"I Still Haven't Found What I'm Looking For": Parental Privacy Invasion Predicts Reduced Parental Knowledge

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This 3-year, multi-informant study examined whether youths' perceptions of parental privacy invasion predicted lower parental knowledge over time, as a function of increased adolescent secrecy. Participants were 497 Dutch adolescents (Time 1 $M = 13$ years, $SD = 0.5$; 57% boys) and both parents. Higher youth-reported invasion predicted lower father- and mother-reported knowledge 1 year later. A link between privacy invasion and youths' increased secrecy mediated the association between privacy invasion and mothers' lower knowledge. Further, mothers' perceptions of adolescent secrecy mediated the association between adolescent-reported secrecy and mothers' knowledge. No mediation existed for father-report models. The results suggest that privacy invasion is counterproductive to parents' efforts to remain knowledgeable about youths, due to increased adolescent secrecy. We discuss the implications for family communication processes and successful privacy negotiations during adolescence.

Keywords: privacy invasion, secrecy, parental knowledge, parent–child communication, adolescence

Recent research has demonstrated that adolescents are the gatekeepers of parents' knowledge about youths' free-time activities and whereabouts. In particular, several studies suggest that youths' own willingness to share information is the main predictor of parents' knowledge about adolescents (e.g., Keijsers, Branje, VanderValk, & Meeus, 2010; Masche, 2010; Soenens, Vansteenkiste, Luyckx, & Goossens, 2006; Stattin & Kerr, 2000). The distinction between *how* parents acquire knowledge and *how much* they actually know is an important one; while youths may agree that parents should have information about their lives (e.g., Laird, Pettit, Dodge, & Bates, 2003), they may also interpret certain efforts to acquire knowledge as invasive of their privacy (Hawk, Hale, Raaijmakers, & Meeus, 2008; Petronio, 1994). These negative perceptions can prompt adolescents' secretive behaviors, which are aimed at fortifying violated boundaries (Petronio, 1994) and may ultimately weaken parents' abilities to remain informed. A more complete understanding of such processes can help families to establish reasonable expectations for youths' privacy and to avoid maladaptive communication patterns that may contribute to youths' social, emotional, and behavioral problems (e.g., Keijsers, Branje, VanderValk, et al., 2010; for a review, see Racz & Dish-

ion, 2011). In the present research, we specify longitudinal, multi-informant models to examine whether youths' perceptions of parental privacy invasion predict lower levels of parental knowledge over time and examine the interpersonal processes that might account for this association.

Privacy and Parental Knowledge in Adolescence

Youths' demands for privacy increase during adolescence. Communication privacy management theory (CPM; Petronio, 2002, also see Altman, 1975) defines *privacy* as one's expectation and experience of control over others' access to information, spaces, or property that is viewed as one's own. Although behaviors related to privacy regulation can vary widely across cultures, prior theories have regarded the *need* for privacy as a cultural universal (Altman, 1977). When individuals expect and experience privacy, they feel freer to engage in uninhibited self-expression and experimental behavior and perceive greater self-efficacy in managing others' impressions about the self (Margulis, 2003; Pedersen, 1997; Petronio, 2002). These psychological functions of privacy are aligned with adolescents' developmental task of establishing autonomy from parents (Steinberg, 1990). However, youths must also share enough to maintain the familial bonds that are important for healthy maturation (e.g., Collins, Laursen, Mortensen, Luebker, & Ferreira, 1990; Petronio, 2010). CPM emphasizes this dialectic tension between "openness and closedness," which poses a particularly important challenge for adolescent-parent relationships (Petronio, 2010; Petronio & Caughlin, 2006).

CPM theory proposes that family privacy is a layered construct, including collective boundaries that function to regulate the dissemination of whole-family information to outsiders, as well as internal boundaries that direct exchanges between particular groups or individuals *within* the family system (Petronio, 2010; see also Vangelisti, Caughlin, & Timmerman, 2001). These intrafamilial privacy boundaries may regularly undergo periods of tur-

bulence in adolescence, during which both parents and children must adjust rules and expectations to match youths' changing cognitive, physical, and social capacities (Collins et al., 1997; Laursen & Collins, 2004; Petronio, 2010; Petronio & Caughlin, 2006). During adolescence, youths see an expanding range of issues as falling outside of parents' legitimate right to know (e.g., Darling, Cumsille, Caldwell, & Dowdy, 2006; Smetana, Metzger, Gettman, & Campione-Barr, 2006). Parents are reluctant to grant informational privacy at the rate that children desire, however (Collins et al., 1997; Smetana, Crean, & Campione-Barr, 2005). Parents often assume that they are owners or co-owners of information, space, and property that adolescents view as their own to control, and these expectations for access can manifest as covert (e.g., snooping) or direct (e.g., asking questions) attempts at acquiring information. Perceptions of *privacy invasion,* which entail a loss of desired control over access to the self (Petronio, 1994, 2002), may occur under these circumstances. Indeed, prior research has shown that invasion perceptions are not only related to parents' eavesdropping on telephone calls or snooping through bedrooms (Petronio, 1994) but also to more common monitoring behaviors such as asking youths questions about their free-time activities or setting firm rules for disclosure and permission-seeking around such issues (Hawk et al., 2008).

It is currently unknown whether parental behaviors that youths interpret as acts of privacy invasion ultimately predict increased or reduced parental knowledge. On the basis of CPM theory, however, we anticipated that disagreements over legitimate co-ownership prompt adolescents to fortify privacy boundaries, which ultimately hampers parental efforts to remain informed. Hence, privacy-invasive acts may decrease parents' access and contribute to lower knowledge in the longer run.

> *Hypothesis 1:* We predicted negative longitudinal associations between youths' reports of parental privacy invasion and parents' later reports of knowledge.

Adolescents' Secretive Responses to Privacy Invasion

Adolescent concealment might serve as an underlying mechanism in the link between their perceptions of privacy invasion and parents' knowledge. According to CPM theory, feelings of privacy invasion represent adolescents' momentary failures to effectively manage information with parents and can thus heighten youths' sense of personal vulnerability (Pedersen, 1997; Petronio, 1994, 2010). As such, privacy invasion can prompt strong negative emotions (Burgoon et al., 1989) and motivate behaviors aimed at reestablishing one's preferred level of privacy control (Hawk, Keijsers, Hale, & Meeus, 2009; Petronio, 1994, 2010). As adolescents' views of their privacy rights continue to expand, they develop a repertoire of behaviors for dealing with parents' demands for information. In addition to *confrontational* responses, such as engaging in conflict with parents (Hawk et al., 2009; Mazur & Hubbard, 2004; Petronio, 1994), youths' increased need for control may result in their construction of highly fortified and restrictive boundaries that limit parents' access. These *concealment* attempts at boundary restoration (Petronio, 2010) include active topic avoidance (e.g., Caughlin & Afifi, 2004; Caughlin & Golish, 2002; Mazur & Hubbard, 2004), omitting details (e.g., Darling et al., 2006), hiding personal belongings (e.g., Petronio,

1994), and, perhaps most prototypically, keeping secrets from parents about issues such as free-time activities and peer contacts (Frijns, Keijsers, Branje, & Meeus, 2010; Keijsers, Branje, Frijns, Finkenauer, & Meeus, 2010). While there are nuances that distinguish each of these behaviors, factor-analytic evidence (Laird & Marrero, 2010; Petronio, 1994) suggests that they all can be subsumed under the general dimension of concealment.

