

## Are Popular Adolescents More Susceptible to Peer Influence?:

Popularity as a moderator peer selection and socialization of adolescent substance use

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Mathys, Burk, & Cillessen (submitted). Popularity as a moderator of peer selection and socialization of adolescent alcohol, marijuana, and tobacco use.

## Popularity, Peers, & Substance Use

- Popular adolescents are highly visible and socially dominant within peer networks
  - Not necessarily those who are well liked (Cillessen & Marks, 2011)
- Adolescents select friends with similar substance use behaviors and are socialized by their friends' behaviors
  - The relative importance of selection and influence differ for alcohol and tobacco use (Kiuru et al, 2010)
- Popularity socialization hypothesis (Allen et al., 2005) suggests that popular adolescents are more susceptible to peer influence, particularly for behaviors that are associated with status (risk) and accepted by peers.
  - Unfortunately, Allen et al (2005) used a measure of social preference (not popularity) to test this.

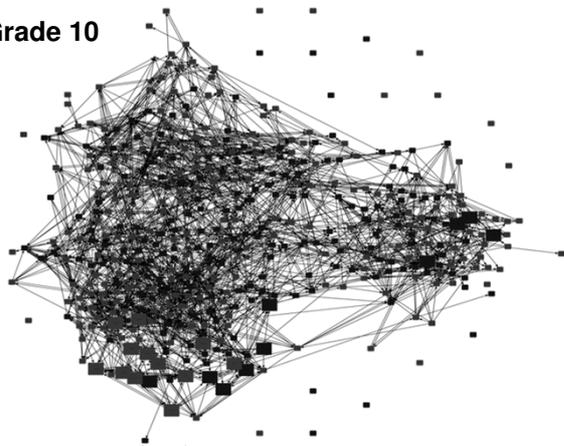
## Research Questions Hypotheses

- **How does popularity and substance use impact friendship dynamics?**
  - H1: Popular adolescents expected to be well embedded within friendship network
  - H2: Adolescents expected to select friends with similar popularity and substance use behaviors
  - H3: Popular adolescents more likely to select using friends?
- **How does popularity and friends' substance use impact changes in adolescent substance use?**
  - H4: Adolescents expected to increase use when friends use alcohol and marijuana
  - H5: Popular adolescents more susceptible to influence?

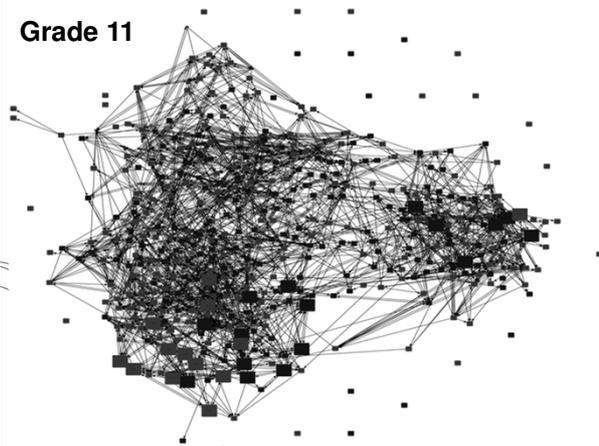
## Participants and Measures

- **Participants** (n = 450)
  - 53% female, M = 15.5 years at T1
  - 66% Anglo A, 20% African A, 12% Hispanic A, 2% Asian A.
- **Measures**
  - **Sociometric items**
    - "Who are your friends?" = *friendship networks*
    - "Most popular, least popular?" = *popularity*
  - **Self-reports**
    - **Alcohol use** in last 30 days (2 items)
    - **Marijuana use** in last 30 days (1 item)
    - **Tobacco use** in last 30 days (1 item)

