VU Research Portal

Longitudinal associations between keeping a secret and psychosocial adjustment in adolescence

Frijns, T.; Finkenauer, C.

published in

International Journal of Behavioral Development
2009

DOI (link to publisher)

[10.1177/0165025408098020](https://doi.org/10.1177/0165025408098020)

document version

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Frijns, T., & Finkenauer, C. (2009). Longitudinal associations between keeping a secret and psychosocial adjustment in adolescence. *International Journal of Behavioral Development*, 33, 145-154.
<https://doi.org/10.1177/0165025408098020>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

vuresearchportal.ub@vu.nl

International Journal of Behavioral Development

<http://jbd.sagepub.com/>

Longitudinal associations between keeping a secret and psychosocial adjustment in adolescence

Tom Frijns and Catrin Finkenauer

International Journal of Behavioral Development 2009 33: 145 originally published online 19 December 2008

DOI: 10.1177/0165025408098020

The online version of this article can be found at:

<http://jbd.sagepub.com/content/33/2/145>

Published by:

<http://www.sagepublications.com>

On behalf of:

[International Society for the Study of Behavioral Development](#)

Additional services and information for *International Journal of Behavioral Development* can be found at:

Email Alerts: <http://jbd.sagepub.com/cgi/alerts>

Subscriptions: <http://jbd.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations: <http://jbd.sagepub.com/content/33/2/145.refs.html>

Longitudinal associations between keeping a secret and psychosocial adjustment in adolescence

Tom Frijns

Utrecht University, the Netherlands

Catrin Finkenauer

VU University Amsterdam, the Netherlands

Increasing bodies of evidence suggest that keeping secrets may be detrimental to well-being and adjustment, whereas confiding secrets may alleviate the detriments of secrecy and benefit well-being and adjustment. However, few studies have addressed the consequences of keeping and confiding secrets simultaneously, and even fewer have done so longitudinally. This article reports on a two-wave longitudinal survey study among 278 adolescents (aged 13–18 years) that examined the associations of keeping and confiding a specific secret with psychosocial adjustment. Results confirmed a hypothesized longitudinal contribution of keeping a secret all to oneself to psychosocial problems, including depressive mood, low self-concept clarity, low self-control, loneliness, and poor relationship quality. Furthermore, confiding versus continuing to keep a secret all to oneself was associated with decreased psychosocial problems after six months, whereas starting to keep a secret versus not doing so was associated with increased psychosocial problems. These results suggest that the keeping or confiding of secrets may affect adolescents' psychosocial well-being and adjustment.

Keywords: adolescence; child adjustment; secrecy; secrets

Secrets are an integral part of adolescents' lives, and keeping secrets has been proposed to facilitate the attainment of several developmental tasks in adolescence (e.g., Finkenauer, Engels, & Meeus, 2002; Watson & Valtin, 1993). Nevertheless, keeping secrets is generally considered to be stressful and burdensome for the secret-keeper, producing negative outcomes such as obsessive thoughts (Lane & Wegner, 1995) and emotional distress (Finkenauer & Rimé, 1998a). Conversely, confiding or revealing secrets is generally considered to alleviate the negative consequences of secrecy and to produce beneficial outcomes (e.g., Kelly, Klusas, von Weiss, & Kenny, 2001; Pennebaker, 1989). Building upon previous findings on the consequences of keeping and confiding secrets, the present study addresses secret-keeping in adolescence. Its objectives are threefold. First, it is aimed at examining whether keeping a secret contributes longitudinally to the prediction of psychosocial problems in adolescence. Second, it is aimed at further investigation of the consequences of confiding a secret by examining changes in psychosocial problems associated with confiding versus continuing to keep a secret all to oneself. Third, it is aimed at further investigation of the consequences of keeping a secret by examining whether adolescents who start keeping a secret experience an increase in psychosocial problems as compared with those who do not.

Terminology

Secrecy can be defined as the intentional concealment of personal information from others (cf. Bok, 1989; Kelly, 2002). As we see it, secrets consist of information that (at least) one person actively and consciously withholds from (at least) one other person. In other words, secrets involve information that

is either withheld or differentially shared between or among people (Karpel, 1980). For present purposes, our principal interest was to examine the consequences of secrets that are kept all to oneself (i.e., that are withheld from everyone). Furthermore, we were interested in examining what happens when adolescents decide to confide in one or more others and share their secret with them. We refer to this act as confiding a secret (cf. Pennebaker, 1990). It has also been called revealing (Kelly & McKillop, 1996), confessing (e.g., Pennebaker, 1989), or disclosing (e.g., Derlega, Metts, Petronio, & Margulis, 1993) a secret. We use the term confiding secrets for two reasons. First, terms like confession or revelation imply lifting the veil of secrecy to make the secret public. However, given the definition, a secret that has been confided remains a secret nonetheless as long as it is concealed from others. Second, confiding secrets emphasizes the presence of a confidant and thus its interpersonal nature. This may seem obvious, but given that much of the research conducted in this area has been limited to written disclosure, it is not a trivial observation.

