

Effects of Gender, Education, Income, Social Rank, Financial Stress, and Shame on Beliefs About the Autonomy of One's Opinions and Their Expression

William Magee 

Department of Sociology, University of Toronto, Toronto, Canada

All correspondence concerning this article should be addressed to William Magee, Department of Sociology, University of Toronto, 700 University Avenue, 17th Floor, Toronto, ON M5G 1X6, Canada. E-mail: william.magee@utoronto.ca

Abstract

Individuals' beliefs about their opinion-related tendencies should interest public opinion researchers for at least two reasons. First, these beliefs could influence opinion-related behaviors. Second, they are likely to indicate tendencies that transcend specific situations and pertain to a wide range of subjects for which opinions can be held. This study investigates the associations of demographic characteristics, material and social resources, and subjective experiences with the belief that one tends to develop independent opinions (i.e., opinion autonomy) and expresses one's minority opinions (i.e., expressed autonomy). Effects are estimated through analyses of three waves of data collected from a sample of the U.S. adult population. Education, age, community rank, financial stress, and shame are revealed to have effects of similar magnitude on expressed autonomy and opinion autonomy. Gender is the only variable investigated associated with only one form of autonomy—expressed autonomy. The findings are interpreted through the lenses of identity and affect control theories. Processes related to maintaining authenticity, perceived self-worthiness, and confidence in oneself as an independent thinker and agent are theorized as underlying the results.

Associations of personal characteristics and resources with opinions and their expression are believed to reflect the effects of cognitive abilities and social skills on opinion development and the capacity for opinion expression (Berinsky, 2013). Effects of resources and personal characteristics on the development and expression of independent and minority opinions have particularly important implications because such beliefs reflect an evaluation of oneself as a moral agent (Blasi, 1983). Belief in one's moral agency, in turn, could influence opinions on a wide range of subjects and expressions within diverse contexts. Since the development and expression of minority opinions is a requisite for deliberative democracy (Gutmann & Thomson, 2004), the factors that influence beliefs about one's tendency to hold and express minority opinions should be of interest to public opinion researchers and other social scientists concerned with the functioning of democracies. However, the beliefs investigated here are relevant to both opinions about political issues and opinions in general.

This study investigates beliefs about one's tendency to form opinions that are independent of the opinions of others (i.e., opinion autonomy) and about one's tendency to express minority opinions (i.e., expressed autonomy). These beliefs jointly constitute psychological autonomy (Ryff & Keyes, 1995). Some previous research has investigated the associations of some of the variables considered in this study as predictors of psychological autonomy (Ryff, Magee, Kling, & Wing, 1999; Magee, 2006). Other studies have focused on associations with outcomes related to opinion expression (Berinsky, 2013, p. 11), such as “willingness to self-sensor,”

which is a phenomenon of central concern in a spiral of silence theory (Noelle-Neumann, 1993). However, the possibility that the effects of personal characteristics and resources on opinion autonomy could differ from the effects on expressed autonomy has not been previously investigated.

Identity control theory (Stets & Burke, 2005) suggests reasons for expecting some personal characteristics and resources to have different effects on opinion and expressed autonomy. Identity control theory posits that the process of reflected appraisal can shape actions (e.g., voicing opinions) and self-related beliefs through iterative feedback and control processes. Since opinion expressions are necessarily more visible than the processes that underlie opinion formation, opinion expression is likely to be subject to more social feedback and control than is opinion formation. This could result in stronger effects of variables that are associated with susceptibility to social control on expressed autonomy than on opinion autonomy. Below, I outline expectations about the effects of seven variables—age, sex, education, individual income, rank within one's community, financial stress, and feelings of shame—on each form of psychological autonomy. Effects are estimated with data collected from U.S. residents interviewed three times over approximately eighteen years.

Previous Research and Relevant Theory

Gender

Although men and women seem to value self-direction similarly (Schwartz & Rubel-Lifschitz, 2009), women have been

found to be more likely than men to respond ‘don’t know’ to opinion questions on surveys (Laurison, 2015; Goenaga & Hansen, 2022). This gender difference has been interpreted as reflecting how gender role socialization influences political knowledge, perceptions of entitlement to voice one’s opinions, and confidence in one’s understanding of political issues (Hansen & Goenaga, 2023). These differences are consistent with research which shows that socialization experiences that influence interpersonal behavioral orientations, and identities (Reitzes & Mutran, 2002), are structured by gender (Hannover, Pöhlmann, Springer, & Roeder, 2005), resulting in a tendency for women to be more strongly oriented toward interdependence in interpersonal behaviors than men. Identity control theory integrates these findings and explanations and provides a basis for the hypothesis that men will endorse beliefs indicative of expressed autonomy more than women. If socialization linked to gendered roles and identities extends to the propensity to develop knowledge that supports confidence in one’s political opinions (Hansen & Goenaga, 2023), and confidence influences tendencies related to opinion formation as well as expression, then a gender difference in opinion autonomy should also be observed. However, the ability to keep one’s opinions private could result in a weaker connection of gender to opinion autonomy than expressed autonomy. Consistent with that possibility, a previous study that assessed only opinion autonomy (Kaplan, Shema, & Leite, 2008) reported no gender difference, while another study that investigated psychological autonomy as a single outcome, incorporating both opinion and expressed autonomy (Magee, 2006), found men to report greater psychological autonomy than women.

