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## Alcohol Motivations and Behaviors During Months Young Adults Experience Social Role Transitions: Micro-Transitions in Early Adulthood

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### Abstract

**Objective**—The study examines how young adult transitions into and out of social roles (i.e., starting or ending a job, school, a romantic relationship) are associated with drinking motives (coping, enhancement, social, and conformity) and alcohol use on a given month.

**Method**—A community sample of young adult drinkers (N=767; 56.3% female; 59.3% White; ages 18–23) completed 24 consecutive months of online surveys (N=15,333 months of data) about the previous month's experiences, social role transitions, and alcohol use.

**Results**—During the 2-year data collection window, participants reported starting/ending a job (10.0%/8.2%), a relationship (2.7%/4.3%), and school (9.2%/17.4%). Between-persons, those who more often started jobs were more likely to drink and those who more often ended jobs had higher enhancement motives; those who more often ended relationships were more likely to drink, have a

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greater number of drinks when drinking, and have higher coping and enhancement motives; and those who more often started relationships had higher conformity motives. Within-persons, in months when a relationship ended participants reported stronger coping motives and in months when a relationship started they reported stronger social motives for drinking. In months when a relationship started or ended, participants also reported consuming a greater number of drinks when drinking. There were no differences based on starting or ending school.

**Conclusions**—Young adult social role transitions are associated with concurrent changes in both alcohol use and motives for drinking. Understanding these contextual changes and their concomitant risks is key to providing salient interventions to reduce alcohol-related harm.

### Keywords

young adulthood; social roles; alcohol; motivations

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### Introduction

Across the life course, alcohol use reaches its peak for most individuals during young adulthood, and use at this time is associated with acute negative consequences and potential longer-term effects. Excessive alcohol use is the third leading cause of preventable death with 88,000 deaths each year, including 4,300 deaths among those under age 21 (Centers for Disease Control and Prevention, 2013). Excessive alcohol use cost the US \$249 billion in 2010 with \$24 billion related to underage drinking and \$191 billion related to heavy-episodic drinking (Sacks, Gonzales, Bouchery, Tomedi, & Brewer, 2015). As such, it is important to consider the contributing factors among young adults, especially in relation to high-risk alcohol use.

One of the most proximal predictors of alcohol use is an individual's motivations for drinking (e.g., Cooper, Frone, Russell, & Mudar, 1995; Cooper, 1994). However, very little is known about how motivations for drinking vary within an individual over time. Age-related changes in self-reported reasons for drinking have been documented using national data on young adults (Patrick, Evans-Polce, Kloska, Maggs, & Lanza, 2017; Patrick, Schulenberg, O'Malley, et al., 2011; Patrick & Schulenberg, 2011), and changes in these reasons are correlated with changes in binge drinking (Patrick & Schulenberg, 2011) and high-intensity drinking (Patrick et al., 2017).

During young adulthood, alcohol use is also associated with changes in social roles (e.g., Bachman et al., 2002). While there are documented within- and between-persons associations between social roles and alcohol over time, few studies have moved beyond the inclusion of static indicators of social role status at a given point in time. Therefore, little is known about the movement into and out of social roles and the within- and between-person associations with alcohol motives and alcohol use.

### Social Roles and Young Adult Alcohol Use

The majority of research on social roles and alcohol use has focused on static indicators of attainment, such as being in college, being employed, or being married. However, in reality young adults move into and out of social roles relatively frequently, and these transitions

may be associated with alcohol use. For example, the transition to college is a high-risk time (Scott-Sheldon, Carey, Elliott, Garey, & Carey, 2014). College students increase alcohol use more than their peers who do not go to college (Patrick, Terry-McElrath, Kloska, & Schulenberg, 2016; Schulenberg & Patrick, 2012). The first weeks of college are particularly associated with heavy drinking (Riordan, Scarf, & Conner, 2015), and students who drink heavily prior to college are likely to escalate drinking as they transition into college (Auerbach & Collins, 2006). The majority of young adults go on to postsecondary education, with 70% of high school graduates enrolling in college the following fall (NCES, 2018a). Research has not as frequently examined the transition out of college, although only 59% of students who enroll in bachelor's degree programs complete a degree within 6 years (NCES, 2018b).