Secrecy in adolescence

Adolescence, more than any other stage in the life span, deals with the development of self and identity, social relationships, and the self in social relationships (Erikson, 1959, 1968; Hartup, 1996; Paul & White, 1990). Over the course of adolescence, young people need to form a stable sense of self that provides them with a sense of control and a feeling of comfort with who they are and what they want (e.g., Erikson, 1959, 1968; Finkenauer, Engels, Meeus, & Oosterwegel, 2002). They must attain independence from parents (Steinberg & Silverberg, 1986), and keeping secrets from parents may help

them attain emotional autonomy (Finkenauer, Engels, & Meeus, 2002). They must also form and maintain their own social networks outside the family (Grotevant & Cooper, 1986). Developmental tasks in adolescence cause social turmoil: Romantic and sexual relationships gain importance (Paul & White, 1990). Having a friend to confide in becomes a social achievement for adolescents and an indicator of social competence (Buhrmester, 1990; Hartup, 1996). Thus, adolescents may increasingly keep secrets from their parents while confiding mainly in their friends. They may therefore experience the detriments of keeping secrets mainly in their relationship with parents and enjoy the benefits of confiding them mainly in their friendships. In light of the social changes, adolescents become particularly vulnerable to feelings of social inadequacy and failure (Seiffge-Krenke, 1998). They are "sometimes morbidly, often curiously, preoccupied with what they appear to be in the eyes of others" (Erikson, 1959, p. 80). For example, adolescents often feel it is undesirable to admit their shortcomings, because they suffer from "the fallacy of uniqueness" (Pine & Aronson, 1981, p. 35). They falsely assume that "everybody else" is coping effectively and they alone are failing. Thus, increased concern with self-presentation and fear of social rejection may lead adolescents to keep many secrets. They may employ secrecy in an attempt to balance the seemingly incompatible tasks of becoming autonomous and developing (their skills in managing) intimate relationships (e.g., keeping a secret from their parents but confide in their best friend). In doing so, they may be exposing themselves to the harmful consequences of secrecy in an already vulnerable developmental period.

Detriments of keeping secrets

Keeping secrets is an effortful process. It requires constant active monitoring and inhibition or suppression of one's thoughts, feelings, and behavior to avoid revelation. This inhibition requires physiological work that, in and of itself, is stressful (Pennebaker, 1989). Continued active inhibition is suggested to serve as a cumulative stressor that increases the probability of stress-related psychological problems (Pennebaker, 1989, 1997). Inhibition and thought suppression may also prevent full processing of the secret information and cause thought intrusion, which may subsequently lead to mental rumination and obsessive preoccupation with the secret (Lane & Wegner, 1995; Pennebaker, 1989) and may ultimately cause psychopathology (Wegner & Lane, 1995). An important consequence of keeping a secret is that one is never exposed to another person's perspective, resulting in a closed system of obsessive and disordered secret-related thoughts and distorted (self-)perceptions that are never challenged (Newth & Rachman, 2001; Pennebaker, 1997; Wegner & Lane, 1995). Keeping secrets prevents adolescents from organizing and assimilating the secret information into the self and may thus thwart self-clarification and self-understanding (e.g., Derlega et al., 1993; Pennebaker, 1989, 1997). Keeping a secret may thus undermine adolescents' sense of self, self-worth, and control over their lives. For example, one study among adolescents found that keeping secrets from parents is associated with reduced self-control (Frijns, Finkenauer, Vermulst, & Engels, 2005). Furthermore, because certain people, situations, and conversation topics will be avoided in the attempts to conceal secrets, secrecy may deprive a person of social support and validation and cause social isolation or feelings of

loneliness (e.g., Brown & DeMaio, 1992; Grolnick, 1983; Imber-Black, 1993; Jung, 1961).