Age

Previous studies have produced inconsistent evidence of an association of age with outcomes that reflect opinion or expressed autonomy. In a study by Kaplan et al. (2008), the association of age with opinion autonomy was not statistically significant or substantively large. A meta-analysis of research motivated by the spiral of silence theory (Matthes, Knoll, & von Sikorski, 2018) found the relationship between perceptions of opinion support and political opinion expression did not vary by the average age of study samples. In contrast, studies of “don’t know” responses to opinion questions on surveys have observed effects consistent with age effects on expressed autonomy. However, the pattern of effects observed in those studies has been inconsistent. Laurison (2015) found “don’t know” responses to either increase with age or be unrelated to age, depending on topic (see appendices to his paper). In contrast, Hansen & Goenaga (2023) found substantive responses (i.e., the opposite of “don’t know” responses) to either increase with age or be unrelated to age, depending on the topic. Given the inconsistency among these results there is no clear basis for expecting age to be associated with an opinion or expressed autonomy. However, age is included in the analyses as a baseline control variable, and to further explore its association with each aspect of psychological autonomy.

Education

Studies have consistently found education to be negatively associated with willingness to self-censor (Lasorsa, 1991; Noelle-Neumann, 1993) and positively associated with the propensity to report one’s political opinions on surveys (Berinsky, 2013; Laurison, 2015). A positive association

of psychological autonomy with education has also been observed in previous studies (Ryff et al., 1999; Navarro-Carrillo, Alonso-Ferres, Moya, & Valor-Segura, 2020). Thus, there are empirical bases for hypothesizing a positive effect of education on both aspects of psychological autonomy.

Identity control theory suggests that opinion and expressed autonomy should be associated with education to the extent that formal education promotes values and beliefs associated with individualism, including the belief that one is an independent thinker and expressive actor. Cross-national studies (Weakliem, 2002; Kalmijn & Kraaykamp, 2007; Santos, Varnum, & Grossmann, 2017) have found the national mean level of education to be positively associated with individualistic attitudes and values. Similarly, theory and research on socialization (Park & Lau, 2016) support the idea that both aspects of autonomy might be socialized through processes that link education to individualistic values, which could, in turn, influence self-beliefs. Thus, if broadly held values and attitudes are internalized and translated into self-related beliefs, education should influence both forms of autonomy investigated here.

Income

People with higher incomes tend to be more likely than those with lower incomes to answer questions about political issues on surveys and polls (Berinsky, 2013; Laurison, 2015). Laurison (2015) argued that this can be explained by the effect of income on “... the sense that one is a legitimate producer of political opinions” (p. 925). This explanation is broadly consistent with the idea that identity processes are central to income effects on self-related beliefs associated with opinion and expressed autonomy since “opinion production” encompasses both opinion formation and expression.

However, research suggests that even if an income effect on perceived political legitimacy translates to belief in one’s political autonomy, income might not be associated with the tendency to express opinions outside the political realm. Research on the association between income and “willingness to self-censor” (WTSC) (Noelle-Neumann, 1993) has been equivocal.¹ Of four studies that have investigated the association between WTSC and income, two report a negative association (Noelle-Neumann, 1993; Scheufele & Eveland, 2001), and two report no association (Dalisy, Hmielowski, Kushin, & Yamamoto, 2012; Kim, 2012). Findings from research on psychological autonomy (Ryff & Keyes, 1995) have also been inconsistent. A study of opinion autonomy (Kaplan et al., 2008) observed no association with income. However, a study of psychological autonomy in general (Navarro-Carrillo et al., 2020), conducted with a convenience (i.e., snowball) sampling procedure, observed a positive association.

Community Rank

Since low-income people can occupy high community rank, community rank does not necessarily mirror income. No previous research has investigated the association of any outcome related to opinion or expressed autonomy with perceived community rank. An effect of community rank on beliefs relevant to autonomy is suggested by research that

¹ WTSC is typically studied by asking people if they are willing to speak about specific topics in a specified context (Kim, 2012). However, some WTSC studies have utilized situation-independent measures (Matthes et al., 2012) that resemble measures of psychological autonomy (Ryff & Keyes, 1995).

indicates that people perceived to have higher status are also perceived to be more assertive and independent than those of lower status (Louvet, Cambon, Milhabet, & Rohmer, 2019; Ridgeway, 2019). Studies motivated by status characteristics and expectation state theory (Ridgeway, 2019) have found that people who possess characteristics indicative of higher status and prestige tend to be granted voice and leadership in small task-oriented groups more than those with less valued or devalued characteristics. That finding suggests an effect of rank on expressed autonomy but does not have clear implications for the relation between rank and opinion autonomy. However, since rank is associated with the occupancy of leadership positions, and leadership often requires a capacity to develop autonomous opinions and express such opinions (Bass & Riggio, 2006), there are reasons to expect opinion autonomy will also increase with rank. Yet the connection of rank with feedback and control over opinion expressions is clearer than the connection of rank to opinion development. Thus, it seems likely that the association of rank with expressed autonomy will be stronger than its association with opinion autonomy.