Similarly, young adult employment is often unstable with frequent job changes (US Department of Labor, 2018). These changes have not been examined with repeated measures of short-term experiences over time. Available evidence suggests that employment and transitions to employment may increase the frequency and quantity of drinking (Christie-Mizell & Peralta, 2009; Gibb, Fergusson, & Horwood, 2012), but evidence is mixed (McMorris & Uggen, 2000).

Finally, romantic relationships among young adults are often diverse and unstable (Cohen, Kasen, Chen, Hartmark, & Gordon, 2003; Foxman, Newman, Percha, Holmes, & Aral, 2006), resulting in a variety of romantic relationship status changes. Although a wealth of literature has shown that marriage is associated with reductions in drinking (e.g., Bachman et al., 2002; Lee, Chassin, & MacKinnon, 2015; Leonard & Rothbard, 1999) and that single young adults tend to drink more than married young adults (e.g., Staff et al., 2010), this research has generally categorized all non-married individuals as single. In reality, many non-married young adults are in casual, committed, or cohabiting relationships. Generally, the associations between alcohol use and transitions into and out of these non-marital relationships have not been adequately examined. However, Fleming and colleagues (2018; 2010) have found that starting romantic relationships was associated with decreased heavy drinking and ending romantic relationships was associated with increased heavy drinking.

### **Motivations for Drinking**

Motivational models of alcohol use assert that the reasons an individual drinks, also described as the functions alcohol use serves, distinguish between different patterns of alcohol use and problems. Four main types of motivations for drinking have been identified: social (to obtain social rewards), enhancement (to enhance positive affect), conformity (to avoid social rejection), and coping (to cope with negative emotions) (Cooper, 1994; Cox & Klinger, 1988). Drinking for different motives is associated with different patterns of alcohol use (Cooper, Russell, Skinner, & Windle, 1992; Cooper, 1994). Drinking for social reasons is most common and generally not as strongly related to negative consequences and problems; drinking for enhancement reasons such as to get drunk is associated with consuming greater quantities of alcohol; and drinking for conformity reasons is associated with lower levels of alcohol use (Cooper et al., 1995; Cox & Klinger, 1988; Kuntsche, Knibbe, Gmel, & Engels, 2005; Labrie, Hummer, & Pedersen, 2007; Martens et al., 2008;

Neighbors et al., 2007; Patrick, Schulenberg, O'Malley, Johnston, & Bachman, 2011). Consistent with self-medication hypotheses of alcohol use (Colder, 2001), drinking to cope or manage negative emotions is associated with alcohol problems (Bray, Dziak, Patrick, & Lanza, in press; Cox & Klinger, 1988; Patrick, Schulenberg, O'Malley, et al., 2011). Although drinking motives have been found to be proximal predictors of alcohol use and consequences, they have only broadly been incorporated into developmental models of alcohol use and limited research has empirically evaluated these constructs within larger developmental models. This is true despite the long-term associations between drinking motives and substance use and problems in adulthood (Patrick, Schulenberg, O'Malley, et al., 2011) and noted developmental changes in motivations across young adulthood (Patrick et al., 2017; Patrick, Schulenberg, O'Malley, et al., 2011; Patrick & Schulenberg, 2011). It is likely that motivations to drink change in response to social role transitions. For example, some role changes might be perceived as stressful (e.g., break up of a relationship), require new patterns of socialization (e.g., end of school), or lead to an individual feeling overloaded with new responsibilities (e.g., starting a new job; role strain theory, Goode, 1960) and thus motivations to drink may reflect greater coping during those times. Alternatively, role changes may represent opportunities for new social relationships and social drinking (e.g., starting college, new romantic relationships; transitions catalyst model, Schulenberg & Maggs, 2002) and celebrations (e.g., ending school) so that social or conformity (to fit in) motivations would increase in response. Research has not examined how social role changes experienced during a specific month are associated with concurrent changes in motivations to drink.