Research among adults provides evidence of secrecy's disadvantages (e.g., Cole, Kemeny, Taylor, & Visscher, 1996; Finkenauer & Rimé, 1998b; Ichiyama et al., 1993; Kelly & Achter, 1995; Lane & Wegner, 1995; Larson & Chastain, 1990; Major & Gramzow, 1999; Pennebaker & Susman, 1988). For example, concealment of homosexual identity among HIV-seropositive gay men has been associated with increased depressive symptoms and strained social relationships (Cole et al., 1996; Ullrich, Lutgendorf, & Stapleton, 2003). Recent research among adolescents has shown that keeping secrets from parents is associated with psychosocial and behavioral maladjustment and contributes to problems in the long run (Finkenauer, Engels, & Meeus, 2002; Frijns et al., 2005), whereas disclosure to parents is linked with increased adjustment (Kerr & Stattin, 2000; Stattin & Kerr, 2000).

It should be noted that, given the cross-sectional nature of much of the available research, it is possible that the causality in the link between secrecy and psychosocial maladjustment is actually reversed. That is, adjustment problems or strained social relations may lead adolescents to keep secrets. For instance, adolescents with low self-esteem, depressive feelings or an unstable view of themselves may be inclined to keep these failings and insecurities secret to fit in and not be ridiculed (e.g., Pachankis, 2007; Seiffge-Krenke, 1998). Also, characteristics of adolescents' relationships and perceptions of relational partners, such as the degree to which adolescents think of their parents as being trustworthy or accepting, may influence adolescent secret-keeping (e.g., Finkenauer, Engels, & Meeus, 2002; Smetana, Metzger, Gettman, & Campione-Barr, 2006). Rather than a determinant, secrecy may thus be a symptom of adjustment problems and problematic interpersonal relations.

Benefits of confiding secrets

Confiding secrets has been proposed to alleviate the negative consequences of secrecy described above and to help a person to assimilate and make sense of the secret information (Kelly & McKillop, 1996; Pennebaker, 1989, 1997). Confiding a secret breaks the repetitive cycle of thought suppression and intrusion, reduces the stress of constant inhibition, and should thus enhance physical and psychological well-being. Talking about a secret with a confidant may help a person to give meaning to the secret and gain self-understanding and control, as confidants may give helpful feedback or provide support (Kelly & McKillop, 1996). In a large amount of research, talking or writing about upsetting or traumatic experiences as opposed to concealing them has been associated with improved psychological well-being (e.g., Francis & Pennebaker, 1992; Greenberg, Wortman, & Stone, 1996; for a review, see Smyth, 1998). Furthermore, confiding secrets may benefit interpersonal relationships and social bonds (e.g., Christophe & Rimé, 1997; Collins & Miller, 1994; Pennebaker, Zech, & Rimé, 2001). Confiding secrets may create and maintain intimacy and relatedness in interpersonal relationships (Bellman, 1984; Karpel, 1980; Richardson, 1988; Simmel, 1950; Vangelisti, 1994; Van Manen & Levering, 1996). According to Bellman (1984), feelings of intimacy and relatedness caused by confiding secrets are far more intense than those that are created by any other type of disclosure. In this view, confiding secrets is important in establishing and consolidating friendships.

The outcome of confiding secrets will likely depend on whom adolescents choose to confide in and how this person reacts to the disclosure (Kelly et al., 2001; Kelly & McKillop, 1996). Research on resiliency suggests that the availability of caring parents, prosocial adults outside the family, or friends to confide in may all serve a protective function for adolescents' adjustment (e.g., Masten & Coatsworth, 1998). Finding an appropriate confidant is important because confiding in the "wrong" person might provoke aversive reactions which will only make things worse (e.g., Buhrmester & Prager, 1995; Kelly & McKillop, 1996). Adolescents increasingly favor peers over parents as confidants (Buhrmester & Prager, 1995) and peers may serve a protective role in adolescent development (Hartup, 1996). Thus, an adolescent who (only) confides in adults might not necessarily experience the (social) benefits of confiding secrets (e.g., Hartup, 1996; Masten & Coatsworth, 1998).

