

Discussant Comments

Understanding environmental, situational and intrapersonal risk and protective factors for youth tobacco use: the Theory of Triadic Influence

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Introduction

The presentations in this session dealt with four broad variables that influence child and adolescent (youth) use of tobacco-pricing, industry advertising and promotion, access, and prevention programs. Changes in pricing, advertising and access attempt to reduce the supply of tobacco products to youth, and are thought of as supply-side approaches. Prevention programs attempt to reduce demand for tobacco by youth, and are thought of as demand-reduction approaches. I will present a theoretical view that integrates both of these approaches, along with many others, summarize findings in terms of that theory, and suggest areas where we need further research.

The Theory of Triadic Influence

The Theory of Triadic Influence (TTI) integrates variables and processes from many sociological and psychological theories of behavior onset and change (Flay & Petraitis, 1994; Flay, Petraitis & Hu, 1995; Petraitis, Flay & Miller, 1995). It provides a unified theoretical framework with which to consider influences on, or the causes of, the behavior of youth.

The TTI unifies proximal and distal influences on behavior (Figure 1). As discussed by sociologists and social ecological theorists, distal influences on behavior can arise from the person (intrapersonal), the situation (interpersonal), the broader environment (socio-cultural) and their interaction. Proximal influences are cognitive and affective in nature: attitudes toward the behavior, social normative beliefs, self efficacy, and intentions. The TTI links the three major distal types of influences

and the three major types of proximal influences through several levels of intervening or mediating variables and processes (Figure 2).

The most *distal influences*, labeled ultimate influences in TTI, tend to be value and control oriented. In the broad socio-cultural environment, they include access to information or knowledge, and opportunity to engage in the behavior. Sociologists think of opportunity in this context as social control, for example policies and laws. In the social context (i.e., situation), distal influences include perceptions of (i.e., the value placed on) the behavior and attitudes of others, and social bonding or attachment (social control). In the intrapersonal realm, distal influences include general (social) competence (i.e., self control) and sense of (i.e., value of) self.

The proximal influences are expectancy and evaluation driven, and they are, in turn, derived from or influenced by the distal and ultimate influences. Attitudes toward a behavior are derived from expected outcomes of the behavior (expectancies) and the value placed on those outcomes (attitudes). These are, in turn, derived from information/opportunity and cultural beliefs/practices, respectively. Social normative beliefs are derived from perceptions of the behavior expected by others and one's motivation to comply with or please those others (social normative beliefs). These are, in turn, derived from other's behaviors/attitudes, and social bonding, respectively. Self efficacy (for a specific behavior) is derived from one's skills to do the behavior and one's strength of will to engage in said behavior. These are, in turn, derived from general social competence and sense of self. Finally, decisions of whether or not to engage in certain behaviors (intentions) are derived from attitudes, social normative beliefs and self efficacy regarding each behavior.

Clearly, not all influences from ultimate or distal levels have their effects on behavior directly through

