

## INTERVENTION MAPPING

# AN INTRODUCTION OF INTERVENTION MAPPING

BARTHOLOMEW, L.K.; PARCEL, G.S.; KOK, G.; GOTTLIEB, N.H.; FERNÁNDEZ, M.E.; PLANNING HEALTH PROMOTION PROGRAMS: AN INTERVENTION MAPPING APPROACH, JOSSEY BASS, 2011.

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## OVERVIEW

## Questions About the Use of Theory

- When do I use theory to guide my decisions?
- What theories and constructs to use?

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## As an illustration: fear appeals



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## OVERVIEW

## Purpose

Systematic framework for effective decision-making at each step in intervention:

- Planning
- Implementation
- Evaluation

Based on theory and evidence

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## Questions About the Use of Evidence

- How to use of the experience of others and program evaluations?
- How do I judge the validity and strength of evidence?

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## OVERVIEW

**Not everyone who gets hit by a drunk driver dies.**



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## OVERVIEW



## OVERVIEW

Change methods are numerous...

- Fear Appeals
- Affective Appeals
- Persuasive Communication
- Social Support
- Modeling
- Skills training
- Goal Setting
- Mass Media Portrayals
- Mobilising Social Networks
- Community Organization
- Empowerment
- Media Advocacy
- Policy Advocacy
- ...

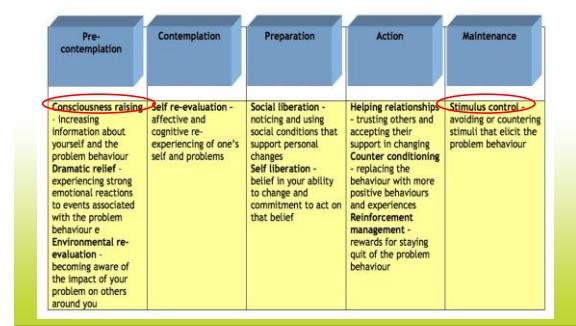
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Behavior change is a multi-step process!



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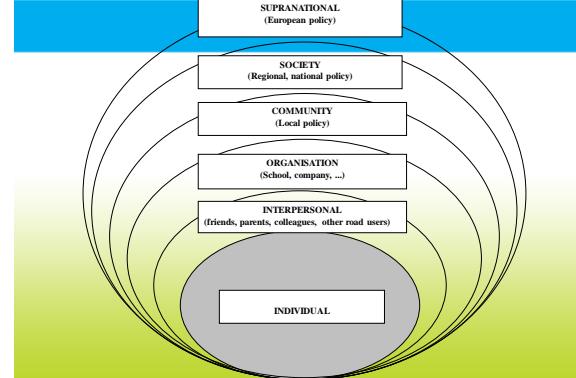


## OVERVIEW

An ecological approach



## OVERVIEW



## OVERVIEW

### Questions About How to Take an Ecological Approach to Planning

- What about environmental agents?
- How to deal with the complexity of multi-causation and multi-level intervention?

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## OVERVIEW

### Intervention Mapping Steps

1. Conduct a needs assessment.
2. Formulate objectives.
3. Select theory-based methods and practical applications.
4. Organize methods and applications into an intervention program.
5. Plan for program adoption, implementation, and sustainability.
6. Generate an evaluation plan.

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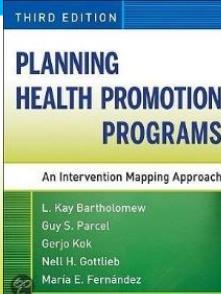
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### PROBLEM STATEMENT

- Problem definition:
  - *Specific (instead of too generic) terms*
    - 'increasing organ donation' vs. 'increasing willingness to register as a donor'
  - *Changeable aspects* (-> !!: age, gender, personality, ...)
  - *Degree of responsiveness to solutions*
    - 'perceived vulnerability' vs. 'perceived severity'
  - *Well delineated target group*
    - 'late adolescents' vs. '18-year old ones'

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### Introduction of step 1 and 2

1. Conduct a needs assessment.
2. Formulate objectives.

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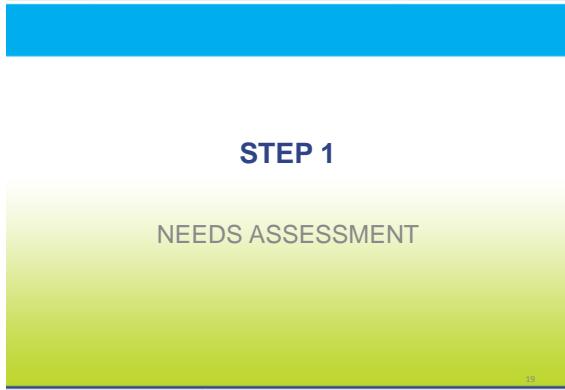
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### ILLUSTRATION PROBLEM STATEMENT

