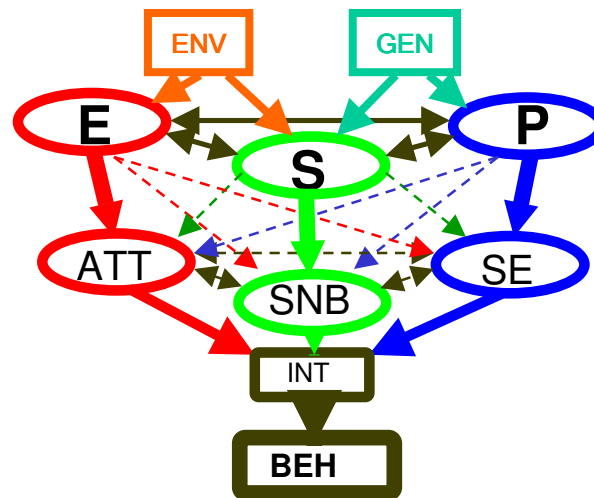


# Integrating Theories of Adolescent Behavior: The Theory of Triadic Influence

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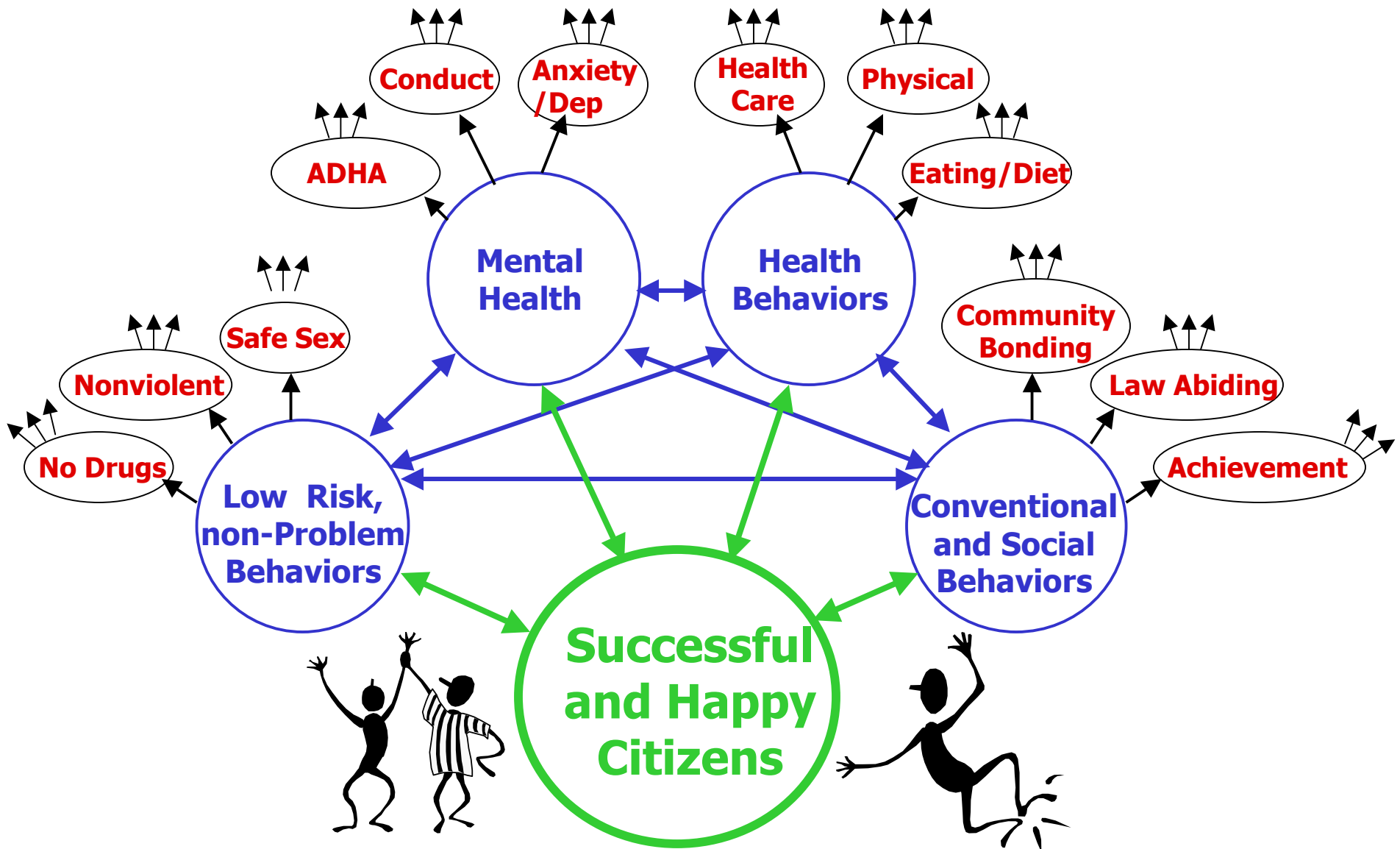


Presented at NAS/IOM, Washington DC, September 8, 2005

# Outline

- Personal, Situational and Environmental influences on behavior
- The Theory of Triadic Influence (TTI)
- TTI Postulates
- Implications for Interventions
- Expanding to include biological influences
  - The Quadratic Influence System (QIS)

# Health and Social Behaviors are Highly Correlated and Predict Each Other (Flay, 2002)



# MATRIX OF THEORIES OF ADOLESCENT PROBLEM BEHAVIOR (Petraitis, Flay & Miller, 1995, review of theories of behavior)

LEVEL OF INFLUENCE	TYPES OF INFLUENCE		
	SOCIOCULTURAL/ ATTITUDINAL	SOCIAL/ INTERPERSONAL	INTRAPERSONAL
<b>ULTIMATE</b>	<b>Class Conflict</b> <b>Low SES</b> <b>Anomie</b> <b>Social Disorganization</b> <b>Strain Theory (Merton)</b> <b>Radical Theories</b>	<b>Social Control (Elliott)</b> <b>Family Systems (Brooks)</b> <b>Peer Clustering (Oetting)</b>	<b>Biological theories</b> <b>Psychoanalytic theories</b> <b>Resilience (Garmazey)</b> <b>Personality theories</b> <b>Self-Control (Gottfredson &amp; Hirschi)</b>
<b>DISTAL</b>	<b>(General knowledge)</b> <b>Cultural Identity</b> <b>Values theories</b> <b>Motivation theories</b>	<b>Social attachment/bonding</b> <b>Social Development (Hawkins)</b> <b>Differential Association</b> <b>Social Learning (Akers, Bandura)</b> <b>Social Support Theories</b> <b>Social Comparison Theories</b>	<b>Personal competence</b> <b>Self-Esteem theories</b> <b>Self-Derogation (Kaplan)</b> <b>Personal control theories</b>
<b>PROXIMAL</b>	<b>Expectancy theories</b> <b>Attitude theories</b>	<b>Social Norms theories</b> <b>Conformity theories</b>	<b>Social skills</b> <b>Self regulation/control</b> <b>Self-efficacy (Bandura)</b>
<b>Fishbein &amp; Ajzen (TRA); Ajzen (TPB)</b> <b>Feedback Systems Theories</b>			

Note: Some of these theories cross cells, particularly the sociological theories. Some explicitly integrative theories cross many cells (e.g., Brooks, Elliott, Jessor).

