cope with Aging, Chronic Disease - Diabesity, CVA, IBD, Arthritis, Colostomy, Post-Transplant or post Traffic accident?

**RELATIONSHIPS**
- At what age do you stop trying to please your parents?
- What determines how we choose our partners?
- Do people change?
- How do families cope with a sick child?
- How to deal with, Divorce, Bereavement (child)?
- How to care for a parent/spouse with dementia?

**CONTEXT**
- How to deal with Job Dismissal, Retirement?
- How to deal with Economic crises, Wars, Natural Disasters?

Questions may overlap domains, Answers may CHANGE with TIME, & are NOT given by RCTs

Sociotype in Action: Kid injured in playground

Parent’s responses

1. “Oh it’s really nothing, just a scratch. Be a MAN - Boys don’t cry…
2. “I know it hurts, Let me kiss it better. Let’s clean it with water, put on a plaster & you will be just fine
3. “It’s MY fault, I should not have let you go wild. Oh how terrible! We must go to the doctor immediately, and get anti-tetanus, then to the ER .
4. “It’s YOUR fault for not being more careful

Which Mother said what? Cultural norms
- Russian, American, Nordic, Jewish, English, Polish…
- (Affection & Justification)
- would father be different??? Consistent Messages

**FUEL = NUTRITION**

? Octane

**LIFE TASK**

(of Sisyphus?)

Consider also:
- Juggling the # & type of those balls…..
- Soles of your shoes….

**Individual Behaviour**

<Health>

**Change in**

<Relationships>

<Sociotype>

<Context>

Puska napkin, Restaurant Geneva 2002
Measuring Coping Score (CS)

**Coping efficacy:** (Manne & Glassman, 2000). Two face-valid items assessed efficacy in coping with stress caused by the most severe recent event:

1. "How well do you think you are dealing with the changes and disruptions to your life imposed by the event?"
2. "How well do you think you are dealing with the emotional stress imposed on you by the event?"

**Mastery:** (Pearlin & Schooler, 1978). A seven-item scale measured the ability to deal with issues as they arise in people’s lives:

- How strongly do you agree or disagree that:
  1. I have little control over the things that happen to me
  2. There is really no way I can solve some of the problems I have
  3. There is little I can do to change many of the important things in my life
  4. I often feel helpless in dealing with the problems of life
  5. Sometimes I feel that I'm being pushed around in life
  6. What happens to me in the future mostly depends on me
  7. I can do just about anything I really set my mind to do

The mean of the combined variable CS from 1296 subjects (30-70 yrs old, 45% women) was: 5.09 (s.d. 1.03, range 1.50 to 7.20)

**Data Base from 1296 Israeli subjects in study on Sociotype**

<table>
<thead>
<tr>
<th>Individual Health</th>
<th>Relationships</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Marital status</td>
<td>Immigration years</td>
</tr>
<tr>
<td>Limiting Illness</td>
<td>Family stress</td>
<td>Birth place</td>
</tr>
<tr>
<td>Self rated Health</td>
<td>Social Participation</td>
<td>Education</td>
</tr>
<tr>
<td>Physical limitation</td>
<td>Social Capital Fairness</td>
<td>Profession</td>
</tr>
<tr>
<td>Depression</td>
<td>Social Capital Trust</td>
<td># of cars</td>
</tr>
<tr>
<td>Religiosity</td>
<td>Social Capital Support</td>
<td>Economic situation</td>
</tr>
<tr>
<td>Personal bad events</td>
<td>Social Stress</td>
<td>Financial Stress</td>
</tr>
<tr>
<td>Perception of Stress</td>
<td>Social network support</td>
<td>Job Stress</td>
</tr>
<tr>
<td>Total life bad events</td>
<td>Social Benefits</td>
<td>Neighborhood situation</td>
</tr>
<tr>
<td>Dietary Intake</td>
<td>Health Behavior</td>
<td></td>
</tr>
<tr>
<td>Health Behavior</td>
<td></td>
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</tr>
</tbody>
</table>

Berry et al, Correlates of Coping based on the concept of the Sociotype: Health Psychology and Behavioral Med, 2017
The influence of Sociotypic Domains on Coping in 572 Men and 724 Women

- **Men**: 35.8% Coping Score
- **Women**: 26.6% Coping Score

Correlations between the domains:
- **Sociotype**: Men 0.353, Women 0.421
- **Coping**: Total 0.38

**Individual / Health**
- Men 19.6%
- Women 16.2%

**Relationships**
- Men 19.9%
- Women 14.5%

**Context**
- Men 35.8%
- Women 26.6%

Total: Men 75.3%, Women 57.3%

Berry et al., 2017

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**Stages of Coping with Food Insecurity**

1. **Uncertainty & Worry**
2. **Inadequate Quality**
3. **Insufficient Quantity**
4. **Socially Unacceptable Behaviors**

**Resilience (= Chronic Coping):**
- **Absorptive**: Take in your stride
- **Adaptive**: Move with it...
- **Transformative**: Get out of the situation

Coates et al. J Nutr 143:5, 2006

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**Sociotype & Coping Strategies for Food Insecurity**