Motivations for drinking are recognized as changing in concert with alcohol use across development (Patrick et al., 2017; Patrick & Schulenberg, 2011) and as predictors of drinking across years (Bray et al., in press; Patrick, Schulenberg, O'Malley, et al., 2011). A related literature using daily level data collection has documented that some types of motivations change within persons across days (e.g., Arbeau, Kuiken, & Wild, 2011; Ehrenberg, et al., 2016; O'Hara, Armeli, & Tennen, 2014; O'Hara, Armeli, & Tennen, 2015) and these fluctuations are associated with changes in drinking. Further, fluctuations in drinking motives have been associated with depressive symptoms (Kenny, Merrill, & Barnett, 2017), affect (Ehrenberg, et al., 2016), and certain personality traits, such as conformity drinking motives and impulsivity with coping motives and hopelessness (MacKinnon et al., 2014). However, motivations for drinking have not been consistently integrated with developmental models of alcohol use. As a result, it is not known whether changes in social roles are associated with changes in motivations for use as well as changes in alcohol use behavior.

### **Moving into and out of Social Roles and Motivations for Drinking**

The majority of research on social roles and alcohol use has relied on cross-sectional designs or longitudinal studies with gaps of a year or more between measurements. These types of studies cannot capture the dynamic nature of the social role transitions and the variability surrounding the changes of social roles, including how motivations for drinking change in concert with changes in social roles. In particular, traditional longitudinal designs with long gaps between assessments cannot measure how beginning and ending certain social roles—

including school, jobs, and relationships—is associated with motivations for drinking and with alcohol use. Therefore, the within-person variation in motivations for drinking and in alcohol use that is associated with the experience of entering or leaving an education, employment, or romantic relationship situation is unknown. The current study uses monthly data collection from young adults across 24 consecutive months, with information about young adults' movement into and out of social roles, motivations for drinking, and alcohol use.

This study is designed to address research gaps concerning how transitions co-occur with changes in drinking by examining transitions into and out of social roles. Repeated measures data allow examination of within-person and between-person differences across months and how social role transitions are associated with alcohol use and motives. Research aims were to examine how monthly changes in social roles of starting or ending a job, school, and a romantic relationship were associated with (1) four types of motivations for drinking (i.e., coping, enhancement, social, and conformity) and (2) any drinking and maximum number of drinks in a given month.

## Method

### Participants and Procedures

Participants ( $N=767$ ) were young adults recruited from the community for a longitudinal study on social role transitions and health behaviors. Inclusion criteria included being between the ages of 18 to 23 years of age at screening, having reported drinking at least one alcoholic beverage in the past year, living within 60 miles from the study office, and being willing to come to the study office for consent and completion of a baseline assessment. In this study sample, 56.3% were women and participants had a mean age of 20.6 years ( $SD = 1.7$ ). Self-reported racial identifications were 59.3% White, 18.0% Asian, 4.8% Black, and 17.9% other (including Native American, Pacific Islander, and multiracial); 8.3% participants identified as Hispanic/Latino. At the beginning of the study, 74.4% were current students, 60.6% were employed and 41.6% were in romantic relationships.

### Procedures

The University's Institutional Review Board approved all procedures and a federal Certificate of Confidentiality was obtained. Young adults in the local Seattle metropolitan area were recruited via print, online, and social media advertisements, posted flyers, outreach at community colleges, and friend referral. Those interested were asked to go to our study websites or call the study office for more information and then to complete a brief confidential online eligibility survey. If a potential participant met all eligibility criteria, he or she was invited to schedule an in-person session (lasting 1 ½ to 2 hours) in the research team's local office, where identity and age were verified with a current driver's license or other photo identification, informed consent procedures were followed, study design and incentive structure were explained, and any questions answered. Participants also completed an online baseline assessment, which included questions on demographic, alcohol use, and other measures; participants were paid a \$40 [Amazon.com](https://www.amazon.com) gift card upon baseline completion. Participants then completed 24 consecutive months of online surveys beginning

the first of the month following their in-person session. Each monthly survey period was open 7–10 days with participants receiving email, text message, telephone, and Facebook reminders to complete the surveys.

The online monthly surveys asked about the previous month's experiences, social role transitions, and alcohol use. Surveys took 30 to 35 minutes to complete with surveys at the six-month time points longer (40–60 minutes) and remuneration was greater. Gift card codes were provided as compensation for each completed survey (up to \$770 total).

Of the 778 participants who began the monthly survey assessments, 11 were excluded from analyses because they were missing data on race/ethnicity at baseline or relevant time-varying variables (e.g., peak number of drinks at drinking occasion, alcohol motives) at all available monthly assessments. Thus, a total of 767 (98.6%) participants were included in this analysis. For these analyses, we used 24 months of monthly surveys with a total of 15,333 (83.3% of total possible) monthly assessments (mean number of surveys per participant = 20.0).