# Three Ultimate Causes of Behavior: Reciprocal Determinism

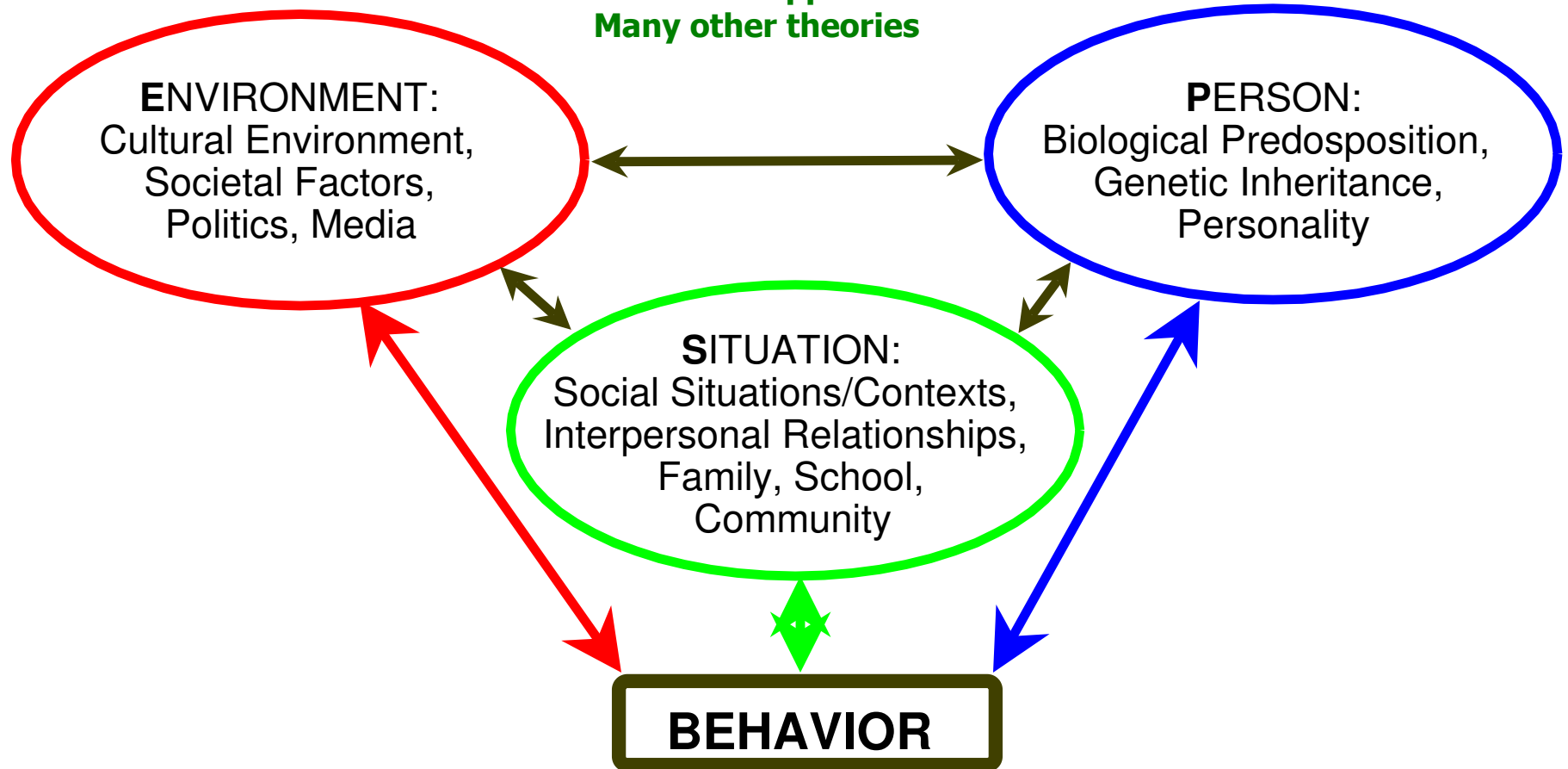
## ENVIRONMENTAL

## GENETIC

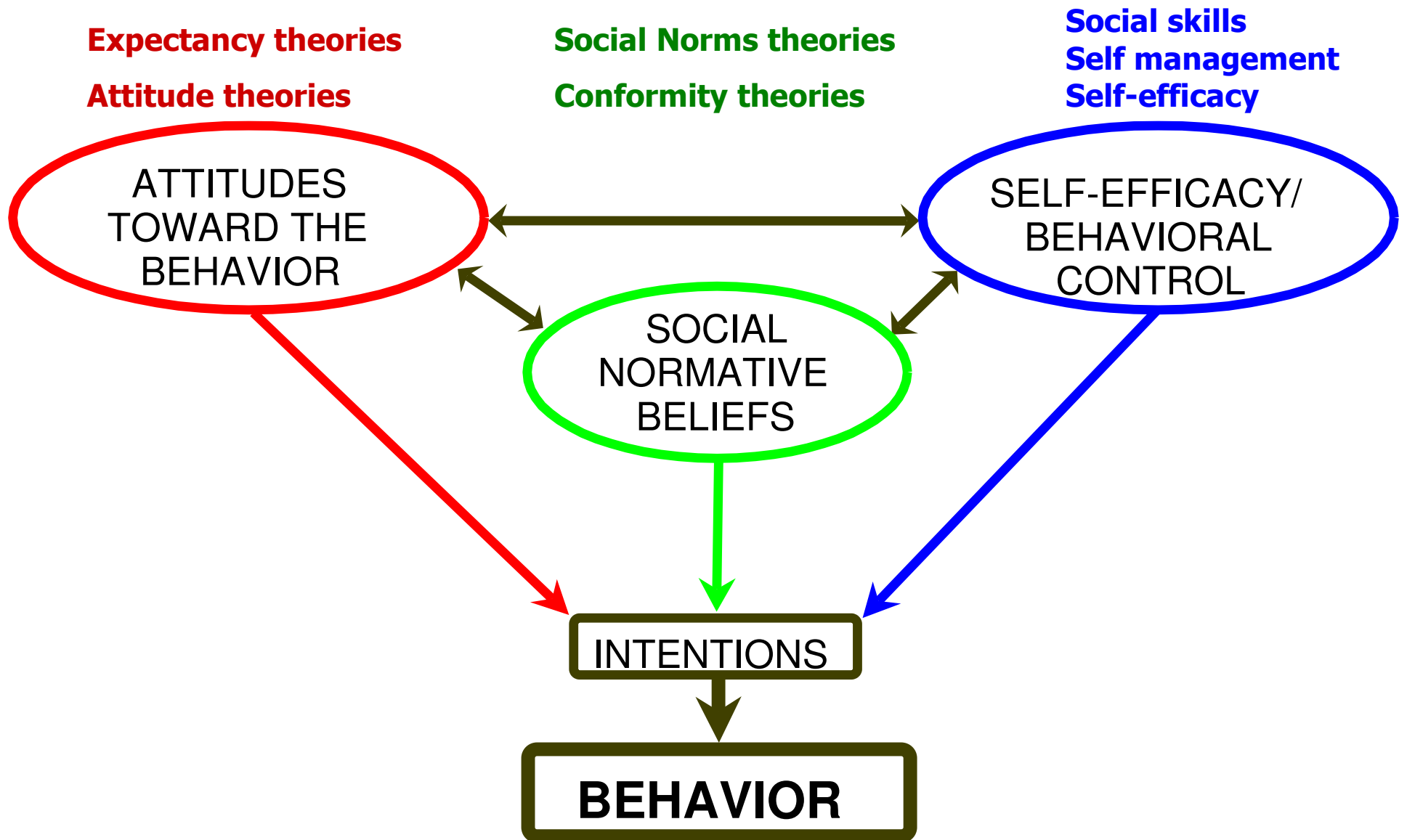
**Class Conflict**  
**Low SES, Anomie**  
**Social Disorganization**  
**Strain Theory (Merton)**  
**Radical Theories**

**Social Control (Elliott)**  
**Family Systems (Brooks)**  
**Peer Clustering (Oetting)**  
**Social Comparison**  
**Social Support**  
**Many other theories**

**Early Biological theories**  
**Psychoanalytic theories**  
**Resilience (Garmazey, Others)**  
**Personality theories**  
**Self-Control (Gottfredson/Hirschi)**



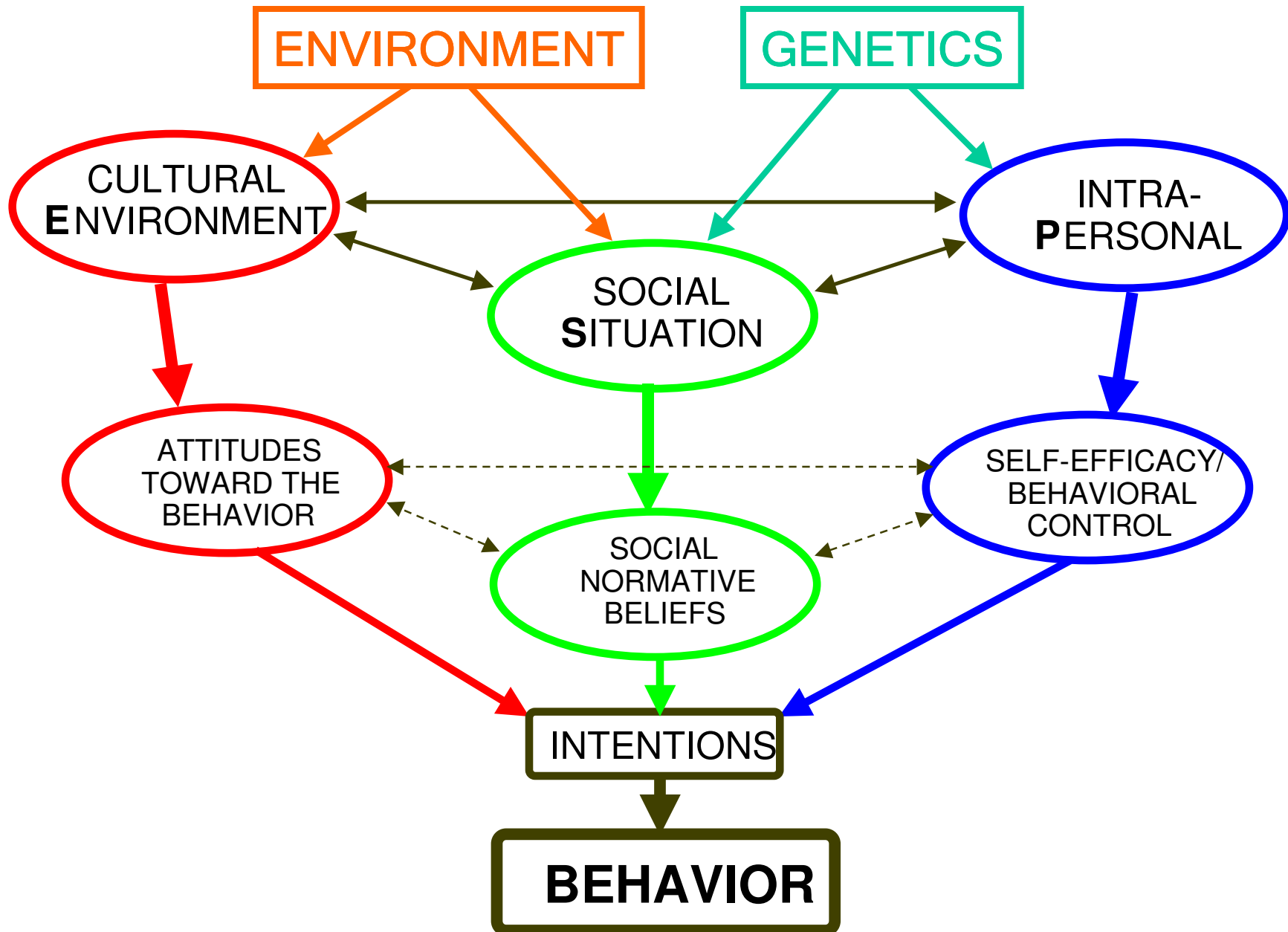
# The Most Proximal Predictors of Behavior: Correlated Factors (Ajzen & Fishbein, Bandura)