Concealment responses to invasion represent youths' attempts to regain desired control through disengagement from parents. As such, secretive behavior is associated with problematic family relationships and youths' psychosocial difficulties (Finkenauer, Frijns, Engels, & Kerkhof, 2005; Frijns et al., 2010; Keijsers, Branje, Frijns, et al., 2010; Marshall, Tilton-Weaver, & Bosdet, 2005; Smetana, Villalobos, Rogge, & Tasopoulos-Chan, 2010). Prior research also suggests negative implications of adolescent secrecy for parents' knowledge about spare-time and school activities, regardless of whether perceived knowledge is based on adolescent reports (Marshall et al., 2005; Masche, 2010) or parental reports (Finkenauer et al., 2005).

> *Hypothesis 2:* Based on this prior evidence, we expected that adolescents' secretive responses to privacy invasion reduce parents' perceptions that they are knowledgeable about children's lives.

It further seems that youths' own reports of secrecy are only linked with parents' reports of knowledge when parents suspect children's concealment. Cross-sectional research (Finkenauer et al., 2005) has shown, for instance, that parents' suspicions of adolescent secrecy have robust negative associations with their own perceptions of knowledge. The present research represents the first longitudinal study of this issue.

> *Hypothesis 3:* We predicted that parental reports of youths' secrecy follow from youths' own, earlier reports of secrecy, and suspected secrecy is subsequently associated with parents' later reports of lower knowledge. That is, parents' suspicions of secrecy may mediate the link between youths' secrecy and lower parental knowledge.

Overview and Hypotheses

This research is the first to present a longitudinal, multi-informant account of how adolescents' perceptions of privacy invasion may predict lower parental knowledge over time. In light of CPM and existing empirical literature, we expected that parental privacy invasion would predict lower parental knowledge over time, as a function of increased adolescent secrecy and subsequently higher parental suspicions of secrecy. More specifically, we predicted a negative link between adolescents' reports of parental privacy invasion and parent-reported knowledge over time (Hypothesis 1). We also predicted that adolescent secrecy would mediate this link (Hypothesis 2). That is, we expected associations from higher privacy invasion to increased secrecy (Hypothesis 2a) and from higher secrecy to lower parental knowledge (Hypothesis 2b). Finally, we predicted that the link from adolescents' secrecy to lower parental knowledge would be mediated by parents' suspicions of secrecy (Hypothesis 3). In other words, we expected that adolescent secrecy would predict parents'

suspicions of secrecy (Hypothesis 3a), which in turn would predict lower parental knowledge (Hypothesis 3b). The full outline of predictions is depicted in Figure 1.

Additionally, we took the reciprocity of processes into account. Privacy management in families always involves at least two actors, who have to coordinate their expectations (Petronio, 2002). Such reciprocal influences between parents and adolescents have been well described in prior literature (e.g., Lytton, 1990) and have been empirically demonstrated with regard to privacy, secrecy, disclosure, and parental knowledge (e.g., Hawk et al., 2009; Keijsers, Branje, VanderValk, et al., 2010; Kerr, Stattin, & Burk, 2010; Willoughby, & Hamza, 2011). We tested for such reciprocal linkages. Due to the lack of longitudinal studies on the associations investigated in this study, however, we held no a priori predictions regarding reverse effects.

We adopted a multi-informant approach in this study. CPM theory notes that perceptions of privacy invasion are phenomenological (Petronio, 2002; Petronio & Durham, 2008) and depend heavily on individuals' personal expectations for boundary ownership. We therefore relied on adolescents' self-reports to assess this construct. In contrast, it is important to consider both adolescents' and parents' views on secrecy, in order to account for differences in what actually constitutes a secret (Petronio, 2010; Vangelisti et al., 2001) and to distinguish between actual and suspected levels of secrecy (Finkenauer et al., 2005). We chose a parent-reported measure of knowledge that focused on issues to which parents typically do not have access in absence of youths' voluntary disclosures, such as free-time activities and peer associations (Stattin & Kerr, 2000). In addition to highlighting the dynamic nature of privacy processes emphasized in CPM, this multirespondent approach overcomes potential issues related to single-informant bias and helps to demonstrate the interpersonal consequences of youths' privacy invasion perceptions.

As noted in CPM theory, families may use gendered criteria to construct and apply privacy rules, and thus consideration of both parental and adolescent gender is warranted. For example, prior research suggests that responses to privacy invasion differ in relationships with mothers versus fathers (Hawk et al., 2009). This may be because mothers, as compared to fathers, make more active efforts to acquire knowledge (Crouter, Bumpus, Davis, & McHale, 2005; Keijsers, Branje, VanderValk, et al., 2010; Waizenhofer, Buchanan, & Jackson-Newsom, 2004), tend to have closer relationships with offspring, and share more joint activities and expressions of emotion (Steinberg & Silk, 2002). Thus, we examined these predictions separately for mothers and fathers but made no firm predictions about potential differences. Earlier studies have also found that parents report more knowledge about girls' activities compared with boys' (Crouter et al., 2005; Keijsers, Branje, VanderValk, et al., 2010; Waizenhofer et al., 2004) and that boys are more secretive than girls (Keijsers, Branje, Frijns, et al., 2010). On the other hand, earlier studies on privacy invasion have not found strong gender differences in either youths' mean scores (Hale, Raaijmakers, Gerlsma, & Meeus, 2007; Hawk et al., 2008) or in their responses to invasion (Hawk et al., 2009). Given these mixed findings, we controlled all variables in our analyses for adolescent gender.

Method

Participants

Data for the current study were taken from an ongoing longitudinal project, entitled RADAR (Research on Adolescent Development And Relationships). This Dutch prospective cohort study is designed to identify family effects on adolescents' normal and abnormal behavioral development. For the current study, we used
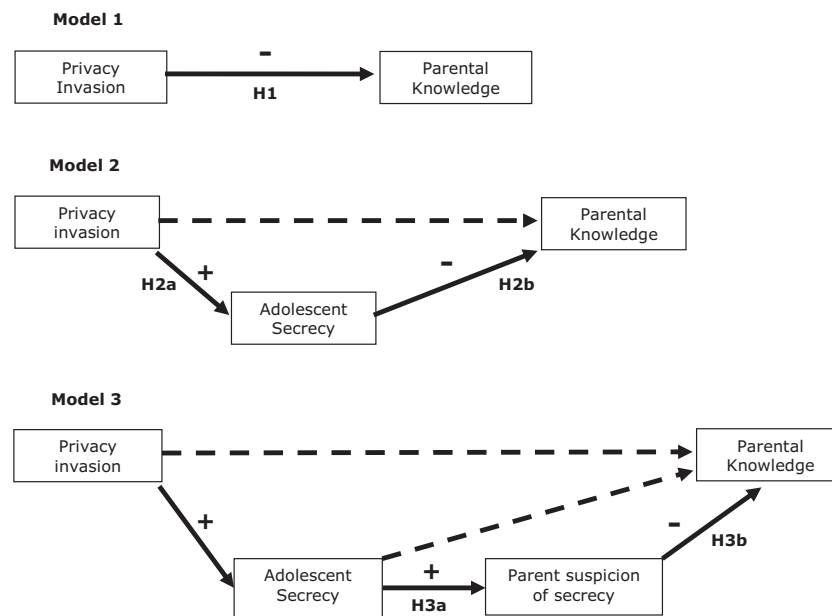

Figure 1. Summary of theoretical models and hypotheses. Dashed lines represent hypothesized mediated paths. H = Hypothesis.

three waves of annual questionnaire (T1–T3) data among the 497 youths and both of their parents.