Financial Stress

No previous research has investigated the association of financial stress with either expressed or opinion autonomy. There are reasons, though, to expect that financial stress could undermine expressed autonomy through several routes. One potential route is through deficits in time and energy necessary to accrue the knowledge that supports autonomous opinions (Jungkunz & Marx, 2021). Accrual of knowledge and support for one's opinion will likely bolster internal efficacy (Hansen & Goenaga, 2023), or confidence based on the belief that one has arrived at one's opinions through the exercise of deliberative autonomy. Another potential connection of financial stress to expressed autonomy is through indebtedness, limiting the tendency to express minority opinions that might offend those to whom one is indebted. If people under financial stress tend to become materially and socially indebted to others, and if indebtedness leads them to refrain from expressing their non-conformist opinions for fear of responses that conflate their economic position with their opinion, then financial stress might reduce expressed autonomy. Since financial stress is not entirely determined by income (Francoeur, 2002), the effects of financial stress might be observed after income is controlled.

Shame

Shame reflects a profound failure of the individual in identity control (Tangney & Dearing, 2003). However, just as identity can be context-specific, shame might extend from events in specific areas of life. For example, studies suggest that financial stress can promote financial shame (Roelen 2019; Gladstone, Jachimowicz, Greenberg, & Galinsky, 2021). Thus, the effects of financial stress might be partially mediated by shame. Shame could also mediate an effect of community rank since low rank is often indicated by a lack of respect from others and social exclusion of those believed to be unworthy (Toubiana & Zietsma, 2017). More generally, shame might influence autonomy simply because the experience of shame can be stressful (Lupis, Sabik, & Wolf, 2016) and because shame, like the more general condition of social anxiety (Anglim, Horwood, Smillie, Marrero, & Wood, 2020), often results in social withdrawal, and can promote

conformity (Bică, 2023). These effects on actual autonomy are likely to be translated into autonomy beliefs. Given the tendency of people who feel ashamed to avoid further revealing themselves the estimated effect of shame is expected to be stronger on expressed autonomy than on opinion autonomy.

Methods

Data

Data are from the National Survey of Midlife Development in the United States (MIDUS) study (Brim, Ryff, & Kessler, 2004).² The MIDUS study surveyed a representative sample of non-institutionalized, English-speaking adults in the coterminous United States, initially 25–74 years of age, contacted by random digit dialing (RDD). Three waves of telephone interviews in 1995–96, 2004–2006, and 2013–2014 were each followed up by mail questionnaires (see MIDUS, n.d.). The response rates averaged telephone in questionnaires for the RDD sample at wave 1 was 70%. Nine to ten years later, 70% of the initial RDD respondents participated in the wave 2 data collection. Eight to ten years later, 74% of the RDD respondents participated in wave 3. Since some of the non-response at follow-up was due to mortality, the estimated response rates, adjusted for mortality, are slightly higher (e.g., 77% at wave 3). The analytic sample comprises 1,255 respondents to the psychological autonomy assessment at wave three who participated in at least two waves of data collection.

Measures³

Opinion and expressed autonomy.

All items used to assess opinion and expressed autonomy are from the widely used scale developed by Ryff & Keyes (1995). The opinion autonomy items in that scale at wave 1 are: “I have confidence in my opinions, even if they are contrary to the general consensus”; “I tend to be influenced by people with strong opinions”; “I judge myself by what I think is important, not by the values of what others think is important.” Those are the only items included in the wave-one survey. The expressed autonomy items, included in waves two and three, are: “I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people” and “It's difficult for me to voice my own opinions on controversial matters.” The response scale is: (1) strongly agree, (2) somewhat agree, (3) agree a little, (4) neither agree or disagree, (5) disagree a little, (6) disagree somewhat, (7) strongly disagree. Since the items used to assess both aspects of autonomy are balanced (i.e., questions are phrased as both negative and positive statements), the measure is less subject to acquiescence bias than Likert scales with only positively phrased stem items (Dykema, Schaeffer, Garbarski, Assad, & Blixt, 2022; Weijters & Baumgartner, 2022). Analyses of factor scores from a measurement model estimated using Stata (Statacorp, 2017) are presented in Appendix A in Supplementary Materials, with analyses of model fit presented in Supplementary Appendix B.