## TTI SYSTEM Postulates I:

- Behavioral choices/development are influenced by a **complex system of factors**
- All behavior choices are influenced by **GENETIC** and **ENVIRONMENTAL** factors
- Genetic and environmental factors act through **three “streams of influence”**
  - **INTRAPERSONAL/PSYCHOLOGICAL**
  - **INTERPERSONAL/SOCIAL**
  - **SOCIOCULTURAL/ATTITUDINAL**

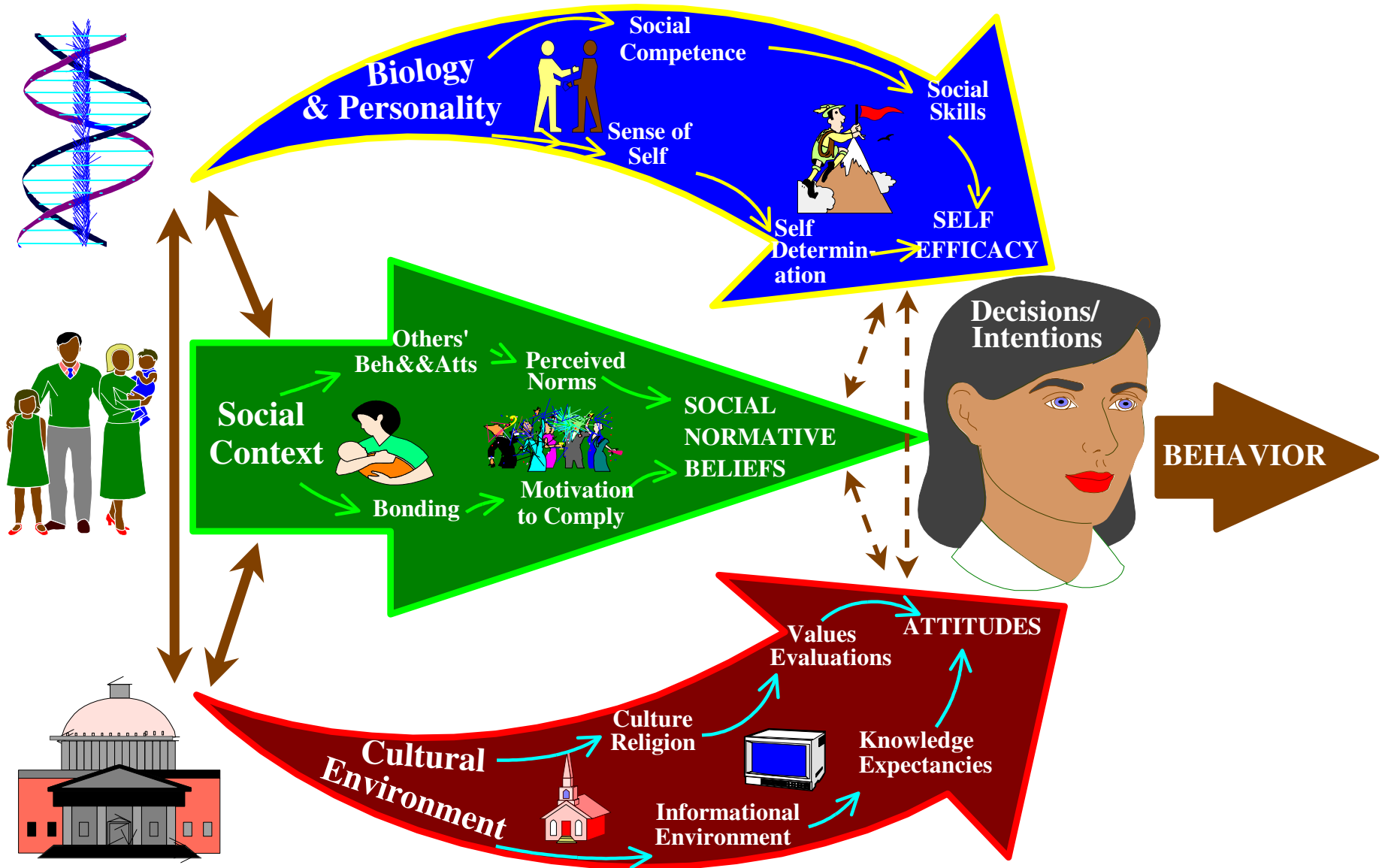
# THE BASIS OF THE THEORY OF TRIADIC INFLUENCE



## TTI SYSTEM POSTULATES II:

- All three (triadic) streams of influence each have **two substreams** (making 6 altogether):
  - 3 informative/cognitive/thoughts substreams
  - 3 control/affective/feelings substreams
- All (sub)streams of influence flow from causes most distant (ultimate and distal) to causes closest to (proximal to) the behavior of interest -- a cascade of multiple and interacting influences
  - Proximal causes **predict** most behavior
  - Distal and ultimate causes **help explain it**

# THE BASICS OF THE THEORY OF TRIADIC INFLUENCE



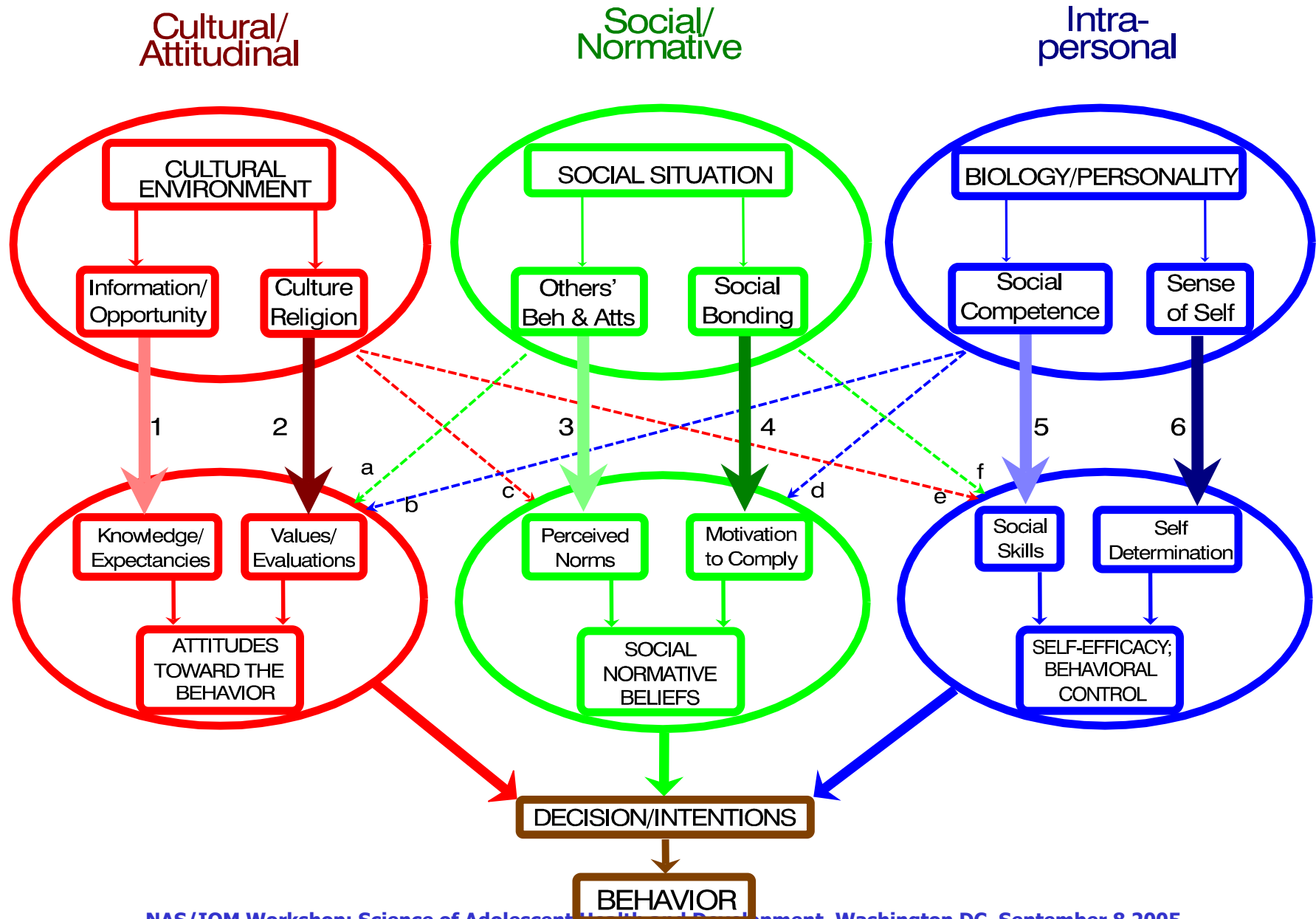
## TTI SYSTEM POSTULATES III:

INTERACTIONS BETWEEN STREAMS CAN INCREASE OR REDUCE BOTH RISK AND/OR PROTECTION FACTORS (MODERATORS)

- -ve sense of self can increase risk in poor families/communities
- +ve sense of self can protect against poor family/community opportunities
- -ve community/family forces can increase effects of poor sense of self
- +ve community/family forces can protect against poor sense of self (or even protect against the development of poor sense of self)

# THE THEORY OF TRIADIC INFLUENCE:

Distal/macro and proximal/micro influences on behavior



## TTI SYSTEM POSTULATES IV:

- Once a behavior occurs, the resulting reactions/experiences (thoughts and feelings) **feed back** to change the original causes
- Feedback **changes the likelihood** of engaging in the same or a similar behavior in the future
- Thus, causes and effects are in a **continuous cycle**:
  - with each behavior changing the causes, and
  - the changed causes leading to the same, similar or different behavior over time
- Most influences can have positive or negative values;
  - The more positive influences there are, the more likely is positive behavior
  - The more negative influences there are, the more likely is negative behavior

# THE THEORY OF TRIADIC INFLUENCE

Levels of Causation

**Cultural/  
Attitudinal  
Stream**

**Social/  
Normative  
Stream**

**Intra-  
personal  
Stream**

Ultimate Causes

**CULTURAL ENVIRONMENT**

**SOCIAL SITUATION**

**BIOLOGY/  
PERSONALITY**