The sample was composed of 214 girls and 283 boys, who were in the first grade of junior high school. They were 13 years old on average (*SD* = 0.5) at the first measurement (T1, 2005). Fathers' and mothers' ages were 46.8 years (*SD* = 5.1) and 44.5 years (*SD* = 4.5), respectively. Only families in which both parents had a good understanding of the Dutch language could participate. Of the youths, 95.2% identified themselves as being Dutch. Regarding family composition, 85.2% of youths lived with both biological parents, 8.3% lived with their mother, 4.5% lived with their mother and stepfather, 0.6% with their father, and 1.4% lived in other situations.

Procedure

Before the start of the study, adolescents and their parents received written information about the study. In each year of the study, trained research assistants made appointments for annual home visits with the adolescent's mother (or the primary caretaker). During the actual home visits, the adolescent and the parents completed a large battery of questionnaires. Research assistants provided verbal instructions in addition to the written instructions in the questionnaires. Families received the equivalent of US$150 per home-visit.

Measures

Perceived privacy invasion. A Dutch translation of the Intrusiveness subscale of the Level of Expressed Emotion (LEE) Questionnaire (Hale et al., 2007), measured youths' perceptions of parental privacy invasion. This is a seven-item adolescent-reported measure, arranged on a 4-point Likert scale (1 = *untrue*, 4 = *true*). Example items are, "My parents . . . are always nosing into my business; butt into my private matters; have to know everything about me; don't pry into my life" (reverse scored). This scale has been previously validated in other samples of Dutch adolescents (Hale et al., 2007, 2011; Hawk et al., 2008). In the current research, the measure showed acceptable alpha reliability at all measurement points, ranging from .66 to .84. The average score of the items was calculated at each time point.

Adolescent secrecy. Each respondent reported on the extent to which adolescents concealed information from their parents. In line with the results of a confirmatory factor analysis by Frijns et al. (2010), two secrecy items were extracted from the five-item Child Disclosure Scale (Stattin & Kerr, 2000). The specific items were, "Do you keep a lot of secrets from your parents about what you do during your free time?" and "Do you hide a lot from your parents about what you do during nights and weekends?" Similar items were used to obtain mothers' and fathers' perceptions of youths' secrecy (e.g., "Does your child keep a lot of secrets?"). Responses were rated on 5-point Likert scales, ranging from 1 (*never*) to 5 (*often*). Validity of this scale has been demonstrated by Frijns et al. (2010) and by other studies on a Dutch sample (Keijsers, Branje, Frijns, et al., 2010). The bivariate correlations between the secrecy items ranged from .54 to .67 across time points for adolescents (αs = .70–.80), from .50 to .58 across time points for mothers (αs = .65–.73), and from .47 to .59 across time points for fathers (αs = .64–.74).

Parental knowledge. Parental knowledge was assessed with a Dutch translation of five items[1] from the Parental Knowledge

Scale developed by Stattin and Kerr (2000; Kerr & Stattin, 2000). The scale measured mothers' and fathers' individual perceptions of how much they knew about their child's activities, friends, and whereabouts. Example items are "Do you know which friends your child hangs out with in his or her free time?" and "Do you know where your child goes if he or she is out in the evening with friends?" Responses were scored on a 5-point Likert scales, ranging from 1 (*never*) to 5 (*often*). Reliability was acceptable across raters and measurements, ranging from .63 to .77 for mothers and from .76 to .78 for fathers.

Strategy of Analyses

To test the aforementioned hypotheses, we used the Mplus Version 4.0 program (Muthén & Muthén, 2006) to examine a series of cross-lagged panel models, each covering three annual waves of data. We included correlations between all variables within each measurement point, as well as cross-lagged effects and stability paths between consecutive measurement points (i.e., from T1 to T2 and from T2 to T3) and stability paths from T1 to T3. To control for potential adolescent gender differences in all models, we regressed gender onto each variable at each time point.

We tested a series of models for each of the hypotheses. In Model 1, we tested the hypothesized direct longitudinal link from adolescent-reported privacy invasion to parent-reported knowledge. In Model 2, we additionally included adolescent-reported secrecy to examine the hypothesized mediated link from invasion to parental knowledge, via adolescent secrecy. Finally, in Model 3, we further added parents' own reports of youths' secrecy. This model tested whether the link between adolescent secrecy, following privacy invasion, and parental knowledge is mediated by parental perceptions of secrecy. In fact, two meditational effects were expected in this model, one from privacy invasion to parents' suspicions of youths' secrecy, via adolescent-reported secrecy, and another from adolescent-reported secrecy to parental knowledge, via parents' suspicions of secrecy. We examined three different, increasingly complex models, because entering a mediator may take away the direct effects. Hypothesized mediation effects were examined using a test of indirect effects within structural equation modeling with 5,000 bootstraps. We used three sequential models for mothers and fathers, separately, for a total of six models.

To estimate the pattern of missing values, we conducted Little's (1988) missing completely at random (MCAR) test. Although the result of this very stringent test was significant, $\chi^2(1211, N = 497) = 1648.59, p < .001$, the chi square/degrees of freedom (*df*) ratio of 1.36 indicated a good fit between sample scores with and without imputation (Bollen, 1989). Participants with partially missing data were thus included in the analyses. For each variable, a maximum of 16.5% of cases (*N* = 82) were missing. Full information maximum-likelihood estimation was therefore used for all models.

As it is desirable to examine longitudinal mediation with a mediating variable that is free of measurement error (Cole & Maxwell, 2003; Maxwell & Cole, 2007), we treated secrecy as a

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[1] The first wave of the RADAR study administered all of the original nine items for this scale, but subsequent waves administered only five of these items. In order to enable longitudinal modeling, we used the five-item measure at all measurement points.

latent variable in all analyses. In order to ensure that this latent factor represented the same construct at each measurement point (a prerequisite for longitudinal modeling), factor loadings of each indicator were constrained between measurement points. Doing so did not significantly worsen the model fit in Model 2 for either the mother-based ($\Delta\chi^2 = .51$, $\Delta df = 2$, $p = .78$) or father-based ($\Delta\chi^2 = 2.54$, $\Delta df = 2$, $p = .28$) models; therefore, these constraints were retained. Applying similar constraints to both adolescent- and parent reported secrecy in Model 3 did not significantly worsen the model fit for the mother-based model ($\Delta\chi^2 = 4.44$, $\Delta df = 4$, $p = .35$) but did decrease model fit for the father-based model ($\Delta\chi^2 = 15.80$, $\Delta df = 4$, $p = .003$). In this latter case, however, there was not a corresponding meaningful decrease in either comparative fit index (CFI; ΔCFI $< -.01$) or root-mean-square error of approximation (RMSEA; ΔRMSEA $< -.01$; Chen, 2007), suggesting all latent constructs were time invariant. Moreover, all factor loadings of the time-invariant models were sufficient (standardized values from .64 to .88).

Because we did not have specific expectations regarding the measurement points at which we would find the expected cross-lagged effects, we subsequently examined whether it was permissible to constrain the cross-lagged paths, correlated change, and gender effects to be equal across time points. For mother-based models, the addition of these constraints did not significantly decrease the fit of Model 1 ($\Delta\chi^2 = 8.74$, $\Delta df = 7$, $p = .27$), Model 2 ($\Delta\chi^2 = 17.53$, $\Delta df = 15$, $p = .28$), or Model 3 ($\Delta\chi^2 = 34.74$, $\Delta df = 26$, $p = .18$). For fathers, these constraints also did not reduce fits for Model 1 ($\Delta\chi^2 = 11.55$, $\Delta df = 7$, $p = .12$), Model 2 ($\Delta\chi^2 = 17.20$, $\Delta df = 15$, $p = .31$), or Model 3 ($\Delta\chi^2 = 28.61$, $\Delta df = 26$, $p = .33$). Thus, cross-lagged paths, correlated change, and gender effects were constrained to be fully time invariant in the final analyses.