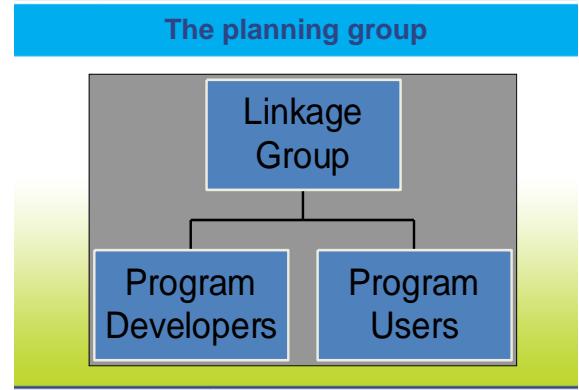
- Road rage leads to an increase of accidents. Why do young males between 18 and 25 often engage in road rage. How can we influence the coping strategies of young male drivers in order to reduce road rage?
- PS: problem, target population, behavior, determinants, solution

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## OVERVIEW



## OVERVIEW



## OVERVIEW

### Illustration: 'On the Road':

- Program developers:
    - Flemish department (road safety administration)
      - Funding
    - Flemish Foundation for Traffic Knowledge (VSV)
      - Design: open call -> 'outsourcing'
    - Flemish Automobile Association (VAB)
      - Design: proposal
- 
- At the bottom left of this area, there is small text: "BARTHOLDIEN, L.K.; PARCEL, G.S.; KOK, G.; GOTTLIEB, N.H.; FERNÁNDEZ, M.E.; PLANNING HEALTH PROMOTION PROGRAMS: AN INTERVENTION MAPPING APPROACH, JOSSEY BASS, 2011. 21".

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### Illustration: 'On the Road':

- Program users:
  - Program adopters:
    - Driving schools
    - Insurance companies (Ethias, ...)
    - Media (Studio Brussel)
- Program implementers:
  - Driving instructors & teachers
  - Webdesigners -> OTR-webpage
  - Advertisers -> radio spot
- Program evaluators:
  - Transportation Research Institute (IMOB) & University of Maastricht (UM)
- End-users:
  - Young novice drivers

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### Logic Model of the Problem

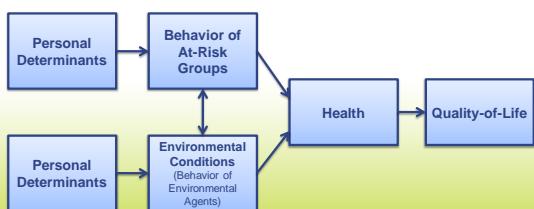


Figure 1.3

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### Predisposing factors:

- **"learning-related factors within the persons of the target population that facilitate or hinder motivation for change"**
- **e.g., knowledge, attitudes, beliefs (incl. anticipated social effects), values, perceptions**

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### Reinforcing factors:

- “factors that encourage or discourage continuation of the behavior”
- e.g., social support, peer pressure, incentives, punishment

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### Reinforcing



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### Educational and ecological assessment

### Enabling factors:

- “factors that can help or hinder the desired behaviors as well as environmental changes”
- e.g., skills, resources, barriers

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### Enabling



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### OUTCOME STEP 1

- Description of the problem behavior
- Input for step 2

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### STEP 2

#### FORMULATING OBJECTIVES

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### SAFETY OUTCOMES ('health' level)

#### Safety outcomes

- What impact do we want to have on the actual road safety statistics?
  - Road fatalities
  - Severe road injuries
  - Light road injuries
  - Material damage only accidents

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## OVERVIEW

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### SAFETY PROMOTING GOALS ('behavioral + environmental' level)

#### Safety promoting goals

- What do we like to change in individual behavior?
- What do we like to change in the environment?

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### Goal setting



- E.g., child restraint seats

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### SAFETY PROMOTING GOALS ('behavior + environment' level)

- In line with the S.M.A.R.T. principle, we need to further "break down" the behaviors into more specific "to do's":
- Put differently, as a next step we have to ask ourselves the following question:
  - "What do the parents **need to do** to use a child seat appropriately & consistently?"
  - "What does the environmental agent (e.g., university) **need to do** to use a child seat appropriately & consistently?"

