Attitudinal Change and Contraceptive Use: Development of Shared Cultural Models of Fertility

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ABSTRACT

We use innovative methods to identify shared cultural models of fertility, and to examine how these models change during a critical period of early adulthood. Using the Relationship Dynamics and Social Life study, we use Latent Class Analysis to create groups with similar patterns of content of attitudes in multiple fertility-related domains. We then use Relational Class Analysis to create groups that share similar models of the relationships among attitudes, but may disagree about valence. By including multiple observations from each respondent, this study allows examination of change over time in shared models of fertility. We will describe the shared cultural models, then determine 1) to what extent individuals experience changes in cultural models during the study period, and 2) which transitions between models are most common. We will develop a typology of trajectories of group membership, and test whether trajectory type predicts subsequent contraceptive use.

Introduction

A growing demographic literature investigates the development of fertility intentions over time (Huinink & Kohli, 2014; Yeatman, Sennott, & Culpepper, 2013; Sennott & Yeatman, 2012; Kodzi, Casterline, & Aglobitse, 2010; Ní Bhrolcháin, Beaujouan, & Berrington, 2010; Hayford, 2009; Morgan, 2001). Some scholars have argued that fertility preferences are best conceptualized as an individual's process of "discovery rather than a goal" (Ní Bhrolcháin & Beaujouan, 2015, p. 23). Understanding fertility intentions is important for substantive reasons, as intentions are significant predictors of fertility behavior. Furthermore, studying changes in fertility intentions may give broader insights into how cultural and social environments shape attitudes and behavior. For example, learning what experiences or characteristics are associated with specific types of changes in attitudes may shed light on the causes of such changes. Trajectories of attitudes may also be more powerful predictors of behavior than measures from a single point in time. This approach also requires different methodological tools than are called for by analyses that treat intentions as stable traits.

Attitudes in a number of domains are known to be related to fertility intentions, including attitudes about motherhood (McQuillan, Greil, Shreffler, & Bedrous, 2014) and religion (Hayford & Morgan, 2008). To give a fuller understanding of changes in fertility intentions and behavior, changes in attitudes in related domains should be included as an object of study.

Other recent developments in demographic theory have highlighted the need for research to incorporate theories of how cognition interacts with life experiences to shape behavior. One of the implications of the insights of new models, including the cognitive-social model proposed by Bachrach and Morgan (2013) and the theory of conjunctural action (Johnson-Hanks et al. 2011), is the need to develop innovative methods in empirical research to test these theories.

Our study contributes to these two literatures by applying an innovative approach—one that we have recently used to identify shared cultural models of fertility in a sample of survey respondents—to longitudinal survey data. In recent work that analyzes fertility-related attitudes among a sample of young U.S. women, we have found that relational analysis of the content of attitudes (using latent class analysis) identifies four distinct clusters of respondents who share patterns of fertility-related attitudes (Shepherd and Marshall 2016). We have also

found that relational analysis of the structure of attitudes (using relational class analysis) identifies two main types of groups: women who share understandings of the relationships within and between fertility-related domains, and women whose understandings are not shared with others. Our analyses have shown that membership in these groups at study baseline is a significant predictor of contraceptive behavior over the subsequent 90 days.

The current study extends our earlier analyses to examine how shared cultural models change over time, using longitudinal data from a survey of young women during a critical period of young adulthood.

Data

We use data collected by the Relationship Dynamics and Social Life (RDSL) study. This population-representative random sample of 1,003 women ages 18 to 22 was drawn from residents of a county in Michigan, using the Michigan Department of State driver's license and Personal Identification Card database. Young women in this age range were selected because this is a period in which they make key decisions about education and family formation. Baseline data collection was completed in 2009. The target county is racially, ethnically and socioeconomically diverse.

A baseline face-to-face survey interview collected information on sociodemographic characteristics and attitudes, and relationship, contraceptive, and pregnancy histories. The data also include measures of contraceptive use, as well as related experiences, collected through a weekly journal spanning 2.5 years. Respondents completed a total of 57,602 journals: approximately 5-minute surveys on the internet or by phone, with 95% of interview respondents participating in the journal component. Eighty-four percent of respondents have data for at least 6 months, 79% for at least 12 months, and 75% for at least 18 months (Barber, Kusunoki, Gatny, & Yarger, 2013). The modal number of days between journals for a respondent is 8 and the mean percentage of missing questions in each journal is 3%.