Social Personal Nexus

Information/  
Opportunity

Culture  
Religion

Others'  
Beh & Atts

Social  
Bonding

Social  
Competence

Sense  
of Self

Distal Causes

Knowledge/  
Expectancies

Values/  
Evaluations

Perceived  
Norms

Motivation  
to Comply

Social  
Skills

Self  
Determination

Expectancies & Evaluations

Cognitions & Affect

**ATTITUDES  
TOWARD THE  
BEHAVIOR**

**SOCIAL  
NORMATIVE  
BELIEFS**

**SELF-EFFICACY;  
BEHAVIORAL  
CONTROL**

Proximal Predictors

Decisions

**DECISION/INTENTIONS**

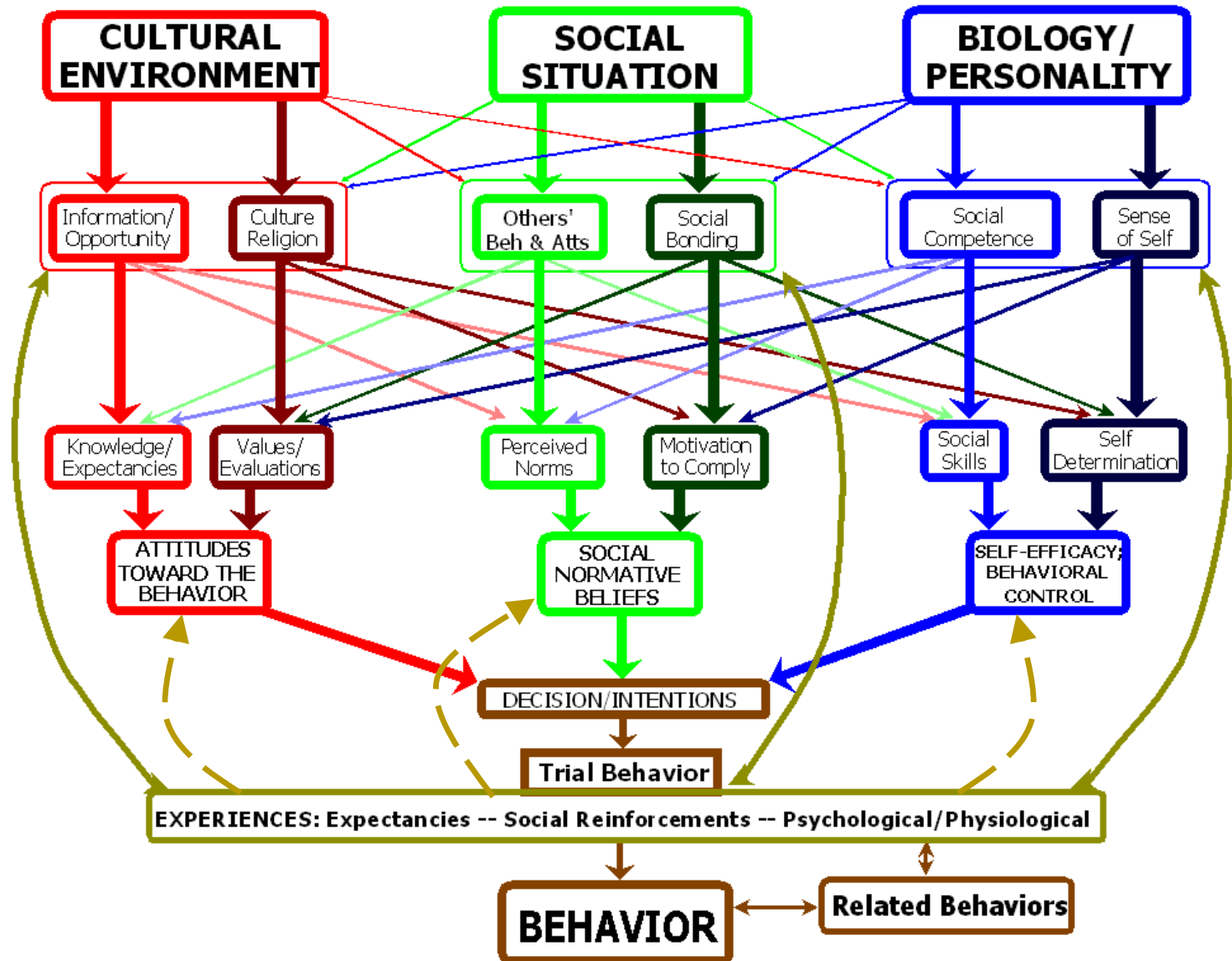
**Trial Behavior**

Experiences

**EXPERIENCES: Expectancies -- Social Reinforcements -- Psychological/Physiological**

**BEHAVIOR**

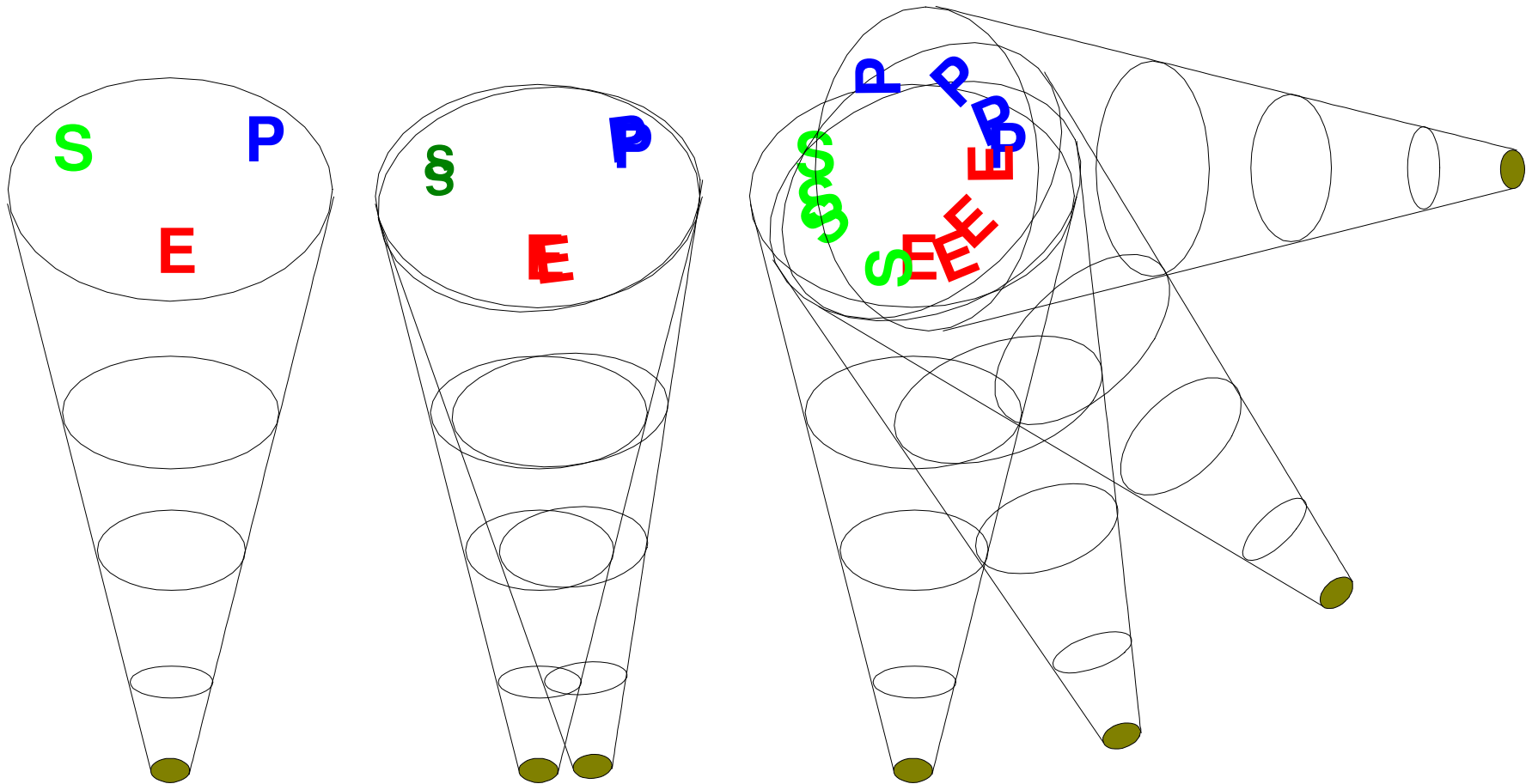
**Related Behaviors**



## TTI SYSTEM POSTUPATES V:

- The **reactions** to certain behaviors **feed back** to influence the causes of **related behaviors**
  - e.g., smoking and other drug use
- Related behaviors **have similar causes**, with the more distal causes being the most similar
- Less related behaviors (e.g., smoking and skiing) have fewer causes in common
- Even related behaviors have some differences in proximal causes

**Closely and less related behaviors:  
Ultimate causes may be the same, distal predictors less so.**



**A  
single  
behavior  
Eg,  
smoking**

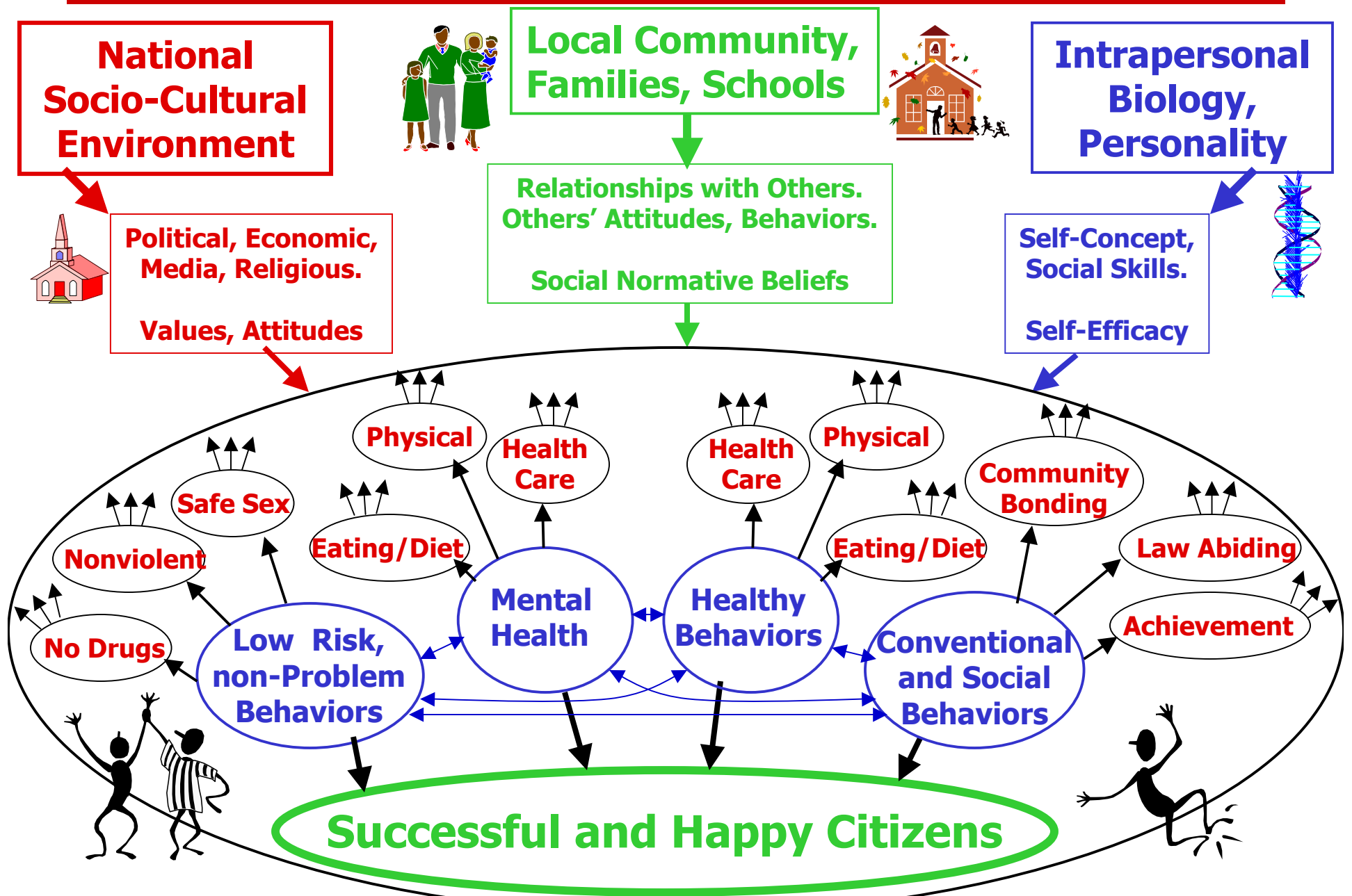
**Two  
closely  
related  
behaviors.  
Eg, smoking  
and drinking**