Results

Descriptive Statistics

Tables 1 and 2 show means and standard deviations of all variables for the mother- and father-based models, respectively, as well as their bivariate correlations. There was moderate agreement between parents and adolescents with regard to youths' secrecy at each time point, with correlations ranging from .22 to .23 for adolescent–mother reports and from .20 to .30 for adolescent–father reports. Mothers' and fathers' reports of youths' secrecy showed similar levels of agreement, ranging from .25 to .33. In addition, youths' reports of secrecy from mothers and secrecy from fathers were strongly correlated, ranging from .58 to .63.

Across all models, no gender differences were observed for reports of privacy invasion (Bs from 0.01 to 0.02, SEs from 0.03 to 0.05, βs from .01 to .02, ps from .49 to .72). Further, neither mothers nor fathers showed adolescent gender differences in their reports of parental knowledge (Bs from -0.01 to 0.03, SEs from 0.02 to 0.03, βs from $-.001$ to .04, ps from .10 to .98). Adolescent reports of secrecy from fathers also showed no gender differences, nor did mothers' and fathers' reports of adolescents' secrecy (Bs from -0.04 to < -0.01, SEs from 0.03 to 0.04, βs from $-.02$ to $< -.01$, ps from .38 to .91). Adolescent-reported secrecy from mothers did show a significant gender difference, however, in both Model 1 and Model 2 (Bs = 0.13, SEs = 0.05, βs = $-.08$, ps $\leq$ .01). This effect indicated that boys were generally more secretive with mothers compared with girls.

Longitudinal Models: Cross-Lagged Effects and Tests of Mediation

The unstandardized coefficients and standard errors for each model can be seen in Tables 3 and 4 for mother models and Tables 5 and 6 for father models. The standardized values can be seen in Figures 2–4b, as can the fit indices for each model.

Hypothesis 1: Does privacy invasion predict lower parental knowledge? In Model 1, we tested the direct longitudinal link between privacy invasion and parental knowledge (Figure 2). Supporting our hypothesis, adolescents' earlier reports of invasion showed a negative cross-lagged effect upon both mothers' and fathers' later reports of knowledge. The reverse association from knowledge to invasion was not significant in either model (all βs $\leq$ .01). Thus, the results supported our prediction of a negative

Table 1

Descriptives and Bivariate Correlations for Parental Invasion as Reported by Adolescents (A), Adolescent Secrecy From Mothers as Reported by Adolescents (AM) and Mothers (MA), and Mother-Reported Knowledge (M)

| | Descriptives | | Correlations | | | | | | | | | | | |
Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. T1 invasion (A)	2.29	0.48	—											
2. T2 invasion (A)	2.37	0.61	.47***	—										
3. T3 invasion (A)	2.37	0.62	.35***	.53***	—									
4. T1 secrecy (AM)	1.82	0.84	.19***	.21***	.12**	—								
5. T2 secrecy (AM)	2.03	0.92	.14**	.23***	.13**	.26***	—							
6. T3 secrecy (AM)	2.11	0.90	.11*	.22***	.24***	.26***	.28***	—						
7. T1 secrecy (MA)	1.63	0.65	.22***	.21***	.15***	.23***	.16***	.12**	—					
8. T2 secrecy (MA)	1.85	0.67	.13**	.14**	.07	.28***	.22***	.17***	.45***	—				
9. T3 secrecy (MA)	1.98	0.72	.12**	.11*	.09	.25***	.22***	.22***	.40***	.57***	—			
10. T1 knowledge (M)	4.64	0.40	$-.07$	$-.07$	$-.04$	$-.14$**	$-.09$*	$-.04$	$-.37$***	$-.36$***	$-.29$***	—		
11. T2 knowledge (M)	4.57	0.45	$-.06$	$-.06$	.02	$-.17$***	$-.17$***	$-.11$*	$-.33$***	$-.53$***	$-.38$***	.60***	—	
12. T3 knowledge (M)	4.47	0.51	$-.10$*	$-.15$**	$-.07$	$-.22$***	$-.27$***	$-.16$***	$-.30$***	$-.43$***	$-.48$***	.50***	.62***	—

Note. All values are observed scores. T1 = Time 1.
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 2

Descriptives and Correlations for Parental Invasion as Reported by Adolescents (A), Adolescent Secrecy From Fathers as Reported by Adolescents (AF) and Fathers (FA), and Father-Reported Knowledge (F)

	Descriptives		Correlations											
Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. T1 invasion (A)	2.29	0.48	—											
2. T2 invasion (A)	2.37	0.61	.47***	—										
3. T3 invasion (A)	2.37	0.62	.35***	.53***	—									
4. T1 secrecy (AF)	1.78	0.84	.11*	.17***	.13**	—								
5. T2 secrecy (AF)	1.92	0.89	.18***	.24***	.21***	.46***	—							
6. T3 secrecy (AF)	2.08	0.91	.16***	.27***	.23***	.37***	.51***	—						
7. T1 secrecy (FA)	1.79	0.65	.01	.05	.01	.20***	.16***	.11*	—					
8. T2 secrecy (FA)	1.81	0.58	.20***	.14**	.10*	.20***	.24***	.20***	.45***	—				
9. T3 secrecy (FA)	1.89	0.67	.16**	.19***	.15**	.17***	.22***	.30***	.43***	.55***	—			
10. T1 knowledge (F)	4.24	0.63	−.03	−.03	.03	−.11*	−.10*	−.11*	−.26***	−.24***	−.23***	—		
11. T2 knowledge (F)	4.20	0.59	−.21***	−.19***	−.10*	−.10*	−.20***	−.15**	−.23***	−.39***	−.26***	.64***	—	
12. T3 knowledge (F)	4.11	0.58	−.10*	−.14**	−.11*	−.11*	−.20***	−.25***	−.19***	−.29***	−.35***	.55***	.62***	—

Note. All values are observed scores. T1 = Time 1.
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

longitudinal association from privacy invasion to parental knowledge 1 year later.

Hypothesis 2: Does adolescent-reported secrecy act as a mediator between privacy invasion and parental knowledge? We used Model 2 (Figures 3a and 3b), in which adolescents' reports of secrecy were added to Model 1, to examine whether youths' secrecy mediated the aforementioned longitudinal association from privacy invasion to lower parental knowledge. The hypothesized link from perceived privacy invasion to adolescent-reported secrecy (Hypothesis 3a) was significant for both the mother and father models (Figures 3a and 3b, respectively). Fur-

ther, we observed a significant positive effect from youth-reported secrecy to later invasion perceptions in the father model, and a trend for a similar positive association in the mother model ($p = .07$). Additionally, as hypothesized (Hypothesis 3b) earlier adolescent-reported secrecy from mothers showed a significant negative effect upon mothers' later knowledge. A longitudinal trend existed from adolescent-reported secrecy to father-reported knowledge ($p = .08$).