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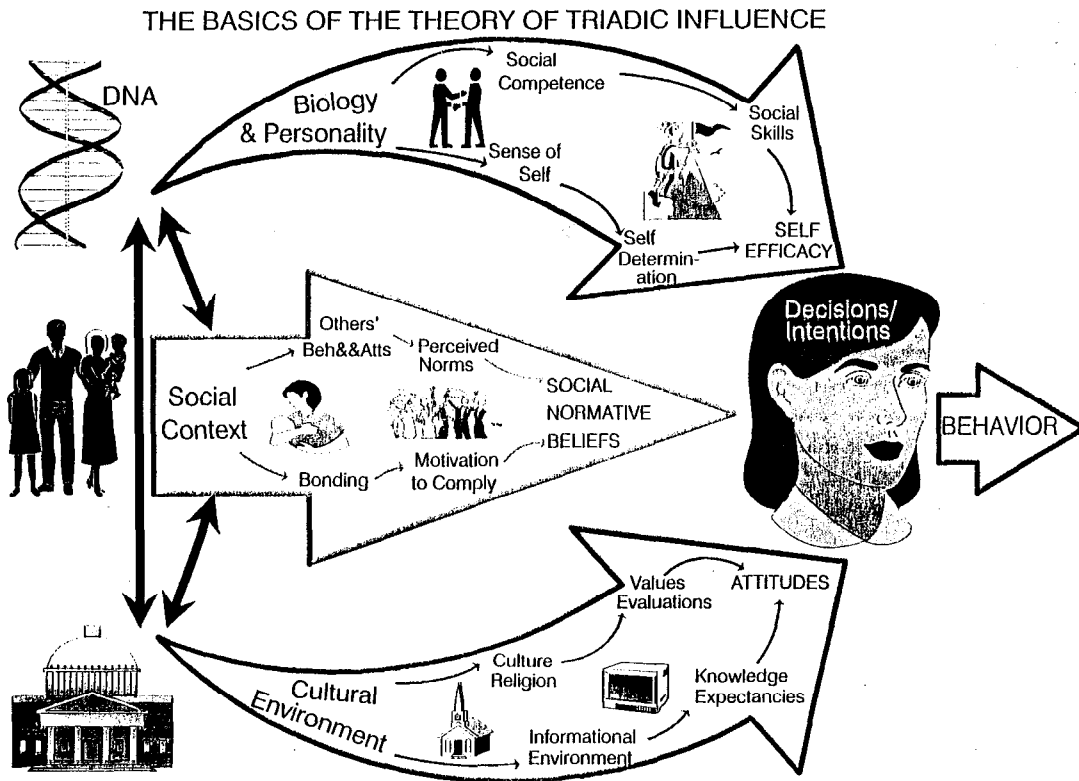


Figure 1. The basics of the Theory of Triadic Influence.

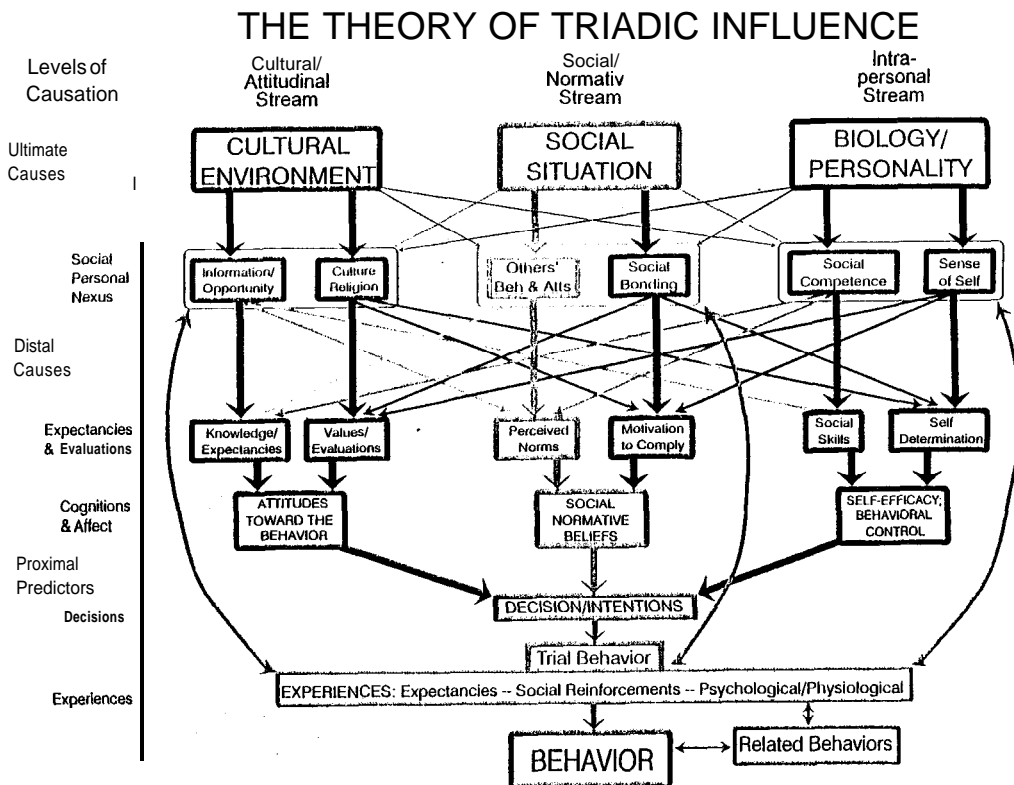


Figure 2. The Theory of Triadic Influence.