1. **Dietary Changes**
   a. Physiological mechanisms to decrease energy expenditure (I)
   b. Rely on less preferred and less expensive foods (C)

2. **Increase Short-Term Household Food Availability**
   c. Borrow food, or rely on help from a friend or relative (R)
   d. Purchase food on credit (R, C)
   e. Gather wild food, hunt, or harvest immature crops (C)
   f. Consume seed stock held for next season (C)

3. **Decrease Numbers of People**
   g. Send children to eat with neighbors (R)
   h. Send household members to beg (R, C)

4. **Rationing Strategies**
   i. Limit portion size at mealtimes (I, R)
   j. Restrict consumption by adults in order for small children to eat (I, R)
   k. Feed working members of HH at the expense of non-working members (I, R)
   l. Ration the money you have and buy prepared food (R, C)
   m. Reduce number of meals eaten in a day (I)
   n. Skip entire days without eating (I)

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**Unacceptable Behaviors...**

- **Steal**
- **Trash cans**
- **Sex**
- **Food**

(Oxfam)
The Sociotype is involved with both the dynamic assessment of the Stresses of Food Insecurity and the Coping strategies to deal with them. The Sociotype is involved with both the dynamic assessment of the Stresses of Food Insecurity and the Coping strategies to deal with them.

COPING: Practical Steps
LEARN FROM THE POSITIVE DEVIANTS

The Power of Positive Deviance (PD)
Solutions before our very eyes!!

Indian Face or Eskimo?

The Premise:
In every community there are certain individuals whose uncommon practices/behaviors enable them to find better solutions to problems than their neighbors who have access to the same resources.

The Key Question: What enables some members of the community (the "Positive Deviants") to find these better solutions?

Malnutrition in Vietnam
PD Inquiry
How are some children well-nourished??

<table>
<thead>
<tr>
<th>Gathering vegetables</th>
<th>&quot;Stealing&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money from outside</td>
<td>&quot;TBU&quot;</td>
</tr>
<tr>
<td>All family thin</td>
<td>&quot;TBU&quot;</td>
</tr>
<tr>
<td>Breast feeding etc</td>
<td></td>
</tr>
</tbody>
</table>

Cf Antonovsky Salutogenesis

Marsh et al. BMJ 329, 1177, 2004
**Project aim**

**Setting**

- Vietnam 1999 - 2000

**PD Behaviors**

- Eating Fruits & Veggies, Shrimp snails, Breast milk, beans, peanuts
- Boiling Drinking water
- 5-6 meals/d active feeding
- Mosquito bed net
- Immunization
- Daily bath
- Early care seeking for illness

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**PD Enables us to Act TODAY**

Positive Deviants enable finding successful solutions TODAY before all the underlying causes are addressed! – Who is most Food Secure???

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**The Road to Positive Deviance**

- Design & Do
- Discover
- Determine Deviants
- Define Problem

**Monitor & Evaluate**

- Community valid
- Solution already WORKS!!!

**TRADITIONAL vs POSITIVE DEVIANCE PROBLEM SOLVING APPROACH**

**TRADITIONAL**

- Deficit Based: “What’s WRONG here?”
- Analysis of underlying causes of PROBLEM
- Externally Driven - by outside “experts”
- Top-down, Glass Half empty

**POSITIVE DEVIANCE**

- Asset Based: “What’s RIGHT here?”
- Analysis of successful SOLUTIONS
- Internally Driven - by “people like us”, same culture & resources
- Bottom-up, Glass Half full

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**Food Insecurity and Sociotype**

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Current Applications of Positive Deviance

<table>
<thead>
<tr>
<th>Program context</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childhood development &amp; Malnutrition</td>
<td>&gt; 40 countries throughout the world</td>
</tr>
<tr>
<td>HIV/AIDS risk reduction: use of Condoms</td>
<td>Myanmar, Indonesia, Viet Nam</td>
</tr>
<tr>
<td>Antenatal care, Maternal &amp; Newborn Care, Breastfeeding</td>
<td>Egypt, Pakistan, Viet Nam</td>
</tr>
<tr>
<td>Female Genital Mutilation (FGM)</td>
<td>Egypt</td>
</tr>
<tr>
<td>Girl Trafficking</td>
<td>Indonesia, Nepal</td>
</tr>
<tr>
<td>Education Issues</td>
<td>Argentina, US</td>
</tr>
</tbody>
</table>

Q: How could we apply PD to the following Public Health problems...?

- Coping with Food Insecurity
- Childhood Obesity
- Compliance to the Mediterranean Diet
- Better Diabetic control
- Road Traffic Accidents
- Smoking / alcohol cessation
- Regular physical activity
- Immigrant workers’ conditions
- Health of Lower socio-economic classes
- Violence in Schools

Jean Brillat-Savarin, 1825, La Physiologie du Gout

"Tell me what YOU eat & I will tell you who YOU are"

"Tell me how a FAMILY eats & I will tell you how it FUNCTIONS"

"Tell me how a NATION eats & I will tell you its VALUES"

Life is in your hands...