## Measures

**Background characteristics**—Age, race/ethnicity, and biological sex were assessed through self-report during the baseline assessment.

**Social Role Transitions**—In the online monthly assessment, participants' status and social role transitions were assessed across various domains including education, work, and relationship status. Each month participants were asked about their status (e.g., "*Tell us about your relationship situation in the past month*") and could choose one or more statuses to reflect their previous month's situation. The number of statuses varied depending on the domain and ranged from seven to fourteen. Examples of statuses are "dating seriously," "working part-time," and "not a student."

The social role transitions were designed to capture the smaller micro-level changes that occur in young adults' lives more frequently than larger macro-changes. Participants were asked to reflect on the previous month's changes in each domain (e.g., "*Please indicate whether or not any of these changes in your relationship situation have occurred in the past month*") and could choose one or more transitions, including an option to indicate that no changes had occurred. The number of social role transitions participants could choose from ranged from eight to sixteen depending on the domain.

Reports of micro-transitions were used to define the monthly role changes for analyses in this study: ended or started a job, ended or started a relationship, and ended or started school. Ending a job was assigned if the participant indicated one of the following changes: "fired or laid off," "quit," "went on leave," or "temporary/contract work expired." Starting a job was based on a single variable indicating whether or not the participant "started a new job." Participants who responded positively to "relationship ended, became single," "decided to separate or be on a break," or "became separated/divorced" were considered to have ended a relationship. Starting a relationship was based on a positive response to a single item: "started new relationship." Participants were considered to have ended school if they

reported “left, dropped out, kicked out of school,” “in school but currently on temporary leave,” “in school but currently on summer break,” or “graduated/received GED,” Starting school was defined by indicating “in school, classes started again after temporary leave or break,” “started new school (previously NOT in school),” or “changed schools.”

**Peak alcohol consumption**—Participants’ previous month’s peak drinking was measured monthly to assess the maximum number of drinks consumed at a given time, which is one measure of risk for acute alcohol-related consequences. Participants were asked to think of the occasion on which they had drunk the most alcohol in the past month with response options ranging from “0 drinks” to “25 drinks or more” (Marlatt, Baer, & Larimer, 1995).

**Drinking motives**—Participants’ drinking motives in the previous month were assessed with the 28-item Modified Drinking Motives Questionnaire-Revised (Modified DMQ-R; Grant, Stewart, O’Connor, Blackwell, & Conrod, 2007), adapted for young adults from the original DMQ (Cooper et al., 1992) and the DMQ-R (Cooper, 1994). The Modified DMQ-R measures drinking motives, (e.g. “as a way to celebrate,” “to relax,” and “to be liked”) and is rated on a 1 (*Almost never/Never*) to 5 (*Almost always/Always*) scale. The measure was adapted from global drinking motives in the original Modified DMQ-R to ask instead about motives for drinking in the previous month, e.g., “How often would you say that you drank in the past month for each of the following reasons?” Items were averaged for each of the sub scales with higher scores indicating a higher reason to drink. The Modified DMQ-R includes five subscales – social, coping-anxiety, coping-depression, enhancement, and conformity. For data analysis, we collapsed the two coping subscales into one subscale.

## Data Analysis

To account for the nesting of up to 24 monthly assessments within individuals, multilevel models were used to examine the associations of role status changes in a given month with motives for alcohol use and the peak number of drinks consumed on a given occasion that same month. A random intercept that was allowed to vary across individuals was specified. The four different alcohol motive outcomes (social, coping, enhancement, and conformity) were treated as continuous variables and were analyzed in separate models. The peak drinking variable was a discrete non-negative integer showing a positive skew and excess zeroes. Thus, a hurdle form of the multilevel model was run that analyzed two separate aspects of the outcome: 1) the likelihood of any vs. no drinking using a logit model, and 2) the non-zero count of drinks using a truncated Poisson model. For the count portion of the model, coefficients are typically exponentiated to yield a Rate Ratio (RR) that describes the proportional change in the number of drinks associated with a 1-unit increase in the covariate.