² The MIDUS data underlying this article are available through the Inter-university Consortium for Political and Social Research (ICPSR) housed at the Institute for Social Research at the University of Michigan <https://www.icpsr.umich.edu/web/ICPSR/series/203> Unique identifiers are: Wave 1 (ICPSR 2760), Wave 2 (ICPSR 4652), Wave 3 (ICPSR 36346).

³ Replication materials are available in this repository: <https://osf.io/sf9rt6/>

Age and gender. Year of birth is used to determine age at each wave. The term gender is used here rather than sex because respondents were asked to report their gender, capturing self-perception (Tate, Ledbetter, & Youssef, 2013). Although gender identity is not necessarily binary, only dichotomously coded gender is available in the publicly available MIDUS data.

Education. Education was assessed in the telephone interview at each wave by asking, “What is the highest grade of school or year of college you completed?” Responses are coded into twelve ordinal categories ranging from (1) some grade school to (12) PH.D., ED.D., MD, DDS, LLB, LL.D., JD, or other professional degree.

Income. Respondents were asked to report income from “... wages and other stipends from your own employment” in “the past 12 months.” Individual pension and social security income (SSI), which are also forms of earned income (Steuerle & Caleb, 2019), were also assessed in the latter two waves of the study. However, only household SSI was assessed at the first wave. To maintain consistency across waves in total personal income, including SSI, the wave one household SSI was attributed to the respondent based on the age and retirement status of the respondent and any spouse or partner in the household. In cases where both the respondent and spouse are 60 and older and reported that they are retired, half of the household SSI income is attributed to the respondent. In cases where only the respondent is 60 or older and retired, all SSI income is attributed to the respondent. Sensitivity analyses noted below show that the inclusion of attributed wave-one SSI only trivially alters the estimated income effect. This is unsurprising since wave 1 income, including SSI, is very similar to income without SSI ($r = 0.98$). Analyses presented are of income percentile rank at each wave.

Community rank. Community rank was assessed in the mail questionnaires in the final two waves. The text introducing the measure stated: “People define community in different ways; please define it in whatever way is most meaningful to you. At the top of the ladder are the people who have the highest standing in their community. At the bottom are the people who have the lowest standing in their community. Where would you place yourself on this ladder? Please check the box next to the rung on the ladder where you think you stand at this time in your life relative to other people in the community with which you most identify.”

Financial Stress. Financial stress was assessed in the mail questionnaire at all three waves by the following questions: (1) Using a scale from 0 to 10 where 0 means “the worst possible financial situation” and 10 means “the best possible financial situation,” how would you rate your financial situation these days?; (2) In general, would you say you (and your family living with you) have more money than you need, just enough for your needs, or not enough to meet your needs?; How difficult is it for you (and your family) to pay your monthly bills? This latter variable has a four-level response scale ranging from very difficult to not at all difficult. Factor scores for the three variables are used in the analyses, with high scores indicating more financial stress.

Shame. A single question about the frequency of shame experienced in the “past 30 days” was posed to respondents in the final two waves. The five-point scale ranges from “all of the time” to “none of the time.” However, too few respondents report any experiencing shame to differentiate among levels, so a dichotomous indicator of those reporting any shame is utilized in the analyses.

Estimation of Effects

Effects are estimated with maximum likelihood in a dynamic panel data (DPD) framework (Williams, Allison, & Moral-Benito, 2018; Leszczensky & Wolbring, 2022). DPD models adjust for reciprocal effects of autonomy on potential resources and impediments and for unmeasured stable factors that are antecedent to those predictors and autonomy. Thus, DPD model estimates are more consistent with causal interpretations than estimates produced by alternative approaches. A recent Monte Carlo simulation study by Leszczensky and Wolbring (2022) concluded that DPD models when estimated using maximum likelihood, provide the best way to “address reverse causality” for analyses that include three or more waves of data. That study also demonstrated that DPD models are less biased than alternatives, such as standard fixed effects, and that the DPD approach helps circumvent the misspecified temporal lags that plague other cross-lag and first differences approaches.

Although most estimates presented below are from models that meet DPD estimation criteria, community rank, and shame were only assessed at the last two waves of the MIDUS. Thus, estimates of the effects of those variables do not fully meet DPD criteria. Moreover, since expressed autonomy was not assessed at wave one, the DPD analysis of that outcome requires the identifying assumption that expressed autonomy and opinion autonomy are similar enough to specify wave-one opinion autonomy as a proxy for wave-one expressed autonomy. Although this assumption is likely to bias the results of the expressed autonomy analyses, the alternative two-wave analysis for that outcome is likely to be more biased (Van Breukelen, 2006; Saito, 2020).

Estimation models are estimated with wave-three population weights, and all estimates are obtained using full-information maximum likelihood FIML (Lee & Shi, 2021), in which all information is used to impute any missing data. In [Supplementary Materials](#), the number of missing cases each for each analytic variable is presented in [Supplementary Appendix C](#). Additional descriptive statistics are presented in [Supplementary Appendix D](#), and correlations are presented in [Supplementary Appendix E](#).