We observed a significant mediating process in the model for mothers (see Figure 3a). The bootstrapped test of mediation confirmed our prediction of a significant indirect effect from invasion

Table 3

Unstandardized Coefficients and Standard Errors for Stability and Cross-Lagged Paths in Models With Mothers' Reports

	Model 1				Model 2				Model 3			
	T1–T2		T2–T3		T1–T2		T2–T3		T1–T2		T2–T3	
Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Stability paths												
Invasion (A)	0.60***	0.05	0.48***	0.05	0.59***	0.06	0.46***	0.05	0.56***	0.05	0.45***	0.05
Knowledge (M)	0.68***	0.04	0.56***	0.05	0.66***	0.06	0.53***	0.06	0.57***	0.06	0.47***	0.07
Secrecy (AM)					0.36***	0.09	0.23***	0.08	0.33***	0.09	0.23***	0.08
Secrecy (MA)									0.70***	0.16	0.70***	0.12
Cross-lagged paths												
Invasion (A) to knowledge (M)	−0.06*	0.02	−0.06*	0.02	−0.03	0.03	−0.03	0.03	−0.01	0.03	−0.01	0.03
Knowledge (M) to invasion (A)	0.01	0.04	0.01	0.04	0.03	0.05	0.03	0.05	0.08	0.06	0.08	0.06
Invasion (A) to secrecy (AM)					0.19**	0.06	0.19**	0.06	0.17**	0.06	0.17**	0.06
Secrecy (AM) to invasion (A)					0.06†	0.03	0.06†	0.03	0.05	0.03	0.05	0.03
Secrecy (AM) to knowledge (M)					−0.08***	0.03	−0.08***	0.03	−0.07**	0.03	−0.07**	0.03
Knowledge (M) to secrecy (AM)					−0.09	0.08	−0.09	0.08	−0.00	0.10	−0.00	0.10
Secrecy (MA) to knowledge (M)									−0.11**	0.04	−0.11**	0.04
Knowledge (M) to secrecy (MA)									−0.04	0.10	−0.04	0.10
Invasion (A) to secrecy (MA)									−0.07	0.05	−0.07	0.05
Secrecy (MA) to invasion (A)									0.07	0.05	0.07	0.05
Secrecy (AM) to secrecy (MA)									0.13***	0.04	0.13***	0.04
Secrecy (MA) to secrecy (AM)									0.12	0.09	0.12	0.09

Note. T1 = Time 1; A = adolescent report; M = mother report; AM = adolescent report on mother; MA = mother report on adolescent.
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 4
Unstandardized Coefficients and Standard Errors for Correlations in Models With Mothers' Reports

Correlation	Model 1			Model 2			Model 3		
	T1 B (SE)	T2 B (SE)	T3 B (SE)	T1 B (SE)	T2 B (SE)	T3 B (SE)	T1 B (SE)	T2 B (SE)	T3 B (SE)
Invasion (A) with knowledge (M)	−0.01 (0.01)	−0.00 (0.01)	−0.00 (0.01)	−0.01 (0.01)	−0.00 (0.01)	−0.00 (0.01)	−0.01 (0.01)	0.00 (0.01)	0.00 (0.01)
Invasion (A) with secrecy (AM)				0.08*** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.07*** (0.02)	0.07*** (0.02)
Knowledge (M) with secrecy (AM)				−0.05* (0.02)	−0.02 (0.01)	−0.02 (0.01)	−0.05** (0.02)	−0.02 (0.01)	−0.02 (0.01)
Invasion (A) with secrecy (MA)							0.08*** (0.02)	0.00 (0.01)	0.00 (0.01)
Knowledge (M) with secrecy (MA)							−0.12*** (0.02)	−0.07*** (0.01)	−0.07*** (0.01)
Secrecy (AM) with secrecy (MA)							0.15*** (0.04)	0.04* (0.02)	0.04* (0.02)

Note. T1 = Time 1; A = adolescent report; M = mother report; AM = adolescent report on mother; MA = mother report on adolescent.
† $p \leq .09$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

to knowledge, via adolescent-reported secrecy ($B = -0.02$, $SE = 0.01$, $\beta = -.02$, $p = .02$), and the previously observed direct effect from privacy invasion to mothers' knowledge was no longer significant. The mediation hypothesis was not supported for fathers (see Figure 3b; indirect effect: $B = -0.01$, $SE = 0.01$, $\beta = -.01$, $p = .13$). Unlike the model for mothers, however, a significant cross-lagged main effect persisted in Model 2, from higher privacy invasion to lower father-reported knowledge. Thus, although youths' perceived privacy invasion was linked to lower parental knowledge for both mothers and fathers, adolescents' reports of secrecy mediated this link only for mothers.

Hypothesis 3: Does parent-reported secrecy act as a mediator between adolescent-reported secrecy and parents' perceptions of knowledge? In order to further extend understanding of the process illustrated in Model 2, we added parental reports of adolescent secrecy to Model 3 (see Figures 4a and 4b). Specifically, we expected that parents would detect the higher youth-reported secrecy following from privacy invasion (i.e., a mediated longitudinal link from invasion to parent-reported secrecy, via youth-reported secrecy), which would in turn lead to lower levels of parental knowledge (i.e., a second mediated longitudinal link from adolescent-reported secrecy to parental knowledge, via parent-reported secrecy).

The hypothesized mediation process was present in the mother-report model. In addition to the significant path from invasion to adolescent-reported secrecy, there was a significant cross-lagged effect from adolescent-reported secrecy to mother-reported secrecy. There also was a significant cross-lagged effect from mother-reported secrecy to mothers' later reports of knowledge. Further, we found significant indirect effects from invasion to mother-reported secrecy, via adolescent-reported secrecy ($B = 0.02$, $SE = 0.01$, $\beta = .01$, $p = .03$) and from adolescent-reported secrecy to mothers' reports of knowledge, via mother-reported secrecy ($B = -0.01$, $SE = 0.01$, $\beta = -.02$, $p = .047$). Additionally, a direct negative effect persisted between adolescent secrecy and parental knowledge. Hence, mothers' suspicion of secrecy was a partial mediator.

The same mediation process was not present in the model for fathers. Specifically, adolescent-reported secrecy from fathers did not significantly predict fathers' later reports of youths' secrecy, and there was a trend ($p = .09$) for an effect of fathers' secrecy perceptions upon their later reports of knowledge. These findings rendered related tests of mediation unnecessary. There was, however, a significant direct cross-lagged effect from privacy invasion to father-reported secrecy. In contrast to the mother-reported model, the father-reported model continued to show the same significant main effect from privacy invasion to father-reported knowledge that was observed in Models 1 and 2.[2]

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[2] To test for potential gender differences on the hypothesized cross-lagged effects, we tested Model 3 with grouping based on adolescent gender. We compared a constrained model versus an unconstrained model. We found no gender differences in either the mother model, $\Delta\chi^2(5, N = 497) = 9.53$, $p = .09$, or for the father model, $\Delta\chi^2(5, N = 497) = 6.37$, $p = .27$.