Hypotheses

On the basis of the literature and propositions discussed above, we formulated three main hypotheses. First, based on previous findings and theorizing on secrecy, we predicted that keeping a secret should contribute longitudinally to psychosocial problems in adolescence. We believe this link to be causal, but as discussed above, the causality in the link between secret-keeping and psychosocial problems could also be reversed. That is, psychosocial problems may lead adolescents to keep secrets. The present longitudinal study provides a unique opportunity to compare these two alternative causal pathways. We predicted that the longitudinal contribution of secrecy to psychosocial problems should be greater than the longitudinal contribution of psychosocial problems to predicting secrecy. Second, we predicted that the psychosocial well-being of adolescents who confide their secret should improve as compared with those who do not confide their secret. Finally, we predicted that adolescents who start keeping a secret should experience an increase in psychosocial problems as compared with those who do not. We investigated the links between keeping and confiding secrets and a wide range of psychosocial variables, including indicators of psychological well-being (i.e., depressive mood, self-esteem), indicators of a stable sense of self (i.e., self-concept clarity, self-control), and indicators of social well-being (i.e., loneliness, quality of relationships with parents and friends). Because differences between adolescent boys and girls are commonly found in both communication (e.g., Buhrmester & Prager, 1995) and psychosocial problems (e.g., Hankin & Abramson, 1999), we will examine gender differences as well. The present study is the first to longitudinally investigate the correlates of keeping a secret in adolescence. It contributes to the existing literature by addressing the issue of causality in the links between keeping a secret and psychosocial well-being. It further contributes to the existing literature by examining the consequences of both starting to keep a secret and confiding a secret that has been kept all to oneself.

Method

Sample characteristics and procedure

The sample used in this study consisted of 278 adolescents, 119 (42.8%) boys and 159 girls, enrolled in secondary

education. The mean age of the adolescents at T1 was 15.6 years ($SD = 0.99$). Most adolescents ($N = 251$, 90.3%) were of Dutch nationality. The majority of the adolescents ($N = 228$, 82.0%) lived with two parents, 13.3% lived with their mother, 1.4% lived with their father, and 3.3% lived with other family members or in institutions.

Data for analyses were derived from a larger research project on communication and concealment in adolescence. As a part of this project, a total of three schools in the Netherlands participated in a two-wave longitudinal survey study. Before the questionnaires were administered, parents were informed about the aims of the study and could return a form stating that they did not want their child to participate (although some parents requested additional information, none of the parents returned this form).

The first wave of data collection (T1) was conducted in the winter of 2001, and the second wave of data collection (T2) was conducted 6 months after T1 in the summer of 2002. At both waves, the questionnaires were filled out in the classrooms in the presence of either the principal researcher or a teacher, who had received instructions on how to administer the questionnaire. Confidentiality and anonymity were rigorously respected. Adolescents were given one hour to complete the questionnaire and all managed to finish within the hour. Adolescents received no reward for their participation in the study. No explicit refusals were recorded; non-response was exclusively due to the adolescent's absence at the day of assessment.

Initially, 448 adolescents provided complete data. Because of privacy concerns, we were unable to provide participants at T2 with the answers concerning secret-keeping and the description of their secret they provided at T1. We therefore asked participants at T2 to recall their original response. The recall of 170 participants did not match their original response (i.e., 42 did not recall having a secret, 116 recalled a secret they did not originally report, and 12 could not recall their original answer). To safeguard the interpretability of the results, we excluded the data of these participants from our analyses. This study is based on the remaining 278 (62.1%) adolescents who provided complete and consistent data at both waves. Comparisons between the final sample and the excluded participants yielded no significant differences in any demographic or psychosocial variables.¹

Questionnaires

At T1, all participants were given a broad definition of secrets in writing that emphasized that a secret concerns information that is intentionally concealed from others (cf. Bok, 1989; Kelly, 2002). The principal researcher or an instructed teacher was available for further clarification of this definition if necessary. Although some adolescents asked questions about the definition, none disputed or modified it and no comments suggesting a divergent interpretation of what a secret is were

¹ We also compared the secrets of participants who did not recall their secret with those of participants who correctly recalled their secret. At T1, we asked participants to report on a number of qualities of their secret, including how personal, important, and serious their secret was, and how long they had been keeping their secret. None of these secret-characteristics differentiated between recalled and not-recalled secrets, although participants who recalled their secret had been keeping it marginally longer than those who did not recall their secret, $t(51) = 1.93$, $p = .059$.

noted. Because we were interested in secrets that had not previously (i.e., prior to our study) been disclosed to or shared with others, participants were asked to bring to mind a secret that they "have never talked about or shared with anyone." To assess whether they were currently keeping a secret all to themselves, participants were asked to check either "Yes, I am keeping a secret all to myself at this time" or "No, I am not keeping a secret all to myself at this time." If they were keeping more than one secret all to themselves, they were asked to select the secret that was most important to them.