one stream, that is, directly through the proximal variable in the same 'stream.' Some effects occur through cross-over paths and interactions. Furthermore, any experience with a behavior feeds back and changes the

original causes of that behavior. That is, influences on behavior comprise a **dynamic system** that changes as youth develop and as they have (or don't have) experience with the behavior.

Supply-side influences on smoking

The supply-side variables, pricing, advertising/promotion, and access policies, are located at the top of the broad socio-cultural stream of the **TTI**. Thus, whatever effects they have will have broad ramifications, because they can influence many other variables. For example, pricing of cigarettes influences youth smoking not only via the direct path of altering their attitudes toward smoking, but also via indirect paths, such as reducing parent or other adult smoking, making smoking appear less socially acceptable, or reducing self efficacy to obtain cigarettes.

Price

Econometric analyses, reviewed by Dr Chaloupka, suggest that use of tobacco by youth can be influenced by pricing. Youth may be three times as sensitive to pricing as adults, with this sensitivity reducing among older youth as they gain experience.

We need further research on ethnic differences in price sensitivity. Ethnicity is an intrapersonal and a socio-cultural variable with its own influences, as reviewed by Dr Mermelstein in Session II. Gender is another variable that is both intrapersonal and socio-cultural.

We also need further research on possible compensating behaviors of youth in response to price increases. Removing the means of meeting felt needs may force youth to identify other means of meeting that same need. If positive alternatives are not provided, youth may identify and adopt negative ones. **They** may even adopt alternative nicotine delivery products, so research is needed on them. Finally, we need to improve our understanding of the relationships between different pricing and other legislative policies—are they synergistic to cause increased effects, or do they interact to cancel each other out?

Advertising and promotion

Research reviewed by Drs Emery, Choi, and Pierce reveals that youth are highly susceptible to advertising and promotion of tobacco products. Advertising succeeds by appealing to the needs and desires of youthful audiences. Advertisers are very skilled at appealing to youth at all levels of **TTI**. For example, cigarette advertising sells the ideas that smoking can make you feel good physically (attitudes), psychologically (sense of self) or socially (social normative beliefs).

We need to conduct further research on effective replacement behaviors and products for youth if advertising/promotion of cigarettes is banned. Further research is also needed on effective counteradvertising. We need to ensure that such efforts (a) reduce receptivity of youth to industry messages and (b) reduce smoking initiation.

Access policies

As Dr Rigotti noted, youth consistently report having little difficulty obtaining tobacco products (called availability, access or opportunity in the various literatures). Policies that aim to prevent the sale of tobacco products to youth, include the banning of (a) vending machine sales, (b) self-service displays of tobacco products, (c) sale of single cigarettes, or (d) possession of tobacco by minors. From a theoretical perspective, all of these approaches should work if implemented fully. Research (a) demonstrates that policies must be enforced before vendors alter their behavior and (b) suggests that enforced policies reduce youth tobacco purchases.

One question raised is the extent to which access policies actually affect youth tobacco use, because youth can obtain tobacco products from other sources such as friends or illegally—further research is needed on this issue. Research is also needed on reducing youth access to tobacco through noncommercial means (friends, relatives, stealing). Youth possession laws have not been evaluated—we do not know if they will have a net positive influence (reducing possession and use) or negative effect (perhaps, for some youth, increasing the glamor associated with possession).

Demand-side influences on smoking

Demand-side influences on youth behavior include all those factors in the intrapersonal stream, including biological and pharmacological factors and their interaction with physiological and psychological factors, that are addressed in great detail in every other session of this conference. They also include: (a) the cognitive and affective results of the socio-cultural and interpersonal streams, that is, outcome expectancies and their evaluations (attitudes); (b) perceptions of the behavior expected by others and one's motivation to comply with or please those others (social normative beliefs); and (c) one's skills to do the behavior and one's strength of will to engage in said behavior (confidence, behavioral control or self-efficacy).