Attitudinal Measures

We use attitudinal measures from the RDSL survey to conduct the LCA and RCA analyses. Attitudinal measures include respondents' evaluations of six dimensions related to childbearing: birth control, career and education, motherhood, attitudes about which kinds of relationships are appropriate for sex, cohabitation, and childbearing, attitudes about timing of

childbearing in general, and attitudes about timing of childbearing in their own lives. These measures include evaluations of prototypical women who participate in certain behaviors (e.g., "Women who carry a condom are cool"). We include two prototypes related to birth control and one prototype related to each of the following: pregnancy, attending college, and full-time work. After baseline, these items do not appear in every survey, but rather every 12 weekly journals. After three months, therefore, most respondents will have updated their responses to all of the items.

Behavioral Measure: Contraceptive Use

Our main dependent variable is a summary measure of contraceptive use across 90 days. In weekly journals, respondents who report having any type of partner, broadly defined, during the past week are asked whether they had sexual intercourse. Those who report intercourse are asked if they used contraception for each instance of intercourse that week. Consistent contraceptive use is defined as using contraception in every instance of intercourse that week. Previous analyses using this measure have found that for the first year of data, about 1/3 of respondents are always consistent over the course of a year, about 1/3 are sometimes consistent, about 1/10 are frequent non-users (in each week of study participation, they do not use contraception while having sex at least once), and about 1/4 are abstinent (Kusunoki et al. 2016). We use these four categories as a categorical dependent variable in our analyses. Any weeks where a respondent was pregnant or trying to get pregnant were excluded from the calculation of the measure, as were women who were married (N=17).

Family Background, Socioeconomic Status, and Demographic Characteristics

We use a variety of background and demographic measures to describe the groups we identify using LCA and RCA. Family background measures for respondents' childhood families include: mother's education and mother's number of children, as well as dichotomous measures of whether the family was headed by a single parent, whether respondent's mother first gave birth before age 20, whether respondent's mother worked during childhood, and whether the family owned their home. Socioeconomic measures include current receipt of public assistance (WIC, FIP, cash welfare, or food stamps) and whether the respondent owns a car. Demographic characteristics are race and religiousness.

Analytical Approach

Shared Cultural Models of Fertility: Content and Structure

We first use LCA and RCA to analyze the set of attitudinal measures to create categories of respondents, and describe the groups identified.

Latent Class Analysis. LCA identifies groups of respondents with others who share similar *content* of fertility-related attitudes be grouping respondents who share *similar patterns of responses* across variables, in this case similar views on fertility-related attitudes. This approach produces groups in which respondents generally agree with one another on the substance of the questions. Our previous analyses have found four groups, with the members of each group sharing a similar attitude pattern across the six dimensions. Table 1 summarizes the characteristics of these four groups.

Table 1. Summary of Results of Latent Class Analysis, 4 Groups

	Not-for-me's	**Planners**	**Meaningful Motherhood**	**Traditionalists**
Birth Control	Positive	Very positive	Very negative	Very Negative
Career /Education	High aspirations	Highest aspirations	Lower aspirations	Neutral (NS)
Motherhood	Very Negative	Neutral (NS)	Extremely positive	Positive
Sex regardless of relationship	Positive	Neutral (NS)-Negative	Positive	Very negative
Timing of childbearing-General	Neutral (NS)-Mixed	Older is fine/better	Younger is somewhat better	Younger is better
Timing of childbearing-Self	Very Negative	Negative, but could handle it	Now would be good	Negative, but could handle it
Size (N=984)	33.70%	14.87%	33.30%	18.13%

Relational Class Analysis. RCA groups respondents with others who share a similar *structure* of fertility-related attitudes by grouping respondents who share *similar patterns of relationships among responses* (Goldberg, 2011). RCA aggregates people who may not agree on the substance of the issues, but who agree on how beliefs are associated with one another. It does this by identifying subgroups of respondents who use similar principles to organize meaning.

In contrast to LCA, which provides the *content* of how groups of respondents think about the domain of fertility, RCA provides the *structure* of belief systems regarding fertility. Our previous analyses have found two main types of RCA group. The first is a cohesive group, in which group members share understandings of the relationships between fertility-related attitudes. The second is a divided group, in which there is no pattern of relationships among attitudes that represents a cultural model shared by respondents.

Longitudinal Analyses

For the analyses of attitudinal change over time, we will use quarterly measures of attitudinal data; the units of analysis are person-quarters. For LCA analyses, we will pool all person-quarter observations together, then conduct LCA on the set of observations, and use the resulting assignments to analytic groups to create a trajectory of LCA group membership over time for each respondent. For RCA, we will similarly conduct RCA on the set of person-quarter observations, and use the results to create a trajectory of RCA group membership over time for each respondent. (Conducting separate analyses for each time period would create different groups for each time period, making it difficult to interpret the meaning of changes in group membership. Our approach is appropriate for the relatively short study period of only 2.5 years.)