At T2, participants were asked about the status of their secret. Those who had reported not keeping a secret all to themselves at T1 now indicated whether they were currently keeping such a secret (*yes* or *no*), whereas those who had reported keeping a secret all to themselves at T1 now indicated whether they had shared their secret with anyone in the meantime (*yes* or *no*). If they had shared their secret, they were asked to indicate with how many people they had shared their secret (1 = 1 person; 4 = 4 persons or more) and to identify their relationship with the person(s) with whom it had been shared (i.e., *best friend, a friend, mother, father, other family member, partner, acquaintance, teacher, and other*).

Depressive mood. Kandel and Davies' (1982) 6-item Kandel Depression Scale was used to assess depressive mood. Participants rated the frequency (0 = *never*; 4 = *always*) with which they experienced symptoms of depressive mood (e.g., "During the past 6 months, how often have you felt nervous or tense?"; "During the past 6 months, how often have you felt unhappy, sad, or depressed?"). Their responses were averaged to yield a depressive mood score; higher values indicated more frequent feelings of depression (Cronbach's $\alpha = .79$ and $.82$ at T1 and T2, respectively).

Self-esteem. Rosenberg's (1965) self-esteem scale assessed participants' perceived self-value or sense of worth (e.g., "Sometimes I feel that I am completely useless," "In general I am happy with myself"). This scale is often taken as an indicator of psychosocial adjustment among adolescents (Kahle, Kulka, & Klingel, 1980). It consists of 10 items and responses were given on a scale ranging from 1 (*very descriptive of me*) to 4 (*not at all descriptive of me*). Responses were averaged to yield a self-esteem score with higher values indicating higher self-esteem. In our study, this scale had high internal consistency (Cronbach's $\alpha = .86$ and $.88$ at T1 and T2, respectively).

Self-concept clarity. The self-concept clarity scale developed by Campbell et al. (1996) assesses the extent to which participants' self-beliefs are clearly and confidently defined, internally consistent, and stable. The scale consists of 12 items rated on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Item examples are "My beliefs about myself often conflict with one another" or "Even if I wanted to, I don't think I could tell someone what I'm really like." Responses were averaged to yield a self-concept clarity score with higher values indicating greater clarity. In our study, the internal consistency of the scale was Cronbach's $\alpha = .82$ and $.86$ at T1 and T2, respectively.

Self-control. To assess self-control, a shortened version of the self-control scale developed by Tangney, Baumeister, and Luzio Boone (2004) was employed. The self-control scale aims to assess adolescents' ability to control their impulses, alter

their emotions and thoughts, and to interrupt undesired behavioral tendencies and refrain from acting on them (for a review of the conceptualization, see Muraven & Baumeister, 2000; for information on the reliability of the Dutch translation, see Van Duijn, 2000; Van Kooten, 2000). The shortened version consists of 8 items rated on a scale ranging from 1 (*not at all*) to 5 (*very much*). Item examples are "I have trouble concentrating" (reverse scored) or "I am lazy" (reverse scored). Responses were averaged to yield a self-control scale with higher values indicating greater feelings of self-control. In our study, the internal consistency of the shortened scale was Cronbach's $\alpha = .71$ and $.77$ at T1 and T2, respectively.

Loneliness. Loneliness was assessed using a shortened version of the revised UCLA Loneliness scale (Russell, Peplau, & Cutrona, 1980), which was translated into Dutch using a translation-back-translation procedure. The scale consists of 10 statements concerning the extent to which adolescents feel lonely (e.g., "I feel left out," "I feel isolated from others"). Participants rated the items on a scale ranging from 1 (*not at all true for me*) to 5 (*very true for me*). Responses were averaged to yield a loneliness score; higher values indicated greater feelings of loneliness (Cronbach's $\alpha = .86$ and $.87$ at T1 and T2, respectively).

Quality of relationships with friends and parents. To assess the quality of the relationships with their parents and friends, participants rated how they felt about their relationships with parents and friends in 10 adjectives (e.g., good, pleasant, valuable, difficult (reverse scored), cf. Campbell, Converse, & Rodgers, 1976). We chose this measure, because it does not refer to interpersonal behaviors related to communication (e.g., "I can talk openly with this person") as do most of the commonly used relationship satisfaction questionnaires (e.g., Locke & Wallace, 1959). It thereby reduces the risk of the scale yielding artificially high correlations with measures of secrecy and disclosure (see Fincham & Bradbury, 1987, for a detailed discussion). Participants rated both relationships on 5-point scales (e.g., 1 = *not at all*; 5 = *very much*). In our study, the internal consistencies were high (Cronbach's $\alpha = .92$ and $.91$ for quality of relationship with parents, and $.87$ and $.88$ for quality of relationship with friends). Participants' ratings were averaged to establish two relationship quality scores; higher values on these scores indicated greater quality of the relationship.