Table 5

Unstandardized Coefficients and Standard Errors for Stability and Cross-Lagged Paths in Models With Fathers' Reports

	Model 1				Model 2				Model 3			
	T1–T2		T2–T3		T1–T2		T2–T3		T1–T2		T2–T3	
Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Stability paths												
Invasion (A)	0.59***	0.05	0.49***	0.05	0.58***	0.05	0.46***	0.05	0.58***	0.05	0.46***	0.05
Knowledge (F)	0.67***	0.04	0.39***	0.05	0.66***	0.05	0.38***	0.09	0.63***	0.05	0.37***	0.09
Secrecy (AF)					0.68***	0.08	0.53***	0.11	0.66***	0.09	0.53***	0.12
Secrecy (FA)									0.61***	0.13	0.69***	0.15
Cross-lagged paths												
Invasion (A) to knowledge (F)	−0.10***	0.03	−0.10***	0.03	−0.09**	0.04	−0.09**	0.04	−0.09**	0.04	−0.09**	0.04
Knowledge (F) to invasion (A)	0.01	0.03	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Invasion (A) to secrecy (AF)					0.18**	0.06	0.18***	0.06	0.18**	0.06	0.18**	0.06
Secrecy (AF) to invasion (A)					0.07*	0.03	0.07*	0.03	0.07*	0.03	0.07*	0.03
Secrecy (AF) to knowledge (F)					−0.04†	0.02	−0.04†	0.02	−0.03	0.03	−0.03	0.03
Knowledge (F) to secrecy (AF)					−0.02	0.06	−0.02	0.06				
Secrecy (FA) to knowledge (F)									−0.08†	0.04	−0.08†	0.04
Knowledge (F) to secrecy (FA)									−0.00	0.05	−0.00	0.05
Invasion (A) to secrecy (FA)									0.16***	0.04	0.16***	0.04
Secrecy (FA) to invasion (A)									0.02	0.05	0.02	0.05
Secrecy (AF) to secrecy (FA)									0.02	0.04	0.02	0.04
Secrecy (FA) to secrecy (AF)									0.07	0.08	0.07	0.08

Note. T1 = Time 1; A = adolescent report; F = father report; AF = adolescent report on father; FA = father report on adolescent.
† $p \leq .09$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Discussion

Adolescents' increasing needs for privacy may at times clash with parents' desires to remain knowledgeable about their children's leisure-time activities, friendships, and whereabouts. Parents draw upon their history of prior interactions with children when forming expectations about family privacy boundaries (Collins et al., 1997; Laursen & Collins, 2004), but changes that occur during adolescence necessitate a reconsideration of these assumptions. Indeed, parental efforts to remain informed can at times backfire, if they foster perceptions of privacy invasion (Hawk et al., 2008). We utilized a multi-informant, longitudinal design to investigate whether adolescents' reports of parental invasion predicted lower parental knowledge over time. We further expected that adolescent secrecy served as a route through which privacy invasion indirectly affected parents' reports of knowledge.

We found that adolescents' reports of invasion showed negative longitudinal associations with both mothers' and fathers' reports of knowledge (Hypothesis 1). Analyses also confirmed that youths' secrecy mediated the negative link between invasion and mothers' knowledge (Hypothesis 2). Privacy invasion also had indirect linkages with mothers' suspicions of secrecy, which appeared to be responsible for mothers' diminished perceptions of knowledge over time (Hypothesis 3). In contrast, fathers' suspicions of secrecy did not directly follow from youths' own reports, and only a trend existed for fathers' suspicions of secrecy to predict their subsequently lower reports of knowledge. Instead, robust main effects existed from privacy invasion to youth-reported secrecy, father-reported secrecy, and father-reported knowledge.

Theoretical Implications

According to CPM theory (Petronio, 2002, 2010), experiences of privacy invasion may prompt adolescent secrecy, as an attempt to fortify or restore desired boundaries with parents. This increased concealment and the fact that parents pick up on children's secrecy suggest that parental invasion actually leads to parents' *lower* perceptions of knowledge over time. Parents may monitor children with the intention of staying informed and even knowingly invade privacy as a means to this end, but such behavior can ultimately be counterproductive to their aims.

We also extend prior research on the associations between secrecy and adolescents' reduced well-being (Finkenauer, Engels, & Meeus, 2002, Finkenauer et al., 2005; Frijns, Finkenauer, Vermulst, & Engllels, 2005; Frijns et al., 2010) by showing that concealment from parents is not effective for restoring violated privacy boundaries. In fact, such behavior appears to actually beget stronger feelings of invasion. These findings support earlier suggestions that concealment responses to invasion do little to highlight family members' discrepant ideas about privacy and that negative interaction patterns may continue in absence of explicit attempts to realign disparate expectations (e.g., Collins et al., 1997; Hawk et al., 2009; Petronio, 1994).

The clear differences observed between fathers and mothers might be explained by their differential levels of direct involvement with adolescents. Mothers tend to have stronger emotional ties with youths, spend more time with them and make more active efforts to remain informed (Crouter et al., 2005; Keijsers, Branje, VanderValk, et al., 2010; Steinberg & Silk, 2002). As a result, mothers may be more attuned to changes in communication and indications of secrecy. Fathers, in contrast, acquire knowledge more indirectly—especially via mothers (Waizenhofer et al., 2004)—which may explain why invasion still had direct links with their reports of secrecy and knowledge. Examination of the means at each time point suggests that mothers indeed viewed themselves as being more informed than did fathers. Thus, while perceptions of privacy invasion were linked to secrecy from both parents, as

Table 6
Unstandardized Coefficients and Standard Errors for Correlations in Models With Fathers' Reports

Correlation	Model 1			Model 2			Model 3		
	T1 B (SE)	T2 B (SE)	T3 B (SE)	T1 B (SE)	T2 B (SE)	T3 B (SE)	T1 B (SE)	T2 B (SE)	T3 B (SE)
Invasion (A) with knowledge (F)	−0.01 (0.01)	−0.02 (0.01)	−0.02 (0.01)	−0.01 (0.01)	−0.02* (0.01)	−0.02* (0.01)	−0.01 (0.01)	−0.02* (0.01)	−0.02* (0.01)
Invasion (A) with secrecy (AF)				0.06* (0.02)	0.05** (0.02)	0.05*** (0.02)	0.06* (0.02)	0.05** (0.02)	0.05** (0.02)
Knowledge (F) with secrecy (AF)				−0.08* (0.04)	−0.06*** (0.02)	−0.06*** (0.02)	−0.08* (0.04)	−0.06*** (0.02)	−0.06*** (0.02)
Invasion (A) with secrecy (FA)							0.01 (0.02)	0.01 (0.01)	0.01 (0.01)
Knowledge (F) with secrecy (FA)							−0.15*** (0.03)	−0.06*** (0.01)	−0.06*** (0.01)
Secrecy (AF) with secrecy (FA)							0.16*** (0.04)	0.07*** (0.02)	0.07*** (0.02)

Note. T1 = Time 1; A = adolescent report; F = father report; AF = adolescent report on father; FA = father report on adolescent.
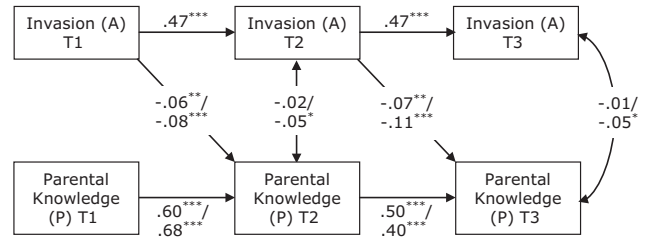* $p \le .05$. ** $p \le .01$. *** $p \le .001$.

Figure 2. Cross-lagged model examining direct effect of adolescent-reported (A) privacy invasion on parent-reported (P) knowledge. Values represent coefficients for mother-/father-reported parental knowledge, respectively. Time (T) 1–Time 3 stability paths were additionally included. All variables were controlled for adolescent gender. Model fit for mothers: $\chi^2(9, N = 497) = 9.54$; comparative fit index (CFI) = 1.00, root-mean-square error of approximation (RMSEA) = .01, standardized mean square residual (SRMR) = .02. Model fit for fathers: $\chi^2(9, N = 497) = 11.69$; CFI = 1.00, RMSEA = .03, SRMR = .02. * $p \le .05$. ** $p \le .01$. *** $p \le .001$.

well as to both parents' subsequent knowledge, the processes driving these effects in adolescent–father relationships require further study. In particular, future research should examine whole-family dynamics and potential triangulation processes that might underlie information exchanges between parents and teenagers.