Results

Estimated effects on opinion autonomy from the DPD models are presented in the first three columns of [Table 1](#), and effects on expressed autonomy are presented in the last three columns. Additional models were estimated but are not shown in the table because estimates from those models are very similar to the results shown. For example, although there were reasons for expecting shame to mediate the effects of financial stress, the estimated effect of financial stress is the same with and without shame controlled. In all analyses, the estimates for the two outcomes are very similar. For both outcomes, age, education, financial stress, and shame have significant effects. In both analyses, the estimated effects of age and education are substantially reduced when financial stress and shame are controlled. The results suggest that psychological autonomy generally increases with age and education because financial stress and shame generally decrease with age and education.

More details about those trends are revealed in the table of bivariate baseline correlations (see [Supplementary Materials](#)), which shows that the positive association of age with each outcome is much larger in the first two waves than in the final

Table 1. Estimated Effects of Income, Community Rank, Financial Stress, Shame and Controls on Opinion and Expressed Autonomy, from Dynamic Panel Data Models

	Opinion autonomy			Expressed autonomy		
	(1)	(2)	(3)	(1)	(2)	(3)
	B	b	b	b	b	b
	SE	SE	SE	SE	SE	SE
Age at time 1	0.008 *	0.007 *	0.004 +	0.006 *	0.005 *	0.003
	0.003	0.003	0.002	0.003	0.002	0.002
Men	0.011	-0.002	0.002	0.072 +	0.066	0.069
	0.051	0.053	0.048	0.047	0.049	0.043
Education	0.134 *	0.124 *	0.101 *	0.110 *	0.103 *	0.080 *
	0.059	0.057	0.046	0.051	0.050	0.038
Education lagged	0.057 *	0.062 *	0.050 +	0.057 *	0.054 *	0.042 *
	0.027	0.031	0.026	0.028	0.028	0.021
Income percentile	0.000	0.000	0.000	0.000	0.000	0.000
	0.001	0.001	0.001	0.001	0.001	0.001
Income lagged	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
Community rank		0.021 +	0.016		0.017 +	0.013
		0.011	0.010		0.009	0.008
Financial stress			-0.048 +			-0.043 *
			0.027			0.021
Fin. stress lagged			-0.028 *			-0.023 *
			0.012			0.009
Shame			-0.122 ***			-0.093 ***
			0.031			0.024
Lagged-autonomy	0.019	0.009	-0.004	-0.003	-0.007	-0.016
	0.030	0.029	0.027	0.017	0.016	0.015
Intercept wave 3	-1.730 *	-1.740 *	-0.806	-1.445 *	-1.441 *	-0.625
	0.713	0.730	0.587	0.619	0.605	0.485
R-squared	0.667	0.675	0.682	0.769	0.775	0.782

Notes: $n = 1,255$. Three waves of data are required to meet DPD estimation criteria.

Community rank and shame were assessed only at two waves, so their lagged effects cannot be estimated in the DPD framework. Lagged autonomy variables do not have statistically significant effects due to the inclusion of a latent alpha variable that captures individual-level.

Variation (see text).

*** $p < .001$; ** $p < .01$; * $p < .05$; + $p < .10$.

wave. The bivariate associations of age with financial stress and shame decline across waves. These trends suggest that as respondents aged from adulthood to midlife, both aspects of autonomy increased as financial stress and the likelihood of feeling ashamed decreased. However, at wave 3, when respondents were older, further reductions in financial stress with age ceased, and the negative association of age with shame lessened.

In contrast to age, the positive bivariate association of education with each aspect of autonomy increases across waves, as does the negative association of education with financial stress and shame. This pattern of associations suggests that the effect of education on psychological autonomy is maintained in later life because education is associated with lower levels of financial stress and shame in older age.

In the DPD analytic framework, it is not possible to formally determine whether the changes in the estimated effects of age and education are due to financial stress and shame mediating their effects (Zhao, Lynch, & Chen, 2010). However, the

pattern of results is consistent with partial mediation. It is necessary to keep in mind, though, that shame was assessed only twice, which is insufficient for DPD analysis. Thus, its effect cannot necessarily be interpreted as causal.

One estimate that is statistically significant at only the $p < .10$ level but is worthy of note is the effect of gender on expressed autonomy ($Z = 1.81$, $p < .08$). That alpha level is not often reported in social research, but it is consistent with gender differences observed in prior research on similar outcomes. The gender difference is also worth noting because it is the only variable estimated to have an asymmetric effect on the two aspects of psychological autonomy, with the effect constrained to expressed autonomy and not observed in the analysis of opinion autonomy.