**Less and  
less related  
behaviors.  
Eg, smoking,  
drug abuse,  
sex, exercise**

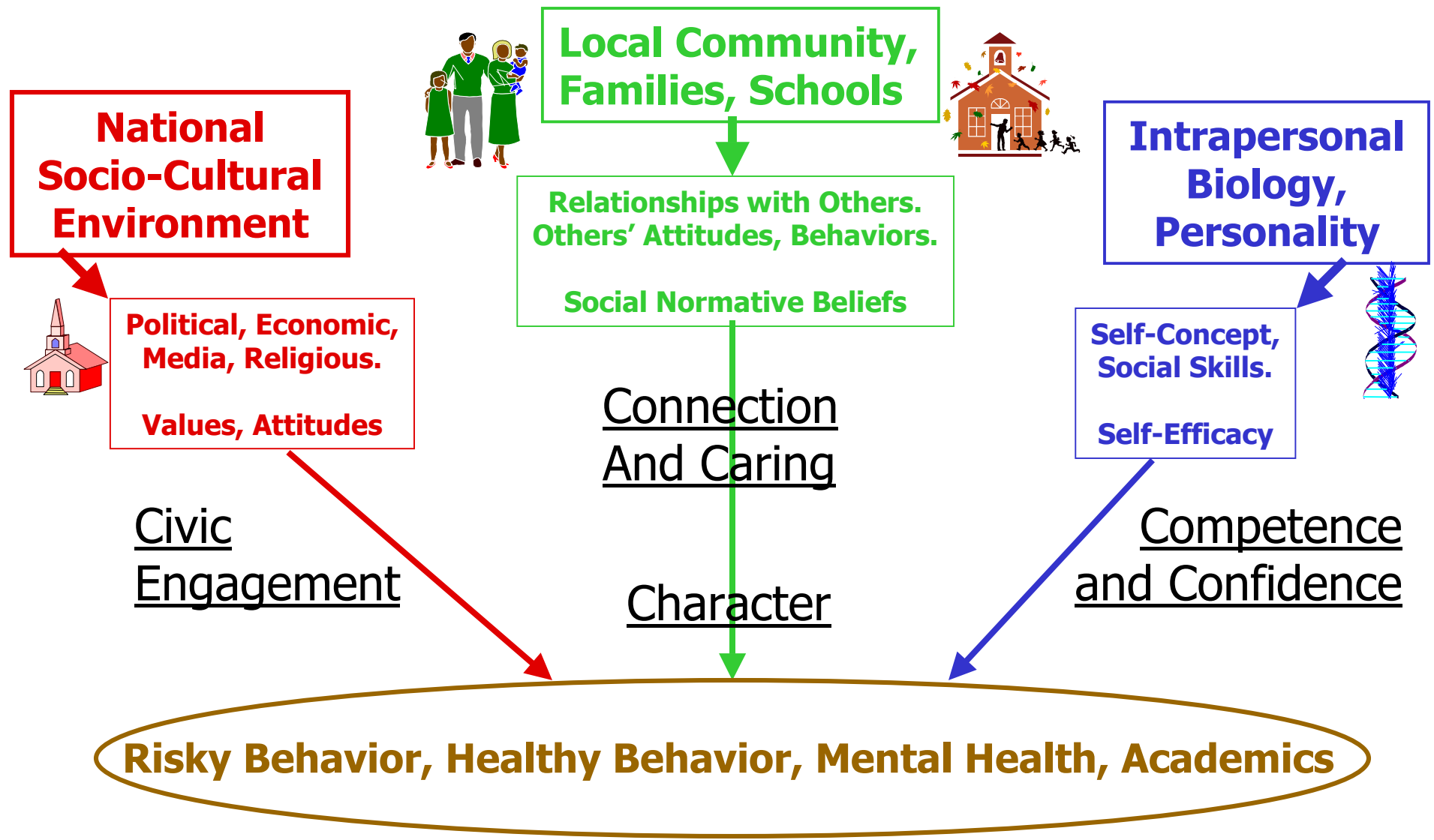
# TTI IS A DEVELOPMENTAL SYSTEMS THEORY: c.f. Lerner

- A relational meta-model
- Integrates levels of organization
  - Ultimate      Distal      Proximal
  - Ecological levels
    - individuals are nested within social contexts which are nested within cultural environments
- Involves individual      context relations
- Developmental and involves feedback
- Cascade of multiple and interacting influences
- Multi/Trans-disciplinary

# All Behaviors Have Common Causes



# And the C's (Lerner) are represented



# TTI: THE BIG III (& BIG 6) REASONS FOR DOING RISKY BEHAVIOR.

The BIG III correspond with the three streams.

The BIG 6 correspond with the six substreams, two per stream.

**I. SOCIO-CULTURAL/ATTITUDINAL:** *It makes me feel good, it is good for me,*

**1. General Knowledge**

Expectancies, expected consequences of behavior:  
*Experienced benefits*

**2. General Values**

Evaluations of the expectancies:  
*Values experience or consequences*

**II. SOCIAL/NORMATIVE:** *People who do it want me to also*

**3. Others behaviors and attitudes**

Perceived norms (how you think others think you should behave):

*Everyone else is doing it*

**4. Social bonding** (with whom are you bonded?)

Motivation to comply (who do you want to please?):

*To gain social acceptance*

**III. INTRAPERSONAL/SELF-EFFICACY:** *I can't help it*

**5. General social competence**

Social and behavioral skills (lack):

*I can't help myself*

**6. Sense of self**

Self-determination, will:

*Things remind me of it*

# IMPLICATIONS OF TTI FOR BEHAVIOR CHANGE AND PREVENTION

## ● OLD APPROACHES TO PREVENTION COULD NOT HAVE WORKED

- Informational approaches focus only on knowledge
- Values clarification approaches focus only on values
- Decision-making focuses only on the attitudinal stream
- Resistance skills programs often focus only on one social skill
- Only a few recent programs include changing social normative beliefs

## ● NEW INTERVENTIONS NEED TO BE BROADER, LONGER, DEEPER, ...

- But should not throw out all of the content of traditional approaches
- Add family participation and parenting/communication skills
- Teach multiple relevant skills
- Special interventions for children in high-risk families (genetics)
- Consider how to impact broad sociocultural influences -- perhaps kids can be advocates:
  - reduce sales/access to minors (alcohol and tobacco)
  - eliminate advertising, alcohol and tobacco, billboards and TV
  - increase taxes on tobacco and alcohol
  - change school lunches
  - reduce exposure to violence on TV and in movies

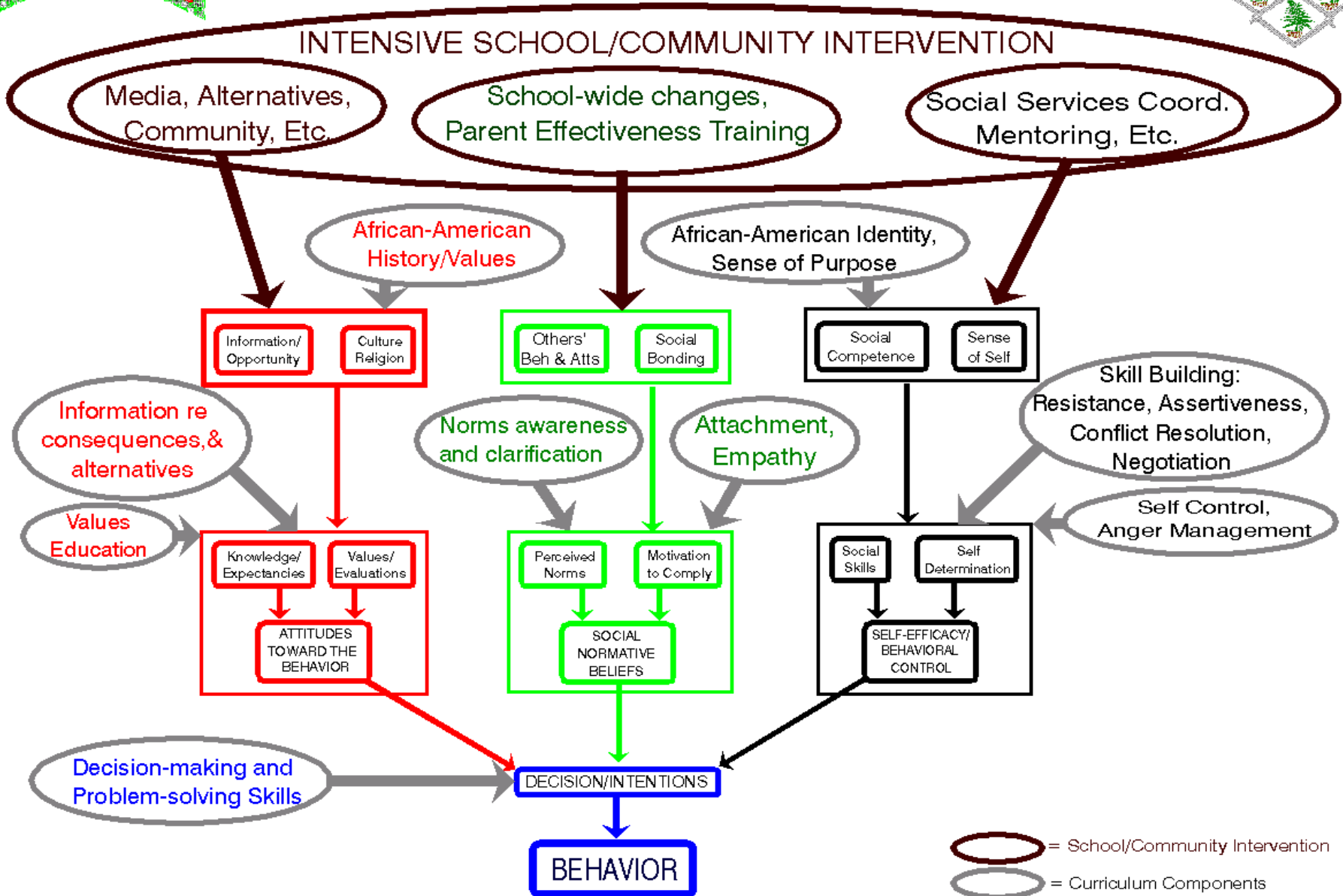
## ● USE BEHAVIORAL CHANGE STRATEGIES FROM ALL SIX SUBSTREAMS

**The BIG 6 (or BIG III) REASONS FOR DOING RISKY BEHAVIOR and corresponding REASONS FOR BEHAVIOR CHANGE, and BEHAVIORAL CHANGE STRATEGIES**