To disentangle within- and between-person effects of the role transition, we included two variables together in the model: a time-varying (level 1) covariate for whether or not the transition occurred that month (e.g., started a job), and a time-fixed (level 2) covariate for the average number of times per month that a corresponding transition occurred across the study period (e.g., the total number of times the participant started a job divided by the total

number of monthly assessments that participant completed) (Curran & Bauer, 2011). Additional covariates in the model included sex (0: male, 1: female), race/ethnicity (White, Asian, Other), baseline age, and study assessment number (0 to 23) as a continuous variable. Each of the six role transitions of interest was examined in separate models. For tests of statistical significance, we used a Benjamini-Hochberg adjusted p-value that accounted for the six models per each outcome.

Multilevel models should provide unbiased estimates in the presence of missing data assuming data are missing at random (MAR); that is, missingness is not due to unmeasured variables (Atkins, 2005). Although this assumption is untestable, we did observe that missingness for the peak drinks outcomes was not significantly associated with number of peak drinks at the month prior and after, which would be consistent with MAR. All models were conducted using the “lme4” package (Bates et al, 2014) in R statistical software (R Core Team, 2015).

## Results

### Descriptive Information

Table 1 shows the distribution of the role transitions (i.e., starting or ending school, a job, or a romantic relationship), the four types of motivations for drinking, and peak drinking across the 24 months. The least common role transition was starting a new relationship (2.7%) and the most common was ending school (17.4%). With regard to motives for alcohol use, social and enhancement were the most common followed by coping and conformity. Motives for drinking showed variability within persons across months, with ICCs ranging from 0.46 to 0.63. At most monthly observations (78%), drinking was reported in the past month with 11% reporting drinking once a month, 20% 2 to 3 days per month, and 47% weekly; participants drank an average of 4.7 ( $SD = 7.4$ ) drinks in a typical week. Across months, 20% reported heavy episodic drinking in the past month, with 10% engaging in heavy episodic drinking once a month, 5% 2 to 3 days per month, and 5% at least weekly. The number of drinks consumed at the peak drinking occasion was fairly high ( $M = 5.7$ ,  $SD = 4.1$ ). Correlations among the different alcohol use motives across all months were statistically significant ( $p < .01$ ) and ranged between 0.22 for the correlation between enhancement and conformity motives and 0.51 for the correlation between social and enhancement motives.

**Role Transitions and Motivations**—To examine Aim 1, we modeled associations between role transitions and motives for alcohol use. Table 2 shows the adjusted parameter estimates for associations of the within-person (level 1) and between-person (level 2) versions of the role transition variables with each of the four alcohol motives (social, coping, enhancement, conformity). For months when individuals started a new relationship (compared to all other months), social drinking motives were higher. No other statistically significant associations with social motives were observed. Coping motives were higher for months when individuals ended a relationship, compared to all other months. Further, we observed a between-person association such that the average number of times participants ended a relationship across the study assessments was associated with higher coping



motives. For enhancement motives, no within-person associations were observed, but there were between-person associations such that individuals reporting ending a job or ending a relationship more frequently over the course of the study showed higher enhancement motives. Finally, for conformity motives, there were no within-person associations, but individuals who reported ending or starting a relationship more frequently across the 24 months had higher levels of conformity motives.

**Role Transitions and Maximum Number of Drinks**—To address Aim 2, we examined associations between role transitions and past month peak number of drinks consumed (Table 3). For the logit part of the hurdle model, we did not observe any statistically significant associations between within-person versions of the role transitions and any vs. no drinking. However, we observed statistically significant associations with between-person versions of certain role transitions. Individuals who reported more occurrences of starting a job and ending a relationship over the course of the study were more likely to report drinking in any given month. When examining the count portion of the hurdle model, we found within-person associations showing that a greater number of drinks on the peak drinking occasion was consumed both in months when individuals ended a relationship and in months when individuals started a relationship. We also observed a between-person association indicating that individuals who reported ending a relationship more frequently over the course of the study tended to consume a greater number of drinks on the peak drinking occasion.

## Discussion

A fundamental tenet of any developmental perspective on alcohol use is that developmentally related changes are associated with changes in alcohol use (Schulenberg, Maslowsky, & Jager, 2018). The global transition to adulthood is composed of several smaller social role transitions in multiple domains concerning, in particular, relationships, education, and work. These social role transitions have been investigated, with some support for the transitions overload model (Schulenberg & Maggs, 2002) that experiencing multiple transitions simultaneously is associated with changes in substance use (e.g., Bachman et al., 2002; Fromme et al., 2008; Kuntsche et al., 2016). However, a near ubiquitous limitation of this empirical literature is the reliance on a cross-sectional or longer-term longitudinal design, neither of which is well suited to examining the more dynamic aspects of social role transitions. The present study was designed to address this gap by examining monthly changes concerning starting and ending relationships, education, and work and their associations with alcohol use and drinking motivations.