Results

Descriptives

At T1, 101 participants (36.3%) reported keeping a secret to themselves, whereas 177 participants reported not keeping such a secret. Of the participants who reported not keeping a secret at T1, 146 (82.5%) still had no secret to report at T2, whereas 31 reported keeping a secret at T2. Of the participants who reported keeping a secret at T1, 48 (47.5%) reported that they were still keeping their secret, while 53 reported that they had confided their secret. Of the secrets that were confided, 26 (49.1%) were shared with one confidant, 15 (28.3%) were shared with two people, 2 (3.8%) were shared with three people, and 7 (13.2%) were shared with four persons or more.

Confidants of secret-keepers

It appears that secret-keepers predominantly confide their secrets to close others. Best friends ($N = 29$, 54.7%) were the most frequently mentioned confidants, followed by friends ($N = 14$, 26.4%) and partners ($N = 14$, 26.4%). Other frequently mentioned categories of confidants were family members, with mothers ($N = 13$, 24.5%) mentioned most frequently, followed by fathers ($N = 6$, 11.3%) and other family members ($N = 6$, 11.3%). Acquaintances ($N = 1$, 1.9%), teachers ($N = 0$), and others ($N = 2$, 3.8%) were rarely mentioned. Other confidants who were mentioned included ex-boyfriend and school dean.

Examining gender differences

In adolescence, many gender differences are found in communication (e.g., Buhrmester & Prager, 1995; Youniss & Smollar, 1985), as well as in psychosocial problems (e.g., Campbell, Byrne, & Baron, 1992; Hankin & Abramson, 1999; Kandel & Davies, 1982). Therefore, we examined gender differences in secrecy by performing χ^2 -tests to compare the percentages of boys versus girls who reported keeping and confiding a secret. Data for the outcome variables assessed at both waves were analyzed using 2 (gender) $\times$ 2 (wave) mixed design ANOVAs. Main effects for gender will be reported.

Secrets were more prevalent among girls ($N = 67$, 42.1%), $\chi^2(1) = 5.42$, $p = .020$, than among boys ($N = 34$, 28.6%), but girls did not confide their secret more often than boys. When they did confide their secret, girls more often chose their best friend as a confidant ($N = 25$, 64.1%), $\chi^2(1) = 5.25$, $p = .022$, than boys did ($N = 4$, 28.6%).

Overall, female adolescents reported higher levels of depressive mood, $F(1,268) = 25.55$, $p = .000$, than did their male counterparts. Female adolescents also reported lower levels of self-esteem, $F(1,269) = 5.93$, $p = .016$, and lower levels of self-concept clarity, $F(1,259) = 13.50$, $p = .000$, than did male adolescents. Finally, female adolescents reported higher quality of the relationship with friends, $F(1,264) = 4.97$, $p = .027$, than did male adolescents. No gender differences emerged for self-control, loneliness, or quality of the relationship with parents.

To examine gender differences in the associations between keeping or confiding a secret and psychosocial adjustment, all

the analyses reported below were also conducted with gender as a factor or predictor of psychosocial adjustment. None of these analyses yielded a significant interaction between gender and keeping or confiding a secret, nor did the inclusion of gender alter the pattern of results. We will therefore report on the analyses conducted without gender and will address gender differences in the discussion.

Is secret-keeping related to psychosocial problems?

Table 1 provides data on the means and standard deviations of the variables assessed in this study. To examine whether secret-keeping is related to psychosocial problems, we performed t tests on these variables at T1 and T2, comparing those participants who had reported keeping a secret (at T1) and those who had reported not keeping a secret. Those who were keeping a secret at T1 reported more depressive mood, lower self-esteem, lower self-concept clarity, lower self-control, and poorer quality of the relationship with parents at T1 than those who were not keeping a secret at T1. They also reported more depressive mood, lower self-esteem, lower self-concept clarity, lower self-control, more loneliness, and poorer quality of the relationship with parents at T2 than those who were not keeping a secret at T1. The quality of the relationship with friends did not differ between participants who were or were not keeping a secret at T1, neither at T1 nor at T2. Thus, we found both cross-sectional and longitudinal differences in psychosocial problems depending on whether or not adolescents were keeping a secret.