Etiological research during the past four decades or more has demonstrated that all of these hypothesized demand-side factors do, indeed, play a role in the prediction/cause of adolescent tobacco use (Conrad, Flay & Hill, 1992; Hawkins *et al.*, 1992—see also papers in this meeting by Drs **McMahon** and Shiffman). Social influences—parent and other adult use, parent and other adults attitudes about use (e.g., approval or disapproval of child use)—are not reviewed in detail by any presenter at this conference (only briefly by Dr Mermelstein), but their influence on youth tobacco use have received strong support in the literature (Conrad *et al.*, 1992; Flay *et al.*, 1994; Hawkins *et al.*, 1992).

Prevention research during the past two decades, summarized by Dr Pentz, has also addressed program components that address all of the demand-side influences on behavior. An earlier generation of this

research demonstrated that school-based curriculum that include only information or decision-making (both determinants of attitudes) do not work (Flay, 1985, 1986). School-based programs can work if they are theory based, include teaching of social skills, and include changing of social normative beliefs (in addition to knowledge and decision-making).

Effects of specific program components are predicted by particular theories; all of them are predicted by TTI. General learning theories and the feedback aspect (dynamic properties) of TTI would also predict that more rather than fewer sessions, multiple years of programming, and active engagement of students in learning (rather than being passive or didactic) would improve program effects, and research has supported this. Dr Pentz also reported that program effects may be further enhanced by teacher training, engaging parents (enhances parent bonding), and supplementing with mass media and/or community-wide activities, all of which would be predicted by TTI and other theories.

We need further research on other kinds of programs that might enhance the effects of student-oriented prevention programs. For example, parent training programs that improve parents' abilities (and confidence) to discipline youth while still displaying warmth (enhances bonding), could be offered to parents of children receiving school-based programs.

As noted by Dr Pentz, we also need research on factors that are most likely to promote the dissemination of effective programs to our schools, their adoption, and their implementation with high integrity, and their continued use. Continued use of effective programs should lead to reduced demand for tobacco products by youth.

Summary

The Theory of Triadic Influence provides a unified and parsimonious integration of (a) the many empirical findings regarding correlates of, or influences on, youth tobacco use, (b) the many sociological and psychological theoretical explanations of youth tobacco use, and (c) the various tested approaches to addressing the supply-side and demand-side factors that influence youth initiation of tobacco use.

Findings reported in this section by Drs Chaloupka, Emery, Choi, Pierce, and Rigotti support the important role of socio-cultural factors, particularly price, advertising/promotion and access policies, in influencing youth tobacco use. The TTI reminds us that these factors are fairly distal, so that their mechanisms of action may be multiple, and other approaches to prevention might multiply the effects of changes in any one of these factors. For example, a counteradvertising message might increase the overall effects of pricing by emphasizing the social unacceptability of smoking that might be implied by higher prices (and associated lower levels of use by adults).

Findings reviewed by Dr Pentz, together with those reported in other sessions (particularly those by Drs Mermelstein, McMahon, and Shiffman) support the role of all of the other social and intrapersonal factors suggested in the TTI. Much further research is needed, however, on causal processes, that is, on understanding how the various factors have their effects. Factors may have their influences through various mechanisms (e.g., mediation, moderation, feedback), and knowledge of these mechanisms may lead to improved approaches to prevention. Prevention programs designed for whole populations of students (that is, universal programs) may need to be supplemented by special programs tailored for students at higher risk than most (e.g., children with conduct disorder) (that is, selective intervention). Students who become heavy experimenters may require special prevention programs (i.e., indicated interventions)-such programs are yet to be designed and evaluated. Finally, youth who use enough tobacco, or use on enough occasions, to become dependent or addicted will need cessation programs to help them quit-these will be reviewed in Section VI.

Acknowledgement

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