We found that more drinks were consumed (on the peak drinking occasion) during months when individuals started or ended a romantic relationship. More telling, we found that social drinking motives were higher in months when new romantic relationships began and coping drinking motives were higher in months when romantic relationships ended. These results are consistent with the conceptual and theoretical models of motivations for drinking (Cooper, 1994; Cox & Klinger, 1988), but these within-person associations of real-time experiences of social role transitions and their associations with fluctuations in drinking motives have not been previously documented. Our results suggest that month-to-month

relationship role transitions are salient for changes in drinking motives and behavior. There were also between-person differences based on relationship transitions: young adults who more often ended relationships across the study period were more likely to drink, to have a greater number of drinks when drinking, and to have higher coping and enhancement motives; and those who more often started relationships across the study period had higher conformity motives. In other words, people who had more relationship transitions had different motives for drinking overall across all months, in addition to the within-month fluctuations experienced when the transitions occurred. The effect sizes were generally small. However, the findings for starting or ending relationships are consistent with prior work demonstrating that a partner's drinking habits can influence another partner's drinking patterns (e.g., Holway et al., 2016; Kehayes et al., 2017; Merline et al., 2008; Polenick et al., 2018). For example, Kehayes et al. (2017) found young adult partners' drinking patterns (frequency, quantity, and heavy episodic drinking) were similar, with greater similarity among those who spent more time spent together. Interventions may be needed to address stress and provide support for coping skills in anticipation of dating transitions, as well as challenge expectations of beneficial social, enhancement, and coping outcomes of heavier alcohol consumption.

For employment transitions, there were only between-person differences. Across the study period, young adults who more often started jobs were more likely to drink and those who more often ended jobs had higher enhancement motives for drinking. On months of starting or ending jobs, there were no fluctuations for a person's own average levels of drinking motives or behavior. Therefore, differences likely reflect characteristics that differ from one person to another, such as those who are impulsive or thrive on change and therefore seek frequent job changes, or those who are unreliable or poor workers and therefore lose jobs often.

For school transitions, there were no differences either between-person or within-person. Although starting college is associated with increases in drinking (Patrick et al., 2016; Schulenberg & Patrick, 2012; Scott-Sheldon et al., 2014), that research is focused on a single transition point of entering college (usually defined as full-time, four-year college) for the first time. The findings from the current study are capturing normative starts and stops to school and, in aggregate, there are no differences in alcohol use for the months in which those micro-transitions occur.

Strengths of this study include the use of a relatively large and heterogeneous community sample of young adults followed monthly across 24 months. In contrast to typical cross-sectional or long-term longitudinal studies examining the association of social role transitions and substance use, this study includes monthly multi-wave data, which permits consideration of the dynamic micro-transitions that make up the longer-term social role transitions. Limitations are also noted, including reliance on a community sample in a single metropolitan area, heterogeneity in what the self-reported role transitions mean (e.g., ending a school year vs. college drop-out), and reliance on self-reported transitions and alcohol use. Future research could further distinguish specific types of micro-transitions (e.g., that reflect why a job ended), and well as examine the number of total transitions experienced in a month.

In conclusion, this study shows that monthly rises and falls in alcohol use as well as drinking motives are sensitive to moving in and out of social roles, in particular romantic relationships and employment, during the transition to adulthood. Future research and intervention efforts should build on this knowledge of the ways in which contextual changes in social roles for a given individual are associated with short-term changes in drinking motives and alcohol use behavior. Salient intervention for these individuals should address these contextual shifts and include protective strategies for reducing harm as young adults navigate changing roles in real time.