Longitudinal prediction of psychosocial problems

Table 2 presents the correlation matrices for the variables assessed in this study. As can be seen, concurrent associations were found among all psychosocial variables, both at T1 and at T2. Furthermore, all psychosocial variables showed high stability over the six-month interval between measurements. To examine the longitudinal contribution of keeping a secret to psychosocial problems, we conducted regression analyses on the psychosocial variables at T2, while controlling for these variables at T1. Accordingly, we entered the psychosocial variables at T1 into the equation in the first step of each of the regression analyses. In the second step, we added

Table 1
Means and standard deviations of the assessed variables

Variable	T1						T2					
	Secret		No secret		Total sample		Secret at T1		No secret at T1		Total sample	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Depressive mood	2.75	0.66	2.25***	0.70	2.43	0.72	2.69	0.70	2.22***	0.71	2.39	0.74
Self-esteem	3.11	0.54	3.36***	0.49	3.27	0.52	3.13	0.61	3.38***	0.52	3.29	0.57
Self-concept clarity	3.15	0.61	3.65***	0.69	3.47	0.70	3.20	0.73	3.66***	0.58	3.49	0.68
Self-control	3.10	0.65	3.29*	0.61	3.22	0.63	3.05	0.52	3.36***	0.61	3.25	0.60
Loneliness	1.80	0.60	1.69	0.58	1.73	0.59	1.88	0.68	1.68**	0.55	1.75	0.61
Relationship quality												
parents	3.87	0.88	4.20**	0.68	4.08	0.77	3.88	0.77	4.25***	0.64	4.12	0.71
friends	4.26	0.56	4.34	0.53	4.31	0.54	4.20	0.59	4.32	0.54	4.28	0.56

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2*Correlation matrices of the assessed variables*

Variable	1	2	3	4	5	6	7
1. Depressive mood	.60***	-.56***	-.55***	-.50***	.48***	-.55***	-.26***
2. Self-esteem	-.54***	.71***	.61***	.52***	-.56***	.49***	.40***
3. Self-concept clarity	-.58***	.56***	.66***	.61***	-.49***	.49***	.38***
4. Self-control	-.53***	.45***	.57***	.71***	-.33***	.52***	.25***
5. Loneliness	.34***	-.53***	-.37***	-.28***	.65***	-.48***	-.62***
6. Relational quality parents	-.44***	.44***	.31***	.35***	-.40***	.65***	.37***
7. Relational quality friends	-.32***	.46***	.38***	.24***	-.68***	.32***	.51***

Note. Values below the diagonal represent correlations at T1, those above the diagonal represent correlations at T2, and values on the diagonal represent correlations between the dependent variables at T1 and at T2.

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

secret-keeping into the equation to assess its relative contribution to the prediction of psychosocial well-being.

Tables 3 and 4 provide summaries of the results of these analyses. In each of the analyses, the corresponding T1 variable predicted the psychosocial T2 variable when entered in Step 1, and remained the strongest predictor in the second step, explaining between 26 and 51% of the variance. Thus, psychosocial well-being was rather stable over time. Above and beyond this stability, keeping a secret predicted depressive mood, self-concept clarity, self-control, loneliness, and quality of the relationship with parents. In line with our predictions, all these associations were in the direction of lower psychosocial well-being when keeping a secret. Keeping a secret did not contribute significantly to the longitudinal prediction of self-esteem and the quality of the relationships with friends.

Longitudinal prediction of secret-keeping

To examine the plausibility of an opposite causal direction, that is, of psychosocial problems causing secrecy, we performed binary logistic regression analyses on secret-keeping at T2 with the psychosocial variables at T1 as predictors. To control for secret-keeping at T1, it was entered into the equation in the first step before adding the psychosocial variable in the second step. None of the psychosocial variables significantly predicted whether participants kept a secret at T2. We also performed binary logistic regression analyses separately for participants who reported keeping a secret at T1 and those who reported not keeping a secret at T1. None of the psychosocial variables significantly predicted whether non secret-keepers would have started to keep a secret at T2.

Table 3*Summary of hierarchical multivariate regression analyses for psychosocial well-being*

Variable	Depressive mood			Self-esteem			Self-concept clarity			Self-control		
	B	β	R ²	B	β	R ²	B	β	R ²	B	β	R ²
Step 1			.36***			.50***			.44***			.51***
Variable at T1	.62	.60***		.77	.71***		.64	.66***		.69	.71***	
Step 2			.37***			.50***			.45***			.53***
Variable at T1	.58	.56***		.75	.70***		.61	.62***		.67	.69***	
Secret-keeping	.18	.12*		-.06	-.05		-.15	-.11*		-.18	-.14**	

Note. Variable secret-keeping is coded such that a high value indicates keeping a secret.