Practical Implications

This study offers important information for youths and parents who must negotiate changing privacy expectations during adolescence. The results suggest that in absence of strong concerns, parents should avoid behaviors that clearly prompt feelings of invasion. Even when parents attempt to acquire information without children's knowledge, such as by snooping or eavesdropping, youths are often aware of such behavior (Petronio, 1994). Parents should strongly consider whether the benefits of knowingly invading adolescents' privacy are worth the potential risks to later communication and positive interaction (see also Burgoon et al., 1989; Hawk et al., 2009; Petronio, 1994, 2010).

CPM theory offers a rich account of how family members construct and utilize various privacy rules in order to achieve an optimal balance between closeness and separation in their relationships. Our results demonstrate the interpersonal consequences that follow from failures or breakdowns in constructing mutually acceptable privacy boundaries. Even when parents view their information seeking as legitimate, appropriate, and well intentioned, they should not ignore or minimize adolescents' explicit complaints of privacy invasion. While parents might assume that a good relationship will increase children's beliefs that parents deserve to have more information (Laird, Pettit, Dodge, & Bates, 2003), positive family interactions may also lead youths to expect more freedom to manage this information exchange as they see fit. Indeed, youths who perceive higher relationship quality with parents also report stronger feelings of invasion following from strict rules around permission seeking and disclosure (Hawk et al., 2008). To the extent that adolescents express feelings of invasion, parents can use such opportunities to openly discuss privacy expectations.
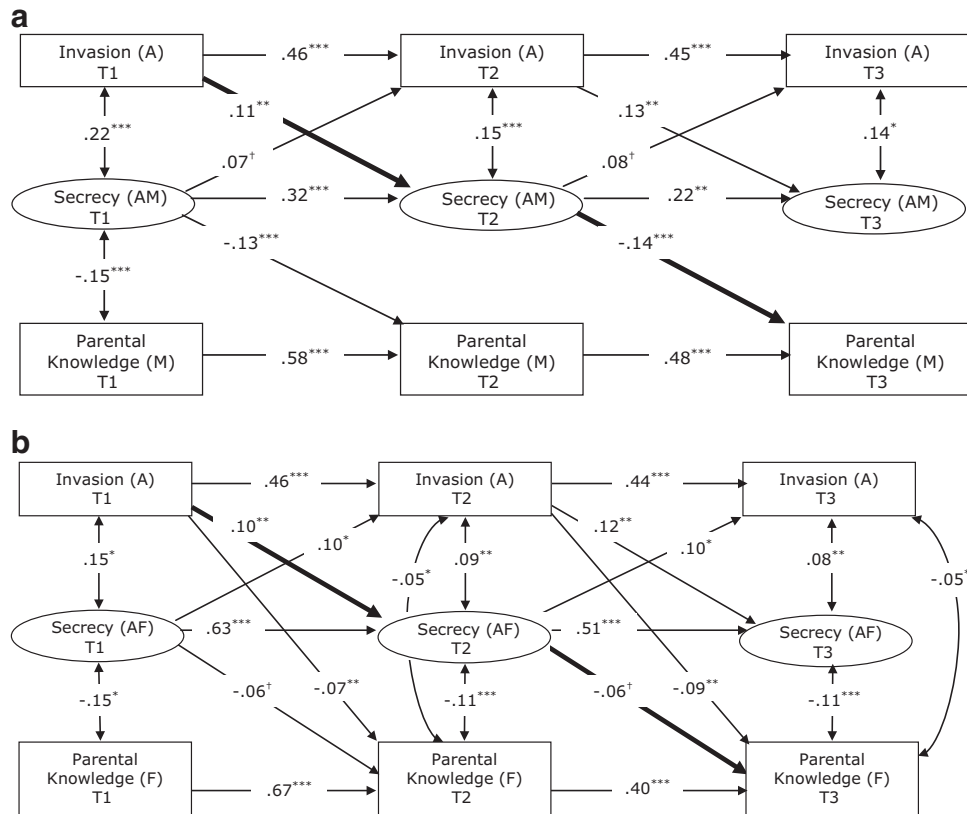
Figure 3. a. Cross-lagged model examining indirect effect of adolescent-reported (A) privacy invasion on mother-reported (M) knowledge, via adolescent-reported secrecy from mothers (AM) for Time (T)1–T3. Bolded lines indicate the hypothesized mediated path from privacy invasion to parental knowledge (indirect effect: $B = -0.02$, $SE = 0.01$, $\beta = -.02$, $p = .02$). T1–T3 stability paths were additionally included. All variables were controlled for adolescent gender. $\chi^2(50, N = 497) = 59.42$; comparative fit index (CFI) = .99, root-mean-square error of approximation (RMSEA) = .02, standardized mean square residual (SRMR) = .03. $^\dagger p \leq .07.$ $^{**} p \leq .01.$ $^{***} p \leq .001.$ b. Cross-lagged model examining indirect effect of adolescent-reported (A) privacy invasion on father-reported (F) knowledge, via adolescent-reported secrecy from fathers (AF) for T1–T3. Bolded lines indicate the hypothesized mediated path from privacy invasion to parental knowledge (indirect effect: $B = -0.01$, $SE = 0.01$, $\beta = -.01$, $p = .13$). T1–T3 stability paths were additionally included. All variables were controlled for adolescent gender. $\chi^2(50, N = 497) = 72.11^*$; CFI = .99, RMSEA = .03, SRMR = .03. $^\dagger p \leq .08.$ $^* p \leq .05.$ $^{**} p \leq .01.$ $^{***} p \leq .001.$

Limitations and Directions for Future Research

The present research possesses several strengths, including the use of multiple informants, a large sample, and a strict longitudinal design that controlled for all possible associations between the variables. There are also limitations to the study, however. First, our measure of privacy invasion required youths to report on parents as a unit, instead of separately for mothers and fathers. While links between invasion and secrecy were similar for mothers and fathers, our assumptions about differential levels of parental connectedness with youths would be further supported by additional studies on maternal versus paternal invasive behavior.

Second, the measure of invasion was highly phenomenological in nature, in that it tapped adolescents' general feelings but lacked clarity in terms of the specific parental behaviors driving such perceptions. Experiences of privacy invasion are very much in the eye of the beholder, however (Laufer & Wolfe, 1977; Petronio,