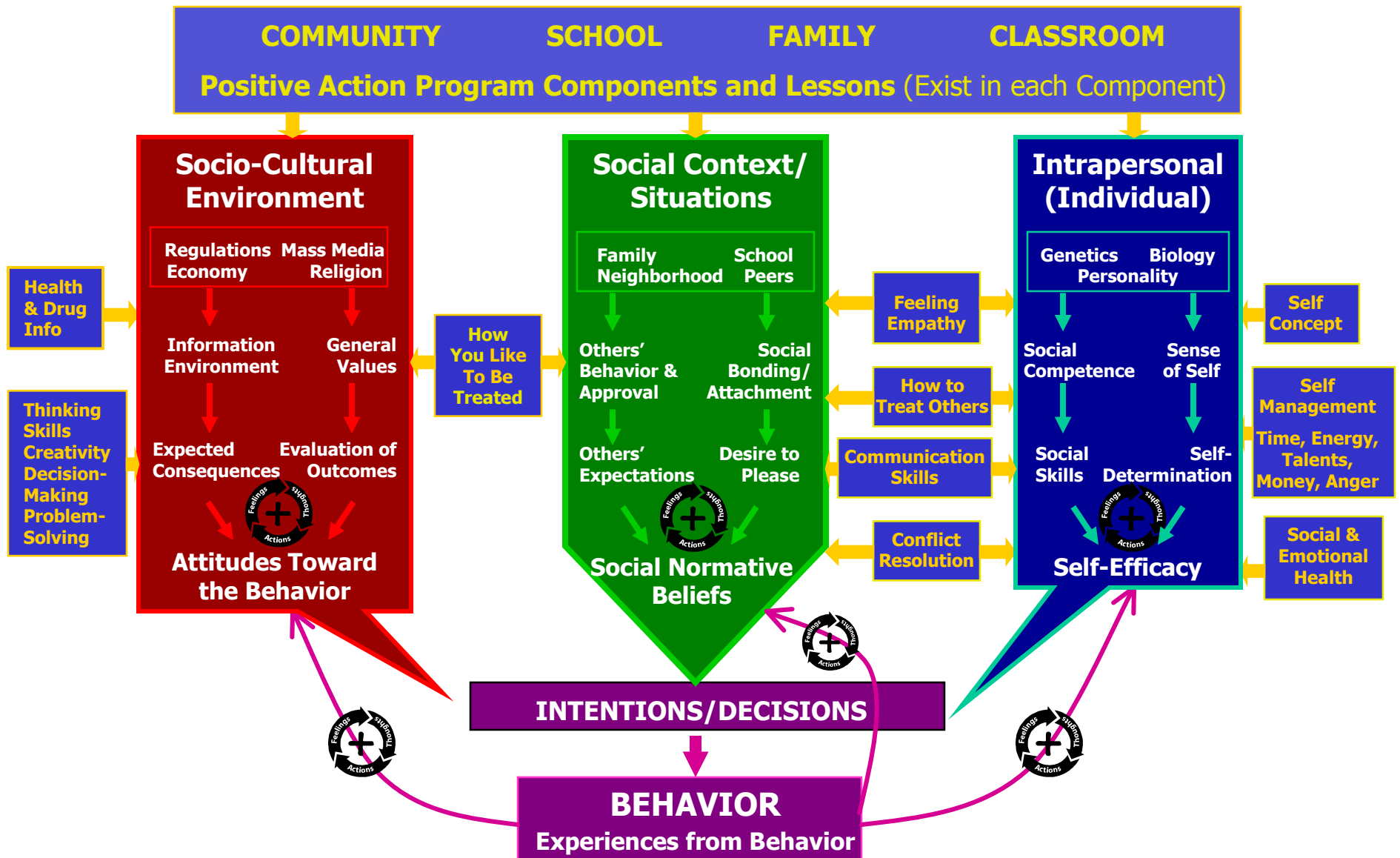
	<b>REASONS FOR DOING RISKY BEHAVIOR</b>	<b>REASONS FOR BEHAVIOR CHANGE</b>	<b>BEHAVIORAL CHANGE STRATEGY</b>
<b>I.</b>	<u>Perceived/Experienced benefits, makes me feel good, good for me.</u>	<u>It will be good for me</u>	<u>Observable benefits/reduced harm</u>
1.	<b>Perceived/Experienced benefits</b>	To gain certain benefits and/or avoid negative consequences	<b>Information; Make benefits salient/visible</b>
2.	<b>Values perceived experience or consequences</b>	To improve myself (or my health) in ways I value	<b>Values clarification, Make improvements salient</b>
<b>II.</b>	<u>Important others want me to, it's what others expect of me, social reinforcement</u>	<u>Important others want me to, it's what others expect of me.</u>	<u>Modeling and social reinforcement</u>
3.	<b>Everyone else is doing it</b>	Everyone else is doing it.	<b>Model/demonstrate behavior</b>
4.	<b>To gain social acceptance</b>	Social pressure/support, to please others	<b>Social reinforcement/support</b>
<b>III.</b>	<u>Behavioral skills or self-determination (Skill + Will)</u>	<u>I am confident that I can do it.</u>	<u>Skill + Will</u>
5.	<b>I don't know how not to, or how to change</b>	I think I have the skill to do it	<b>Teach/learn/practice skills</b>
6.	<b>Things remind me of it (cues), I can't help myself</b>	I have the self-determination (will) to do it	<b>Build in prompts, cues, reminders</b>



# Program Components and Expected Effects



# **Positive Action** Program Components Mapped Onto The Theory of Triadic Influence



# Basic Philosophy (Theory of Action) of The *Positive Action* Program

“You feel good about yourself  
when you do positive actions

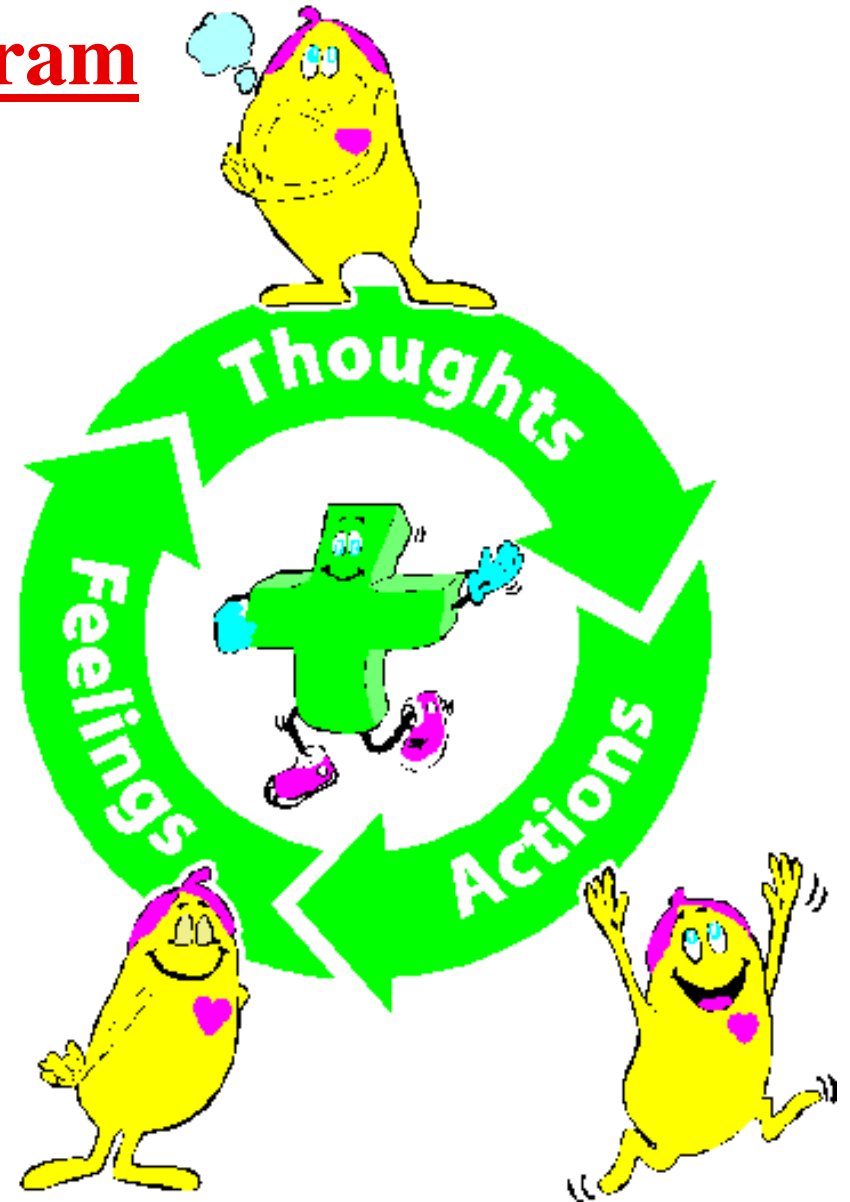
(C.F. Cognitive Behavior Therapy and Positive  
Psychology);

You feel bad about yourself when  
you do negative actions

(C.F. Depression);

And there is always a positive way to  
do everything.”