Community rank is the only other variable with an effect that can be interpreted as statistically significant at the $p < .10$ level. The results indicate that community rank is associated with both opinion and expressed autonomy. When financial stress and shame are added as covariates, the estimated

coefficients for the effects of community rank in each analysis become about 25% smaller. That pattern of change is consistent with the idea that financial stress and shame might mediate the effects of community rank on both outcomes.

Two aspects of the analyses explain why the lagged dependent variables (i.e., the autocorrelations) are not significantly different from zero. First, the Alpha term in the DPD models captures individual-level variation (i.e., a fixed-effects specification). The large *R*-square values in the table reflect the inclusion of Alpha in the models and indicate that the outcome scores are fairly stable over survey waves. Given the adjustments for stable individual differences, the lack of effects of prior levels of autonomy in the DPD analyses is unsurprising. In additional analyses excluding the Alpha term, the lagged autonomy effects are large and statistically significant. For example, in the final analytic model of opinion autonomy presented in model 3, the removal of Alpha from the model results in a lagged dependent variable estimated effect is $b = 0.79$ ($se = 0.18, p < .001$), as opposed to $b = -0.016$ ($se = 0.015, p > .10$) in Table 1.

Including the alpha term also explains the finding that income does not predict either aspect of autonomy.⁴ When the alpha term and education are dropped as covariates, the coefficients for lagged and contemporaneous income are statistically significant. The first model in Table 1 was re-estimated to illustrate the effect of removing the alpha term and dropping education as a control. The estimated lagged and contemporaneous income effects from that model were essentially the same ($b = 0.002, se = 0.001, p < .01$), suggesting that income effects are explained by education and stable individual factors that influence income and opinion autonomy.

Discussion

Although this study began with the idea that certain variables might have different effects on the two aspects of psychological autonomy, all the variables that have statistically significant effects on opinion autonomy at a conventional level ($p < .05$) were found also to have similarly significant effects on expressed autonomy, and vice versa. Gender has a significant effect on expressed autonomy at a lower than conventional level of confidence ($p < .10$) but no effect on opinion autonomy. It is the only variable observed to have a substantively different effect on the two outcomes.

The results suggest that age, education, financial stress, shame, and possibly community rank similarly influence the maintenance and expression of autonomous opinions. Thus, in considering potential explanations for the effects of those variables it is necessary to consider processes that could influence both aspects of psychological autonomy. The identity control processes (Stets & Burke, 2005) outlined in the introduction were interpreted as suggesting that community rank, financial stress, and shame should have more substantial effects on expressed autonomy than on opinion autonomy. Thus, at minimum, modification of the identity control perspective as framed at the outset is necessary.

A related theory that provides a compelling explanation for the results is an extension of affect control theory (ACT)

called ACT-self (Heise & MacKinnon, 2010). MacKinnon and Heise argue that the experience of the self as a stable entity is tied to the motive to maintain effective authenticity. If people tend to express their opinions in ways that maintain affective authenticity, manifest through consistency in feelings about oneself, and that tendency is translated into self-related beliefs about one's tendencies, then people who believe they hold non-conformist opinions will also believe they tend to express them.

ACT-self (Heise & MacKinnon, 2010), in conjunction with the recognition of the moral relevance of shame (Turner & Stets, 2006), also provides a plausible explanation for the effects of shame on both aspects of psychological autonomy. If shame reflects a feeling of moral unworthiness to express one's opinions, ACT-self suggests that feelings of unworthiness will tend to extend to feelings about one's capacity for independent thinking and autonomous opinion formation. These feelings, and the tendencies associated with them, can be translated into the self-related beliefs that constitute opinion and expressed autonomy. Related affective and identity processes might also explain why the effect of low community rank on both aspects of psychological autonomy seems to be mediated by shame. Community rank is likely to reflect the extent to which one feels respected or disrespected, and it might also be associated with feelings of unworthiness, contributing to shame. The finding that controlling shame reduces the estimated effect of community rank on both aspects of psychological autonomy suggests that people ashamed of their low community rank are less likely to believe they form or express autonomous opinions than those who are not low ranking and who feel unashamed about their rank.

One additional dimension of affects that is closely related to shame, as well as authenticity and perceived worthiness, is confidence. Confidence in oneself as an independent thinker is thought to provide a motivational force to express one's ideas (Oney & Oksuzoglu-Guven, 2015, p. 151). Indeed, Rotenstreich (1972) argues that confidence is indicated by "... *an opinion that cannot be hidden*" (italics in the original). A related idea is that "internal efficacy" (i.e., one's knowledge about political issues) motivates opinion expression (Hansen & Goenaga, 2023). However, confidence in oneself as an independent thinker and agent in opinion discourse is necessarily a broader phenomenon than internal efficacy since it is rooted in general beliefs about oneself in discursive contexts rather than beliefs about one's knowledge relevant to specific political issues. General confidence in oneself as an independent thinker and agent in opinion discourse, though, might not necessarily extend to confidence in with respect to other actions. The relevant form of confidence might be more accurately labeled "generalized discursive self-confidence" or confidence specific to discourse about opinions. Qualitative research suggests that type of confidence develops through the negotiation of self and authenticity within situated interactions (Oh, 2023, pp. 65–96).

