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#### **Adolescent Alcohol Consumption: Level of Consumption in the Friendship Group Impacts Friendship Choice and Friend Influence**

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Friend selection and influence effects contribute to friend similarity in alcohol consumption during adolescence. Less is known about how an adolescent's close friendship group affects these processes. This study examines the influence of an adolescent's close friendship group on alcohol consumption during adolescence. Specifically, we anticipate that friendship choice and friend influence will be impacted by the level of alcohol consumption in an adolescent's closest friendship group. Participants included 1419 Finnish students (729 females, 690 males) from 9 upper secondary schools. Two waves of data were collected, starting when participants were between 15 and 17 years of age ( $M = 16.36$ ,  $SD = 1.49$ ) and in the 10<sup>th</sup> grade.

Adolescents choose friends similar to themselves in levels of alcohol consumption. The level of alcohol consumption in the friendship group does not interact with friendship choice. Adolescents are influenced by their friends to engage in levels of alcohol consumption similar to their friends. The level of alcohol consumption in the friendship group interacts with this process so that adolescents in high drinking friendship groups experience increased levels of influence pressure. Alcohol consumption in an adolescent's close friendship group affects the degree of initial similarity in the friendship group and how influence pressure is experienced in the group. Influence pressure is strongest among high drinking friendship groups. This suggests that adolescents engaging in elevated levels of alcohol consumption may experience greater pressure to consume alcohol at increased rates, similar to their close friends.

# Adolescent Alcohol Consumption: Level of Consumption in the Friendship Group Impacts Strength of Friend Influence



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## Introduction

Friend similarity in behaviors and attitudes is well documented. Similarity among friends derives from selection, the process of choosing similar friends (Rodgers, Billy, & Udry, 1984), de-selection, the process of ending friendships with dissimilar friends (Cohen, 1977), and socialization (influence), the process of becoming more similar to friends over time (Urberg, DeJormencioğlu, & Pilgrim 1997).

Several studies have used SIENA (Snijders, Steglich, Schweinberger, & Huisman, 2007) techniques to estimate the relative importance of selection and socialization effects related to alcohol use (Kiuru, Burk, Laursen, Salmela-Aro, & Nurmi, 2010; Steglich, Snijders, & West, 2006). New procedures are also being developed to consider potential moderators of selection and socialization. These moderator analyses hold considerable promise, but obstacles remain. Specifically, there are no straightforward follow-up tests for statistically significant SIENA interactions.

The present study has two aims. The first aim of this study is to examine whether selection, de-selection, and socialization processes differ as a function of the friendship group's level of alcohol consumption. The second aim of this study is to extend SIENA models to examine two-way interactions between group characteristics and selection, de-selection, and socialization.

## Method

### Participants

Participants included 1419 Finnish students (729 females, 690 males) from 9 upper secondary schools. Two Waves of data were collected starting when participants were between 15 – 17 years of age.

### Friendship Groups

A standard sociometric inventory was used (Coie, Dodge, & Coppotelli, 1982) to create friendship groups. Individuals nominated up to 3 same-grade schoolmates with whom, "you most like to spend time with." Friendship groups consisted of reciprocal, unilateral, or indirect links from each member of the group to every other member of the group.

### Measures

Participants completed a self-report measure of alcohol consumption (Kiuru, Aunola, Vuori, & Nurmi, 2007), adapted from the Finnish National School Health Survey (Koivusilta, Rimpelä, & Rimpelä, 1998). The alcohol consumption item asked "How often do you use alcohol?" over the course of a week. Response categories ranged from 1 (never) to 5 (once a week or more often).