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**Table 1.**

Distributions of role transitions, alcohol motives, and peak drinking across monthly observations

<b>Covariate</b>	<b>% or Mean (SD)</b>
Role transition	
Started a job	9.95
Ended a job	8.16
Started a relationship	2.67
Ended a relationship	4.32
Started school	9.17
Ended school	17.38
Alcohol use motives	
Social	2.36 (0.96)
Coping	1.45 (0.60)
Enhancement	2.41 (1.05)
Conformity	1.19 (0.49)
Past month peak drinking	
Any drinking	77.84
Number of non-zero drinks	5.70 (4.11)

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**Table 2.** Adjusted<sup>a</sup> coefficients from separate linear mixed effects models for role transitions predicting alcohol motives<sup>b</sup>

Role transition	Social		Coping		Enhancement		Conformity	
	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE
Started a job								
Level 1: That month	0.013	0.021	-0.024	0.013	-0.008	0.020	-0.002	0.010
Level 2: Total across months	-0.016	0.023	0.008	0.016	0.060	0.028	0.006	0.013
Ended a job								
Level 1: That month	0.020	0.024	-0.003	0.014	-0.009	0.022	-0.001	0.011
Level 2: Total across months	0.031	0.023	0.025	0.016	<b>0.071*</b>	<b>0.028</b>	0.026	0.012
Started relationship								
Level 1: That month	<b>0.128**</b>	<b>0.040</b>	-0.011	0.024	0.088	0.037	-0.007	0.019
Level 2: Total across months	0.021	0.023	0.036	0.016	0.024	0.028	<b>0.045**</b>	<b>0.012</b>
Ended relationship								
Level 1: That month	0.028	0.031	<b>0.183*</b>	<b>0.018**</b>	0.038	0.029	-0.007	0.015
Level 2: Total across months	0.050	0.024	<b>0.061*</b>	<b>0.017**</b>	<b>0.089*</b>	<b>0.030</b>	<b>0.037*</b>	<b>0.013</b>
Started school								
Level 1: That month	-0.027	0.023	-0.011	0.013	-0.026	0.021	0.003	0.011
Level 2: Total across months	-0.005	0.024	-0.026	0.017	0.001	0.030	-0.004	0.013
Ended school								
Level 1: That month	-0.006	0.018	-0.019	0.011	-0.015	0.017	-0.010	0.009
Level 2: Total across months	-0.022	0.025	0.011	0.017	-0.001	0.031	-0.006	0.014

<sup>a</sup> Adjusted for sex, study month, race/ethnicity, baseline age

<sup>b</sup> Models included 12,330 observation among 760 participants

\* Benjamini-Hochberg (BH) adjusted p-value <.05

\*\* BH adjusted p-value <.01



Adjusted odds ratios for any drinking and adjusted rate ratios for count of peak number of drinks in the past month according to role transitions from separate hurdle mixed models.

**Table 3.**

Transition	Any drinking <sup>b</sup>		Number of drinks when drinking <sup>c</sup>	
	OR	95% CI	RR	95% CI
Started a job				
Level 1: That month	1.05	0.87, 1.26	0.99	0.97, 1.02
Level 2: Total across months	<b>1.37**</b>	<b>1.13, 1.66</b>	1.04	1.01, 1.09
Ended a job				
Level 1: That month	1.09	0.90, 1.33	1.01	0.98, 1.04
Level 2: Total across months	1.18	0.97, 1.43	1.04	0.99, 1.08
Started relationship				
Level 1: That month	1.45	1.01, 2.09	<b>1.09**</b>	<b>1.04, 1.14</b>
Level 2: Total across months	1.12	0.93, 1.36	1.02	0.98, 1.06
Ended relationship				
Level 1: That month	1.26	0.93, 1.70	<b>1.09**</b>	<b>1.05, 1.13</b>
Level 2: Total across months	<b>1.29*</b>	<b>1.07, 1.56</b>	<b>1.06*</b>	<b>1.02, 1.13</b>
Started school				
Level 1: That month	1.16	0.96, 1.40	1.02	1.00, 1.05
Level 2: Total across months	1.25	1.02, 1.40	0.97	0.93, 1.02
Ended school				
Level 1: That month	1.14	0.99, 1.32	1.00	0.98, 1.02
Level 2: Total across months	0.95	0.78, 1.14	0.98	0.93, 1.03

<sup>a</sup> Adjusted for sex, study month, race/ethnicity, baseline age, average number of transitions per month across 18 months

<sup>b</sup> Models included 15,333 observations among 767 participants

<sup>c</sup> Models included 11,935 observations among 752 participants

\* Benjamini-Hochberg (BH) adjusted p-value < .05

\*\* BH adjusted p-value < .01