Although processes related to generalized discursive self-confidence and affect control (Heise & MacKinnon, 2010) provide a theoretical basis for compelling explanations for the observed effects, identity control, and cognitive processes remain relevant. Indeed, a motive to maintain self-consistency has been posited in identity control theory (Gecas, 1982; MacKinnon, 2015). The maintenance of identity beliefs (Schafer & Shippee, 2010; Hallsten, Rudman, & Gustavsson, 2012) could explain why education, age, and

⁴ A sensitivity analysis that dropped SSI household income attributed to the respondent from the individual income measure produced similar results. For example, the estimated lagged income effect presented in the table is only 0.00009 larger than with SSI income excluded. Both effects have similar Z-scores (-0.047 vs. -0.041) and *p*-values < .60.

other factors are associated with both opinion and expressed autonomy. For example, older people and those with more education could believe those status characteristics entitle them to develop and express their minority opinions. These beliefs might bolster their confidence in developing and expressing potentially unpopular opinions.

As noted above, the relation between cognition and affect is reflected in the effect of shame. In terms of self-related beliefs shame reflects self-perceived social illegitimacy. Thus, the observed effect of shame is consistent with the idea that perceiving oneself as an illegitimate “producer of opinions” influences opinion expression (Laurison, 2015). Self-perceived legitimacy and related beliefs could also be central to the effects of other variables, such as education and age. Those beliefs could feed back to affect in a different way. For example, status characteristics theory (Ridgeway, 2019) suggests that education and age can provide a basis for self-perceived legitimacy in interaction, further providing a basis for generalized self-confidence in contexts where opinion discourse occurs. A sense of illegitimacy and its affective complements might also underlie the effect of financial stress because people who owe debts to others might feel their opinions on financial matters are delegitimated, at least in interactions with those to whom they are indebted.

Expanding on the Explanation for the Effect of Education

The positive effect of education on opinion autonomy is slightly larger than on expressed autonomy. This pattern suggests that it is not only the acquisition of verbal facility acquired through education that is relevant (Keith, 2007). Cognitive capacity developed through education could also influence independence in opinion formation and knowledge acquisition (Berinsky, 2013). However, it is unclear why knowledge acquisition would promote the development and expression of opinions that differ from the opinions of others, and thus opinion and expressed autonomy. It could be that independence of opinion is translated into opinion autonomy through individualism. If education promotes or heightens the valuation or internalization of individualism as an ideology (Weakliem, 2002), and individualistic expression (Anduiza, Guinjoan, & Rico, 2019) then affects control processes associated with the maintenance of authenticity among individualists, then processes that link values to beliefs and emotions could underlie the effects of education.⁵

Finally, the finding that the estimated effect of education on each aspect of autonomy is reduced by approximately 20–30% when financial stress and shame are controlled suggests that education might promote psychological autonomy in part by reducing financial stress and shame. Before turning to further discuss the effects of those latter factors, it is helpful to consider the lack of an effect on income.

The Absence of an Income Effect

Income was found to have no association with either opinion or expressed autonomy after adjustments for education and unmeasured individual differences. Although the lack of an income effect is consistent with the findings of most previous studies of outcomes related to expressed and opinion autonomy, as well as in research that combines the two forms of psychological autonomy (Magee, 2006; Kaplan et al., 2008; Dalisay et al., 2012; Kim, 2012; Vera-Villarroel

et al., 2015), the reasons for why income effects have generally not been observed has not been discussed in the literature. Given that concerns about plutocratic threats to democracy imply income effects, it is important to ask why no such effects were observed. One possibility is that increases in income do not tend to increase confidence in one’s capacities to develop and express independent opinions in general, even though more affluent people might be more confident in their knowledge about political matters (i.e., internal efficacy) and more willing to offer opinions about those matters (Berinsky, 2013; Laurison, 2015). It might also be that wealth, rather than income, has a more general effect on opinion or expressed autonomy. Unfortunately, a plausible measure of wealth was not available for this study. It might be useful for future research on the association of income and wealth with psychological autonomy to take narcissism or entitlement into account, as those personality characteristics (Erhardt, 2023), defined in part by self-related beliefs, have been found to be positively associated with socioeconomic status in previous research (Côté et al., 2021).