Table 1

Friend Selection, De-selection and Socialization on the of Basis Alcohol Consumption: SIENA Meta-analytic Results

Network effects	Mean Parameter		Standard Deviation	
	Est	SE	Est	$\chi^2$
<b>Control effects</b>				
Basic Network Rate (amount of friendship change)	5.42***	0.28	1.10*	14.71
Reciprocity (tendency to reciprocate friendship)	2.15***	0.09	0.47***	31.08
Transitivity (tendency to nominate friends of friends)	0.49***	0.03	0.07	6.18
Out-degree (density of nominations in the social network)	-3.16***	0.05	0.36***	32.96
Gender similarity (tendency to nominate same-sex friend)	0.71**	0.13	0.42**	21.72
<b>Selection effects</b>				
Alcohol similarity (friend selection for drinking similarity)	0.96**	0.39	1.85	11.53
Alcohol similarity X Friendship group level of drinking	0.12	0.72	2.49	4.95
<b>De-selection effects</b>				
Alcohol dissimilarity (friend de-selection for drinking dissimilarity)	-0.99	0.74	2.89	6.61
Alcohol dissimilarity X Friendship group level of drinking	-0.51	0.79	3.95	3.54
<b>Behavioral effects</b>				
<b>Control effects</b>				
Basic Behavioral Rate (amount of behavioral change)	1.42***	0.11	3.95	9.99
Linear Shape (general linear tendency to consume alcohol)	0.40**	0.14	0.69	7.47
Quadratic Shape (deviation from the linear shape)	-0.11*	0.06	0.24	6.12
Gender Effect	-0.21	0.25	0.89	3.61
<b>Socialization effects</b>				
Alcohol Average Alter (friend influence for drinking)	0.48*	0.21	0.70	4.04
Alcohol Average Alter X Friendship group level of drinking	-0.28*	0.17	0.61	1.94

Note.  $p < .05$ ;  $p < .01$ \*\*;  $p < .001$ \*\*\* (one-tailed)

Figure 1

Illustration of the Interaction Between Socialization Effects (Alcohol Average Alter) and Friendship Group Alcohol Consumption



Note.  $N = 69$  individual members of 35 high drinking groups (1/3 SD above the mean) and 67 individuals of 18 low drinking groups (1/3 SD below the mean).

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## Results

Table 1 presents the results of the SIENA model. The results indicate that selection and socialization contribute to similarity in alcohol consumption, but de-selection does not. Furthermore, friend influence interacts with the level of drinking in the friendship group.

**Selection.** The significant alcohol similarity parameter indicates that adolescents tended to nominate friends who are similar in alcohol consumption. There was no interaction between friend alcohol similarity and level of drinking in the friendship group.

**De-selection.** The alcohol dissimilarity parameter was not statistically significant, indicating that adolescents did not de-select friends on the basis of drinking. There was no interaction between friend alcohol de-selection and the level of drinking in the friendship group.

**Socialization.** The significant alcohol average alter parameter indicates that adolescents altered their drinking to resemble that of their friends. There was a statistically significant interaction between alcohol average alter and the level of drinking in the friendship group, indicating that friend influence over alcohol consumption varies across groups.

**Follow-up Illustration.** Figure 1 indicates socialization effects in the high drinking group, but not the low drinking group. Intraclass correlations increase in high drinking groups between Time 1 ( $r = -.07$ ) and Time 2 ( $r = .27$ ), whereas there is a slight decrease in the similarity of low drinking groups from Time 1 ( $r = .53$ ) to Time 2 ( $r = .48$ ). Initial similarity is highest among groups with low levels of drinking, but most of the increase in similarity occurs among groups with higher levels of drinking.

## Discussion

The present study advances our understanding of friendship by identifying how selection, de-selection, and socialization (influence) vary as a function of the amount of drinking in the friendship group. Friendship group similarity in alcohol consumption appears to be driven by friend selection and influence, but influence is particularly important to high drinking friendship groups.

The findings of the present study also offer a demonstration of how group level interactions can be included in the SIENA framework and how one might illustrate the effect of these group level interactions. Using intraclass correlations to follow-up significant main effects and group level interactions in SIENA offers many advantages. Primarily follow-up analyses allow researchers to consider how processes vary among specific individuals and groups of individuals in the peer network. Until quantitative follow-ups can be developed within SIENA, illustrations of this kind are needed for moderator analyses to move forward.