Our analysis of change over time will proceed with a simple count of how frequently transitions occur. We will then examine which types of transitions are most frequent. We will then use a subsequent LCA analysis to group respondents by type of trajectory, similar to the approach in Amato et al. (2008). Members of the trajectory groups identified by the LCA analysis of attitudes over time will share a similar trajectory of attitudinal structures with other group members. This approach will be used for trajectories of both LCA group memberships and RCA group memberships. Trajectories will be analyzed using LCA, rather than latent class growth analysis (LCGA), because group membership is a nominal categorical outcome, and LCGA is appropriate for analyses of ordinal or interval outcomes. Creating analytic groups of trajectories using LCA will allow us to characterize and compare typical trajectories of attitude change over time. The repeated measures available in the RDSL data are ideal for this kind of analysis.

Prediction of Contraceptive Use

We will model an important fertility behavior—consistency of contraceptive use—as a categorical outcome, using a multinomial logistic model. Our main explanatory models will use membership in a LCA trajectory group or in a joint LCA-RCA trajectory group to predict contraceptive use for the subsequent 90 days. Thus, trajectories based on an 18-month study period will be used to predict consistency of contraceptive during the three months following this period. We will compare these two models to a model that uses factor analysis of fertility-related attitudes, a conventional variable-based method, to predict contraceptive consistency.

Results

Analyses are ongoing; results are forthcoming.

References

Amato, P. R., Landale, N.S., Havasevich-Brooks, T.C., Booth, A., Eggebeen, D. J., Schoen, R., & McHale, S.M. (2008). Precursors of young women's family formation pathways. *Journal of Marriage and Family, 70*(5), 1271–1286.

Bachrach, C.A. & Morgan, S.P. (2013). A cognitive–social model of fertility intentions. *Population and Development Review, 39*(3), 459–485.

Barber, J.S., Kusunoki, Y., Gatny, H.H., & Yarger, J. (2013). Young women's relationships, contraception, and unintended pregnancy in the United States. In A. Buchanan & A. Rotkirch (Eds.), *Fertility rates and population decline: No time for children?* (pp. 121-140). Basingstoke, UK: Palgrave Macmillan.

Goldberg, A. (2011). Mapping shared understandings using relational class analysis: The case of the cultural omnivore reexamined. *American Journal of Sociology, 116*(5), 1397-1436.

Hayford, S.R. (2009). The evolution of fertility expectations over the life course. *Demography, 46*(4), 765–783.

Hayford, S.R. & Morgan, S.P. (2008). Religiosity and fertility in the United States: The role of fertility intentions. *Social Forces 86* (3): 1163-1188.

Hayford, S.R., Guzzo, K.B., Kusunoki, Y., & Barber, J.S. (2016). Perceived costs and benefits of early childbearing: New dimensions and predictive power. *Perspectives on Sexual and Reproductive Health 48* (2), 83-91.

Huinink, J. & Kohli, M. (2014). A life-course approach to fertility. *Demographic Research, 30*(45), 1293-1326.

Johnson-Hanks, J., Bachrach, C.A., Morgan, S.P., & Kohler, H.-P. (2011). *Understanding family change and variation: Toward a theory of conjunctural action*. New York, NY: Springer.

Kodzi, I.A, Casterline, J.B., & Aglobitse, P. (2010). The time dynamics of individual fertility preferences among rural Ghanaian women. *Studies in Family Planning, 41*(1), 45-54.

Kusunoki, Y., Barber, J.S., Ela, E.J., & Bucek, A. (2016). Black-white differences in sex and contraceptive use among young women. *Demography*. doi:10.1007/s13524-016-0507-5

McQuillan, J., Greil, A.L., Shreffler, K.M., & Bedrous, A.V. (2015). The importance of motherhood and fertility intentions among U.S. Women. *Sociological Perspectives, 58*(1), 20–35.

Morgan, S.P. (2001). *Should fertility intentions inform fertility forecasts? The direction of*

fertility in the United States. Washington, DC: U.S. Census Bureau.

Ní Bhrolcháin, M. & Beaujouan, É. (2015). How real are reproductive goals? Uncertainty and the construction of fertility preferences. ESRC Centre for Population Change, Working Paper 73.

Ní Bhrolcháin, M., Beaujouan, É. and Berrington, A. (2010). Stability and change in fertility intentions in Britain, 1991-2007. *Population Trends, 141*, 1-23.

Sennott, C. & Yeatman, S. 2012. Stability and change in fertility preferences among young women in Malawi. *International Perspectives on Sexual and Reproductive Health, 38*(1), 34-42.

Shepherd, H. & Marshall, E.A. (2016). Shared cultural logics and contraceptive use among young women: A behavioral approach to culture. Working paper.

Yeatman, S., Sennott, C. & Culpepper, S. (2013). Young Women's Dynamic Family Size Preferences in the Context of Transitioning Fertility. *Demography, 50*(5), 1715–1737.