Students, parents and teachers are  
taught what positive behaviors are  
and how this works for them all at  
the individual, family, school and  
community levels.



# Using the TTI to Plan Interventions

## 1. Determine if most of the causes of a behavior are in one stream.

If they are, attempt to alter variables closer to the top of the stream. The higher up the stream you make changes, the more people will change, and the more permanently they will stay changed. If they are not, move to #2 below.

When most of the causes are in the cultural/attitudinal stream.

Attempt to change cultural influences, such as mass media, and individual-level attitudes (and motivation).

When most of the causes are in the social/normative stream.

Determine if there are causes on higher tiers that can be altered -- such as school or worksite lunches or smoking policies. Then attempt to alter individuals' social normative beliefs

When most of the causes are in the intrapersonal stream.

Provide people with the needed social skills.

## Using the TTI to Plan Interventions

**2. Determine if most of the causes act through attitudes, social normative beliefs or self-efficacy (or their determinants).**

Each one of these has determinants in multiple streams. However, if you can identify one of these three cognitive-affective variables through which all of the others have most of their influence, then focusing the intervention will be easier (though not as easy as in #1 above).

## Using the TTI to Plan Interventions

**3. When most of the causes act through attitudes -- when people do not have appropriate attitudes or motivation to act appropriately.**

Design the intervention to alter individuals' attitudes toward the target behavior.

Also, determine if those attitudes are influenced most by factors from the **cultural**, **social** or **intrapersonal** streams. If those factors are modifiable, then also design a complimentary intervention to influence them. For example, national-level structural change or political agitation.

# Using the TTI to Plan Interventions

**4. When most of the causes act through social normative beliefs -- when people believe that the nondesirable behavior is normative or the desirable behavior is non-normative.**

Design the intervention to alter individuals' perceptions of norms and social normative beliefs.

However, social normative beliefs are also highly likely to be determined by general knowledge and values from the cultural stream, so the intervention should also include attempts to alter those.

Social normative beliefs are also influenced by people's sense of self, which may be thought of as empowerment. It is sometimes possible to develop programs to enhance the sense of empowerment felt by members of a particular group, neighborhood or community that might previously have been disenfranchised. One approach may involve local-level structural changes or political agitation.

## Using the TTI to Plan Interventions

### 5. When most of the causes act through self-efficacy -- because people do not have the skills they need or the confidence to use them.

The first line of attack is to teach people the skills they need, give them opportunities to practice those skills, and provide feedback so that they can learn the skills well and also develop the confidence to use them.

However, self-efficacy is determined as much by variables from the **social/normative stream (social bonding and observation of others' behaviors)** and **the cultural environment (knowledge/beliefs/outcome expectancies and general values)** as by factors from the intrapersonal stream, so other measures may be necessary. Indeed, the variables listed in the previous sentence form the core of Bandura's (1977, 1986) social learning theory. Thus, alteration of the **social situation (the behavior and expressed attitudes of important other people)** and **the target populations knowledge/beliefs and values** may also be helpful.

# References re TTI

- Petraitis, J., Flay, B.R., & Miller, T.Q. Reviewing theories of adolescent substance abuse: Organizing pieces of the puzzle. *Psychological Bulletin*, 117(1), 67-86. 1995.
- Flay, B.R. & Petraitis, J. The theory of triadic influence: A new theory of health behavior with implications for preventive interventions. In Albrecht, G.S. (ed.) *Advances in Medical Sociology, Vol IV: A Reconsideration of models of health behavior change* (pp. 19-44). Greenwich, CN: JAI Press, 1994.
- Flay, B.R., Petraitis, J., Hu, F. The theory of triadic influence: Preliminary evidence related to alcohol and tobacco use. In Fertig, J.B., Allen, J.P. (eds.) *NIAAA Research Monograph - Alcohol and Tobacco: From Basic Science to Clinical Practice* (pp. 37-57). Bethesda, MD: U.S. Government Printing Office, 1995.
- Flay, B.R. Understanding environmental, situational and intrapersonal risk and protective factors for youth tobacco use: the Theory of Triadic Influence. *Discussant Comments. Nicotine & Tobacco Research*, 1, S111-S114, 1999.

# THE QUADRATIC INFLUENCE SYSTEM


# A Complex Systems Theory of Behavior



**GENETIC**  
Biological and psychological determinants of behavior

**ENVIRONMENTAL**  
Social and cultural influences on behavior

**BIOLOGICAL**  
  
BIOLOGY

**PSYCHOLOGICAL**  


**SOCIAL**  


**CULTURAL**  


**REACTIVITY**

**SELF-CONFIDENCE**

**SOCIAL ACCEPTANCE**

**CONSEQUENCES**

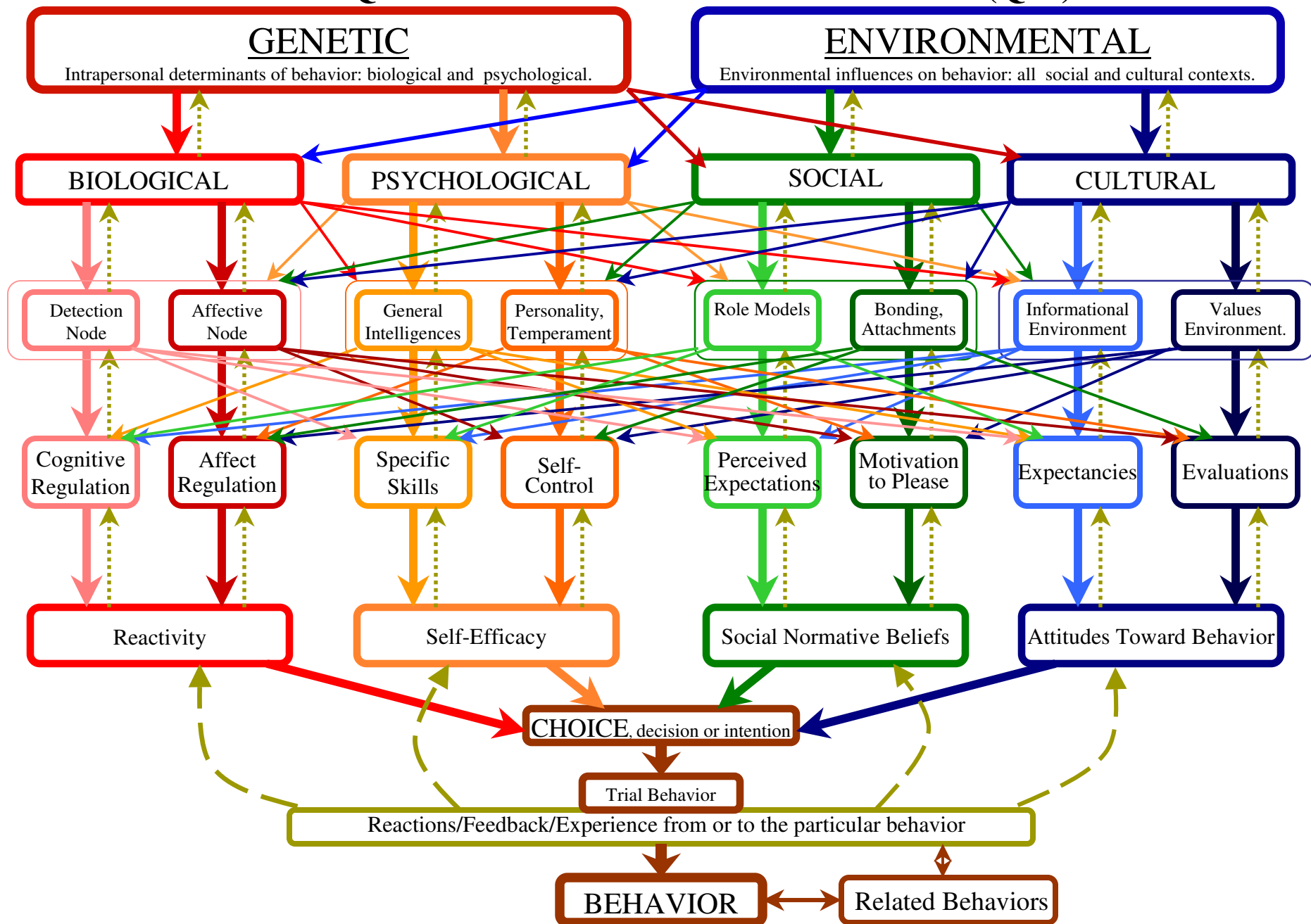
**CHOICE, decision or intention**

**BEHAVIOR**

**REACTIONS/Feedback/Experience**  
from or to the particular behavior



# THE QUADRATIC INFLUENCE SYSTEM (QIS)



# THE QUADRATIC INFLUENCE SYSTEM