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### PERFORMANCE OBJECTIVES ('to do' level)

- To use child-seats correctly and consistently:
  - PO1: Parents buy child seat (2<sup>nd</sup> if 2 cars)
  - PO2: Parents keep child seat in the car
  - PO3: Parents adjust seat to child's length
  - PO4: Parents replace seat in time
- To negotiate child seat use with partner:
  - PO1: Parents state mutual goals related to child safety
  - PO2: Parents listen to partners concerns
  - PO3: Parents pose solutions

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### PERFORMANCE OBJECTIVES ('to do' level)

- To encourage the use of child restraints:
  - PO1: The university checks use of child restraints
  - PO2: The university provides guidelines for use of restraints
  - PO3: The university provides financial scheme for use of child restraints

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### PERFORMANCE OBJECTIVES

### SAFETY PROMOTING GOALS

### INTERVENTION PROGRAM

### SAFETY OUTCOMES

PRECEDE-model (Green & Kreuter, 2005)

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### CHANGE OBJECTIVES ('determinant' level)

#### Determinants:

- Why people would or wouldn't do what we like them to do.
  - PREDISPOSING
  - REINFORCING
  - ENABLING

#### Change objectives:

- What do people have to learn to do what we like them to do?

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## OVERVIEW

### PERFORMANCE OBJECTIVES

### SAFETY PROMOTING GOALS

### INTERVENTION PROGRAM

### SAFETY OUTCOMES

PRECEDE-model (Green & Kreuter, 2005)

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### Matrix of Change Objectives

The *matrix of change objectives* is created by

- crossing the *performance objectives* with *determinants* of behavior and environmental conditions and
- writing *change objectives* for the accomplishment of the performance objectives.

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### Create Matrices of Change Objectives

	Determinant 1	Determinant 2
PO1	CO1	CO2
PO2	CO3	CO4

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### Create Matrices of Change Objectives

		Personal determinants	
		Risk perception	Self-efficacy
		Change objectives	
PO1: Parents keep child seat in the car.	RP1: Acknowledge their personal risk of being involved in an accident.	SE1: Express confidence in ability to effectively deal with obstreperous behavior.	
	RP2: Describe the safety advances of using a child seat.		
PO2: Parents listen to partners concerns.	RP3: Deny their ability to prevent their child from an injury in an accident.		SE2: Express confidence in paying attention to arguments of your partner.

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### Criteria for Determinants

**Relevance** - strength of association of determinant with behavior.

**Changeability** - how likely it is that a health education or promotion intervention will change the determinant.

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### Table 5.5 Determinants of Performance Objectives

Determinants	Importance	Changeability	Evidence for Importance
Knowledge	+	+++	Precondition for personal attitude.
Risk perception	+	+	Precondition for personal relevance.
Attitude	++	+	$r = .52, p < .01$ (with intention to always use condoms).
Anticipated regret	++	+	$r = .70, p < .01$ .
Personal norm	+++	+	$r = .78, p < .01$ .
Subjective norm	+	+	$r = .29, p < .01$ .
Self-efficacy	+++	+	$r = .71, p < .01$ .
Skills	++	+	Precondition for self-efficacy improvement.
Habit	++	+	Making the healthy behavior automatic behavior.

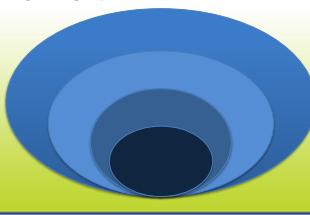
Note: Importance = the strength of the evidence for the causal relationship between the determinant and the behavior we want to change; changeability = the strength of the evidence that the proposed change can be realized by a program; + means: not very important, not easy to change; ++ means: important, changeable; +++ means: very important.

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### Matrices of change objectives for the different levels in the social environment!

- Interpersonal Environment
- Organizational Environment
- Community Environment
- Society



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### OUTCOME STEP 2

- Selection of behaviors that **should be learned**
- Targeted by methods and applications in step 3
  - E.g., Express confidence in paying attention to arguments of your partner
  - E.g., Guided practice

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**OVERVIEW****Summary**

- Intervention Mapping → systematic framework for effective decision making
- Use of theory and evidence
- Multi-causation and multi-level approach

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**THANK YOU FOR YOUR ATTENTION!**

**QUESTIONS??**

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