2002; Petronio & Durham, 2008), and individuals' own perceptions are of primary importance when examining unpleasant thoughts or feelings in family relationships (Laursen & Collins, 2004). While prior research suggests that a multitude of different behaviors may prompt feelings of invasion, evaluations of intrusiveness also depend on contextual factors such as culture, family communication norms, and the nature of the parent–child relationship (Hawk et al., 2008; Petronio, 2010). For example, some studies suggest that Chinese youths typically interpret parental requests for information more in terms of caring than in terms of invasion (Chan, 2000), although other research suggests that these two interpretations are not mutually exclusive (Pomerantz & Eaton, 2000; Tang & Dong, 2006). In this sense, there may be a rather narrow range of parental behaviors that reliably prompt strong feelings of invasion across different contexts. Given these complexities, our investigation did not focus on particular parental actions but instead took youths' invasion perceptions as the start-
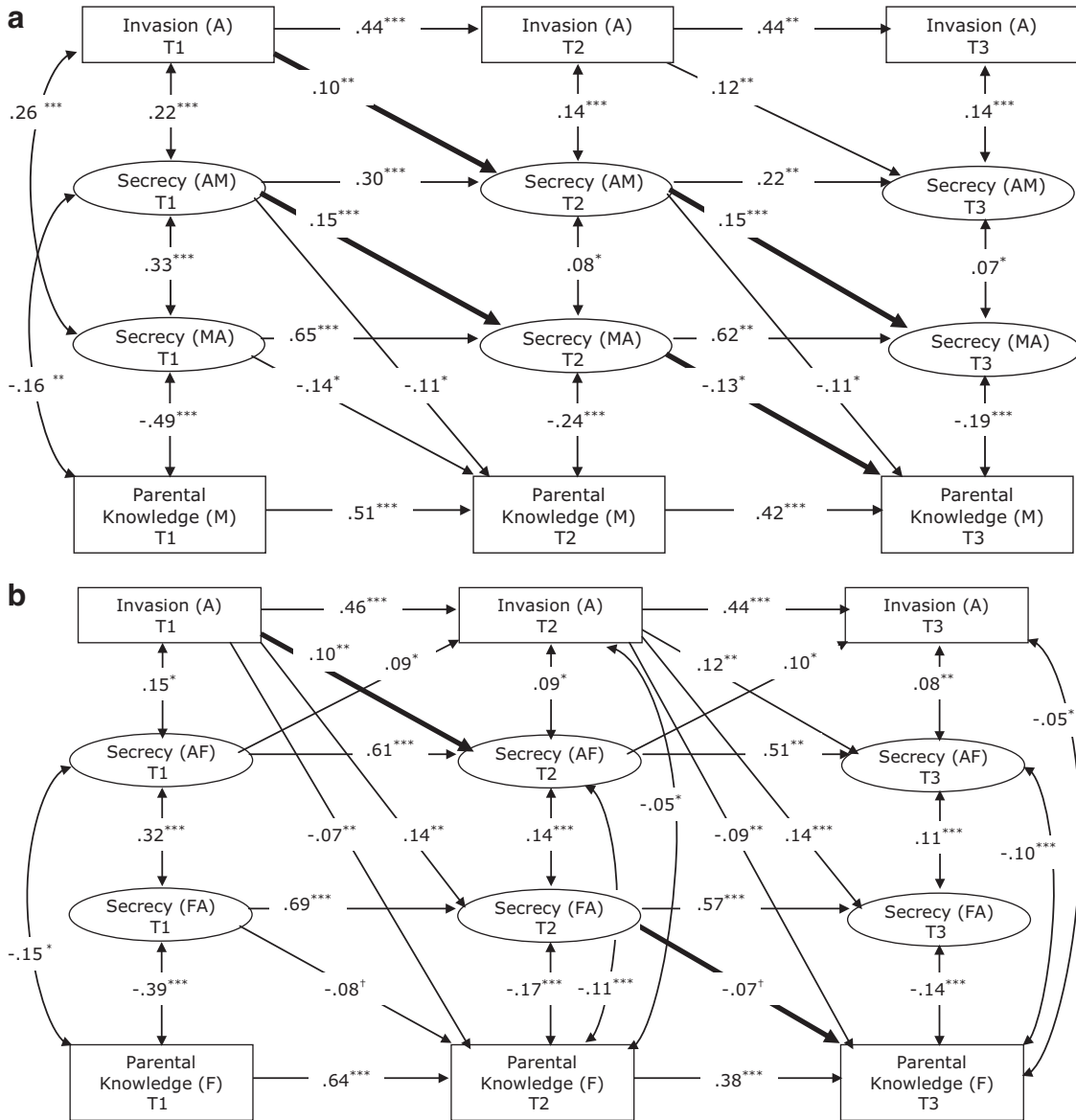
Figure 4. a. Cross-lagged model examining indirect effect of adolescent-reported secrecy from mothers (AM) on mother-reported (M) knowledge, via mothers' suspicion of secrecy (MA) for Time (T)1–T3. Bolded lines indicate the hypothesized mediated paths from privacy invasion to parent-reported secrecy (indirect effect: $B = 0.02$, $SE = 0.01$, $\beta = .01$, $p = .03$) and from adolescent-reported secrecy to parental knowledge (indirect effect: $B = -0.01$, $SE = 0.01$, $\beta = -.02$, $p = .047$). T1–T3 stability paths were additionally included. All variables were controlled for adolescent gender. $\chi^2(123, N = 497) = 180.90^{***}$; comparative fit index (CFI) = .98, root-mean-square error of approximation (RMSEA) = .03, standardized mean square residual (SRMR) = .03. $^* p \leq .05$. $^{**} p \leq .01$. $^{***} p \leq .001$. b. Cross-lagged model examining indirect effect of adolescent-reported secrecy from fathers (AF) on father-reported (F) knowledge, via fathers' suspicion of secrecy (FA) for T1–T3. Bolded lines indicate the hypothesized mediated paths from privacy invasion to parent-reported secrecy and from adolescent-reported secrecy to parental knowledge. No tests of indirect effects were significant. T1–T3 stability paths were additionally included. All variables were controlled for adolescent gender. $\chi^2(123, N = 497) = 172.70^{**}$; CFI = .98, RMSEA = .03, SRMR = .04. $^\dagger p \leq .09$. $^* p \leq .05$. $^{**} p \leq .01$. $^{***} p \leq .001$.

ing point. Nevertheless, future studies could concentrate on actions that may consistently provoke stronger feelings of invasion and also work to identify the conditions (including cultural expectations) under which such perceptions occur in response to more benign and well-intentioned parental behaviors.

Assessing parents' views on privacy invasion also represents an important avenue for future investigation, given that those who assume a legitimate claim to youths' personal information may not recognize when they are overstepping desired boundaries (Petronio, 1994, 2002, 2010). It is also unclear from the present study

whether invasions that go undetected by youths, such as parental snooping, also have negative consequences. Including parents' perspectives on invasion in future research could provide novel data regarding differing opinions on privacy among family members and more complete information about the frequency of parental intrusions and could clarify whether youths' own perceptions are indeed the most important predictor of subsequent negative consequences.

Finally, our measures of secrecy and parental knowledge do not provide extensive information about the issues that actually comprise such communication deficits. Although these scales have been shown to predict a range of adolescent and family outcomes in prior studies, further detailing the content of youths' secrecy and parents' concerns about knowledge might reveal exceptions to our results. For example, when parental invasions actually reveal evidence of problematic conduct, youths' beliefs that parents have a "right to know" about such issues (Laird et al., 2003; Smetana et al., 2006, 2010) may also lead to different responses, compared with when adolescents fully claim personal ownership of information (Petronio, 1994). Examining the extent to which our findings generalize across personal, prudential, and moral domains of knowledge can provide information on whether our results represent normative processes, or arise mainly in the context of more problematic adolescent behavior.

Conclusion

This is the first longitudinal, multi-informant study to address the implications of parental privacy invasion for parents' later knowledge about adolescents and to examine adolescent secrecy as a potential underlying mechanism. The results suggest a paradoxical consequence of parental privacy invasion: while parents may behave intrusively in order to acquire knowledge about their children, adolescents' subsequent secrecy may ultimately promote the opposite outcome. Our findings also suggest that youths' secrecy is a problematic response to invasion, in that these attempts to fortify desired boundaries actually predict stronger feelings of intrusion later on. These findings can provide useful information for families aiming to build mutually satisfactory expectations for privacy and may help them to avoid communication patterns that are detrimental to relationships and adolescents' positive development.

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