Financial Stress, Shame, Confidence, Legitimacy, and Regulatory Focus

Evidence for a connection of shame and financial stress with loss of confidence is currently scant and indirect. One way these variables could be connected is through mental health. Studies have found several forms of mental illness to be associated with stress and shame and loss of self-confidence (Zhang, Deng, Yu, Zhao, & Liu, 2016; Bica, 2023). However, there are theoretical reasons for expecting financial stress and shame to undermine psychological autonomy by eroding confidence even in the absence of mental illness. For example, regulatory focus theory, which posits that people tend to adopt either a self-protective or a self-promoting orientation (Song, Peng, & Yu, 2019), suggests that initial failures at self-promotion, resulting in stress or shame, can lead people to adopt a self-protective orientation. Adopting a self-protective orientation is likely to be accompanied by lowered confidence. A self-protective orientation could increase the tendency to express conventional opinions to establish legitimacy, and thus compound the tendency for experiences of failure (e.g., financial failure) to promote conformity (Cross, Brown, Morgan, & Laland, 2017).

Processes suggested by ACT can be integrated with processes posited in regulatory focus theory to further explain the effects of shame, which is likely to reflect the belief that one is unworthy or illegitimate in some way. For example, feeling illegitimate can contribute to the erosion of “self-certainty” (Leonardelli, Lakin, & Arkin, 2007), which, in turn, might contribute to low self-confidence, including confidence about one’s opinions, and one’s capacity to voice them. Future studies should probe and extend upon these theoretical connections by investigating how successes, failures, self-beliefs, locus of control (Frey & Jegen, 2002), shame, confidence, and other self-conscious emotions (Sznycer, 2019) are directly and indirectly associated with expressed autonomy and opinion autonomy.

⁵ If the effect of education on expressed autonomy is mediated or moderated by free speech attitudes or practices, then changes in attitudes towards free speech at universities over time (e.g., see [Foundation for Individual Rights and Expression, and College Pulse, 2023](#)) could result in the weaker effects of education being observed in studies of more recent age-cohorts.

Age Differences

Age was considered a control variable in these analyses because previous research provided inconsistent evidence of age effects (Kaplan et al., 2008; Laurison, 2015; Matthes et al., 2018; Hansen & Goenaga, 2023). However, both opinion and expressed autonomy were observed here to increase with age. A potential explanation for the positive age effects reported above is that as people age they tend to increasingly feel confident in both holding and expressing minority opinions. Previous research has found self-confidence in general to increase with age (Roberts & Wood, 2006) but no research has investigated how confidence is associated with opinion formation and expressed autonomy as assessed here. Since studies that have investigated “don’t know” responses to opinion questions on surveys (Laurison, 2015; Hansen & Goenaga, 2023) have found age-trends to vary with the opinion topic, the general age-trends observed here might not extend to opinions about some topics. Studies that investigate age-trends in both general beliefs about one’s tendencies to hold and expressing minority opinions and trends in the disclosure of opinions about specific topics would be especially informative if effects of aging could be differentiated from cohort and period effects.

Alpha and Unmeasured Individual Differences

The alpha term in the DPD models captures stable unmeasured individual differences in psychological autonomy and its association with predictors. The impact of the alpha term on the estimates raises the question of which unmeasured individual differences might most profitably be investigated in future research. The spiral of silence theory posits that fear of becoming socially isolated should be considered (Noelle-Neumann, 1977; Matthes et al., 2012). However, fear of social isolation seems more relevant to expressed autonomy than opinion autonomy since opinions can, in principle, be maintained in private. The finding that Alpha partially explains the association of income with both aspects of psychological autonomy suggests that it might be profitable for future studies to focus on individual differences that are especially likely to be strongly associated with income and both aspects of psychological autonomy. In addition to intelligence, individual differences that might be especially relevant for future studies in this area include conscientiousness and agreeableness (Gish, Guedes, Silva, & Patel, 2022).

Interpreting the Effect of Gender

The estimated impact of gender on expressed autonomy is statistically significant only at the $p < .08$ level. However, in the analysis of opinion autonomy the gender coefficient is considerably smaller and lacks statistical significance. This suggests a distinctive gender effect on expressed autonomy is consistent with prior studies evaluating “don’t know” responses to survey questions (Laurison, 2015; Goenaga & Hansen, 2022; Hansen & Goenaga, 2023). The effect of gender observed here indicates that men more firmly believe that they express their non-conformist opinions than do women. The accuracy of this belief and its association with other self-related beliefs should be explored further in future research.

In considering explanations for the effect of gender on expressed autonomy, it is important to note that the gender coefficient becomes non-significant when community rank is controlled. One possible interpretation is that men report higher expressed autonomy than women because they perceive

themselves as holding a higher rank in their communities, which gives them greater confidence to voice minority opinions. Future studies should investigate the accuracy of these beliefs and their interconnections. More generally, research that explores how the beliefs that define opinion and expressed autonomy are linked to autonomous behaviors, confidence, and authenticity could significantly advance the development of theory in this area.

Supplementary Data

Supplementary data are available at *International Journal of Public Opinion Research* online.

Biographical Notes

William Magee is an Associate Professor of Sociology at the University of Toronto. His most recent research has appeared in journals such as *Journal of Happiness Studies*, *Advances in Life Course Research*, *Addictive Behaviors* and *Personality & Individual Differences*.

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