"Be the Change you wish to bring about"  
M.K. Gandhi

Be a POSITIVE DEVIANT...
Exercising at a RED Light

1. Hand squeeze
2. Isometric hand press
3. Stomach into Spine
4. Pelvic Floor - O Ring

CONCLUSIONS:
FOOD SECURITY & INSECURITY
**CLASS SOLUTIONS**

**My Hero!**

“...My inspiration are men and women who have emerged throughout the globe, and who have chosen the world as the theatre of their operations and who fight socio-economic conditions … who fight the suppression of the human voice, who fight disease, illiteracy, ignorance, poverty and hunger. Some are known, others are not...”

_Speech LSE, UK, 6th April 2000_

**Umuntu ngumuntu ngabantu**

Truth & Reconciliation Commission

“The need for Understanding, but not for Vengeance

A need for Reparation, but not Retaliation,

A need for UBUNTU, but not for Victimization...”

**FOOD SECURITY (Public Health):**

Food should be AVAILABLE & ACCESSIBLE & ADEQUATE & ENJOYABLE for ALL: MEDITERRANEAN LIFESTYLE

**FOOD SECURITY (Public Health):**

Food should be AVAILABLE & ACCESSIBLE & ADEQUATE & ENJOYABLE for ALL: MEDITERRANEAN LIFESTYLE

**NUTRITION:**

“MODERATION in all things, including MODERATION” (David Berry z”l) 

**SOCIOTYPE:**

...It is more important what comes OUT of your mouth than what goes IN.... (Matthew 15.11)

**COPING:** (3-fold cord)

How you cope is the life-long interaction between your Genotype → Phenotype ← SOCIOTYPE

**Four Final Thoughts:**

“Tell me your SOCIOTYPE” & I will tell you How you COPE...

equality

**INDIVIDUAL / HEALTH:**

“Tell me what YOU eat and I will tell you what YOU are”

**RELATIONSHIPS:**

“Tell me how a FAMILY eats and I will tell you how it FUNCTIONS”

**CONTEXT:**

“Tell me how a NATION eats and I will tell you its VALUES”

Do kids go to bed hungry??

= COPING with FOOD INSECURITY & SOCIAL JUSTICE & SUSTAINABILITY
Some questions for Sociotypic research: Regarding Coping for Food INSecurity

INDIVIDUAL / HEALTH
• How to keep up food quality and prevent malnutrition?
• How to deal with constant Hunger?
• How to eat previously unacceptable food – culture / religious taboos?

RELATIONSHIPS
• How to decide to whom to distribute the Food?
• How to cope if someone falls ill?

CONTEXT
• How to borrow or get credit?
• How to beg?
• Consequences of economic hardship?

Answers: CHANGE with TIME, & not given by RCTs

“exists when all people at *all times* have: physical, social and economic access to food, - which is safe and (is)...sufficient quantity and quality - to meet their dietary needs and food preferences, - and is supported by an environment of adequate sanitation, health services and care, - allowing for a healthy and active life”
Promoting Food Security

Green Revolution: Norman Borlaug

Some Ways to Solve Food at Different Dimension Levels

<table>
<thead>
<tr>
<th>Solution</th>
<th>Availability</th>
<th>Accessibility</th>
<th>Utilization</th>
<th>Stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Production</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication and Transport</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutritional Education</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Reduce Rural Poverty</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td>Food Fortification</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Supplementation</td>
<td></td>
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<tr>
<td>Control Disease</td>
<td>X</td>
<td></td>
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<tr>
<td>Control Birth Rate</td>
<td>X</td>
<td>X</td>
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Food Insecurity and Sociotype

Examples of Implementation Tools in Food & Nutrition Security at different Community levels

<table>
<thead>
<tr>
<th>Social Level</th>
<th>Availability</th>
<th>Accessibility</th>
<th>Adequate Utilization</th>
<th>Stability</th>
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<tbody>
<tr>
<td>Macro</td>
<td>Agriculture &amp; Trade policies</td>
<td>Price policy</td>
<td>Safe Motherhood Programs</td>
<td>Saving &amp; Loan Policy</td>
</tr>
<tr>
<td></td>
<td>Birth control Programs</td>
<td>Food Stamps</td>
<td></td>
<td>Micro Finance</td>
</tr>
<tr>
<td>Meso</td>
<td>Small scale irrigation projects</td>
<td>School-Feeding Programs</td>
<td>Measles, Polio immunization</td>
<td>Community Planning Committees</td>
</tr>
<tr>
<td>Micro</td>
<td>Use of Fertilizer</td>
<td>Breast Feeding Coaching</td>
<td>Latrine Construction</td>
<td>Food Storage</td>
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</table>


Copenhagen – Global Challenges: The Skeptical Environmentalist – Bjorn Lomborg

To Prioritize the Top 10...
- Access to education
- Malnutrition & hunger
- Clean water - Sanitation
- Climate change
- Communicable diseases
- Conflicts
- Financial instability
- Subsidies & trade barriers
- Governance & corruption
- Migration

*Relate to Food Security