Grade 10



Grade 11

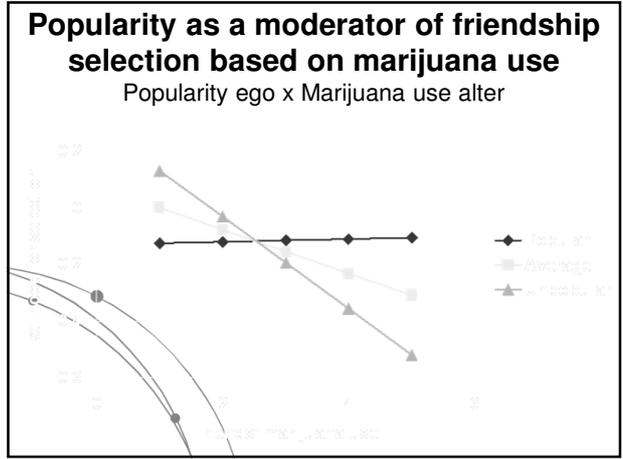
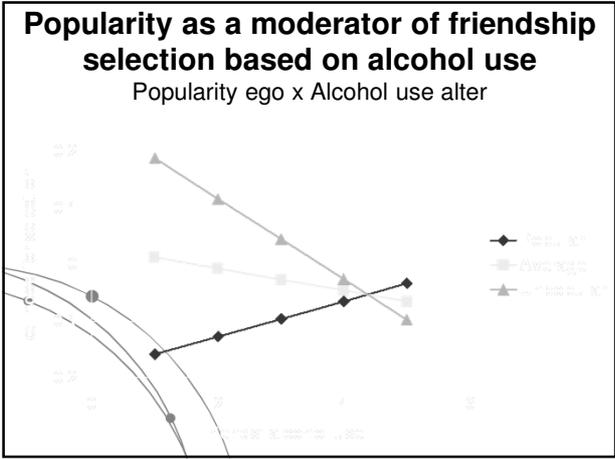
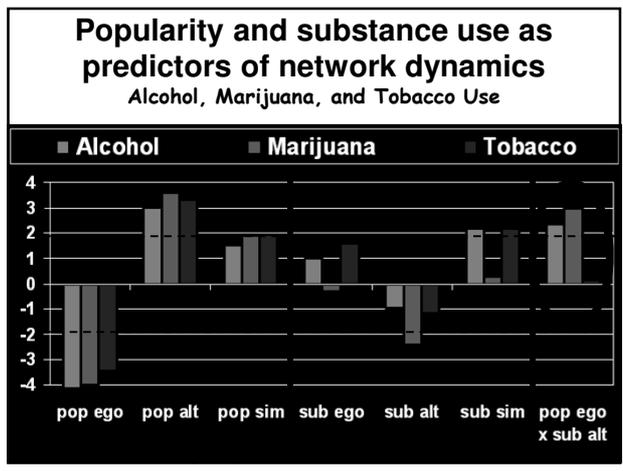
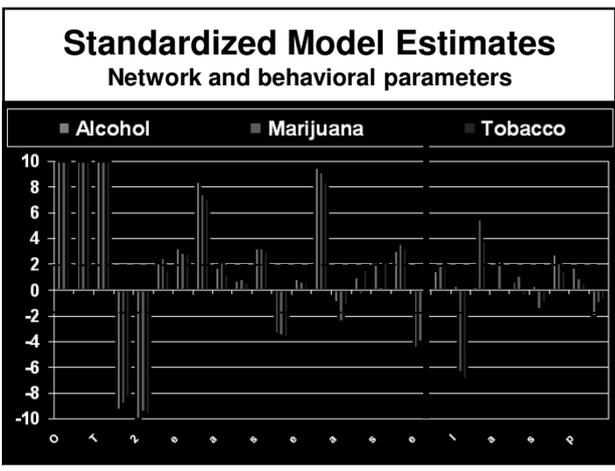


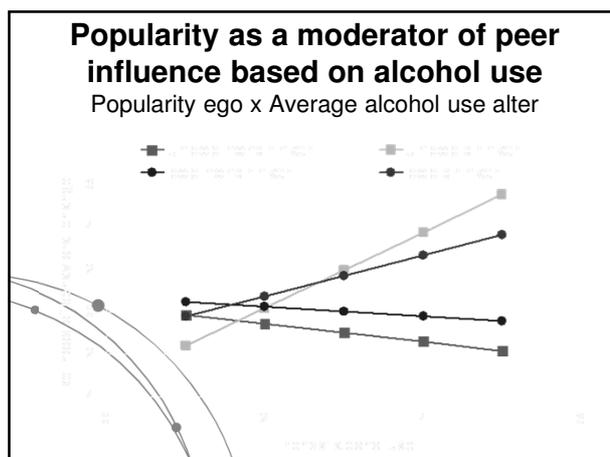
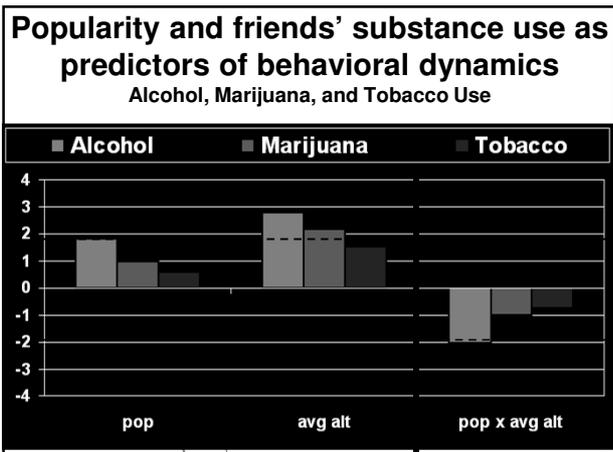
### Descriptives

Network and Behavioral Similarity

	Grade 10	Grade 11
<b>Network</b>		
Avg. degree	4.65	4.40
Reciprocity	.43	.45
Transitivity	.20	.21
<b>Behaviors (Moran's I)</b>		
Alcohol	.27	.24
Marijuana	.24	.25
Tobacco	.21	.18

- ### Stochastic Actor-Based Modeling (SAOM)...aka RSIENA
- Actor-based models...
    - Actors attempt to optimize their position in the network via two types of decisions:
      - who they nominate as peer associates
      - how they (report to) behave
  - ...of Network & Behavioral Co-evolution
    - Models the probability of changes in network ties and changes in individual behavioral categories
      - Micro-steps represent the most probabilistic sequence of smaller changes between observations
      - Use of continuous-time MCMC





- ### Summary
- How does popularity and substance use impact friendship dynamics?
    - Popular adolescents receive more noms, but...
    - Adolescents selected friends with similar alcohol and tobacco use (*homophilic selection*)
    - Unpopular adolescents LESS likely to select friends who use alcohol and marijuana
  - How does popularity and friends' substance use impact changes in adolescent substance use?
    - Adolescents influenced by friends' alcohol and marijuana use (*peer socialization*)
    - Unpopular (drinking) adolescents MORE likely to be influenced by friends' drinking behaviors

- ### Conclusions
- Popularity moderates peer selection and influence related to adolescent alcohol use
    - "Popularity" more likely to select using friends
    - "Unpopularity" more susceptible to peer socialization
  - More questions than answers.
    - Do these results generalize to earlier age groups, to other behaviors, or more homogeneous samples?
  - SAOM provides elegant and parsimonious way of disentangling selection and socialization, and for testing moderation