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

Table 4*Summary of hierarchical multivariate regression analyses for psychosocial well-being*

Variable	Loneliness			Relationship quality parents			Relationship quality friends		
	B	β	R ²	B	β	R ²	B	β	R ²
Step 1			.42***			.42***			.26***
Variable at T1	.67	.65***		.60	.65***		.53	.51***	
Step 2			.43***			.44***			.26***
Variable at T1	.66	.64***		.58	.62***		.52	.50***	
Secret-keeping	.13	.10*		-.21	-.14**		-.07	-.06	

Note. Variable secret-keeping is coded such that a high value indicates keeping a secret.

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

Among secret-keepers, loneliness significantly predicted whether they would have confided their secret at T2 (Wald = 4.13 $p = .042$), with a greater probability of having confided the secret at T2 when loneliness was low at T1. None of the other psychosocial variables predicted confiding.

Examining change over time

To examine whether confiding and starting to keep a secret are linked with changes in psychosocial well-being, we performed 2 (secret-status) $\times$ 2 (wave) mixed design ANOVAs. We divided participants into two groups based on whether they had reported keeping a secret at T1. For secret-keepers, the between-subjects variable was whether they had confided their secret to anyone at T2. For non secret-keepers, the between-subjects variable was whether they were keeping a secret at T2.

None of the psychosocial adjustment measures showed overall change between the two waves, which again reflects that psychosocial well-being is rather stable over time. However, participants who confided their secret evidenced a decrease in depressive mood, $F(1,94) = 7.15$, $p = .009$, and increases in self-concept clarity, $F(1,93) = 4.46$, $p = .037$, and self-control, $F(1,94) = 4.23$, $p = .043$, as compared with those who did not confide their secret. Participants who took up keeping a secret, on the other hand, showed a significant increase in depressive mood, $F(1,171) = 7.96$, $p = .005$, and significant decreases in self-esteem, $F(1,172) = 10.26$, $p = .002$, and self-concept clarity, $F(1,163) = 4.06$, $p = .046$, as compared with those who were still not keeping a secret. No significant differences were found in changes in any of the other psychosocial variables.

Discussion

The present research addressed the ramifications of secrecy beyond people's feelings and evaluations concerning secret information and examined whether keeping and confiding a specific secret have any bearing on more general measures of well-being and adjustment. It examined the longitudinal contribution of keeping a secret to psychosocial problems in adolescence and investigated changes in psychosocial well-being associated with confiding and starting to keep a secret. This study is one of the first to investigate secret-keeping in adolescence. To our knowledge, it is the first study to provide evidence of the detrimental consequences of keeping a secret all to oneself and of the benefits of confiding such a secret. It is also the first study to address the issue of causality in the associations between keeping a secret and psychosocial well-being. Its results can be summarized as follows.

Above and beyond concurrent psychosocial well-being, keeping a secret contributed longitudinally to psychosocial problems in adolescence, including depressive mood, low self-esteem, low self-concept clarity, low self-control, loneliness, and poor quality of the relationship with parents. Thus, consistent with our predictions, adolescents who reported keeping a secret all to themselves also reported more psychosocial problems six months later. Psychosocial problems could not, however, predict whether adolescents would be keeping a secret six months later. The only significant association we found was between loneliness and confiding a secret. That is, the more lonely adolescents who kept a secret were, the less likely they were to confide their secret. In line with our prediction, these results seem to favor a causal direction of these

associations from secret-keeping to psychosocial problems. Furthermore, participants who reported having confided their secret showed an increase in psychosocial well-being, including decreased depressive mood, increased self-concept clarity, and increased self-control, as compared with those who continued to keep their secret all to themselves. Thus, participants seemed to benefit from confiding their secret. Conversely, participants who started to keep a secret showed a decrease in psychosocial well-being, including increased depressive mood, decreased self-esteem, and decreased self-concept clarity, as compared with those who were still not keeping a secret. These findings provide additional evidence that keeping a secret may be detrimental to well-being.

Although we found gender differences in secret-keeping and psychosocial adjustment, we found no evidence of gender differences in the links between keeping or confiding a secret and psychosocial adjustment. That is, despite a higher prevalence of secrets among adolescent girls, they were no more or less affected by keeping or confiding a secret than were boys. Given that our investigation focused on keeping one specific secret, it is of course possible that gender differences would emerge when examining the extent to which adolescents keep secrets.

It should be noted that the longitudinal contribution of keeping a secret to psychosocial problems was small. The effect sizes obtained in the analyses of confiding and starting to keep a secret were equally small. Given that the two measurement points were only six months apart, this suggests that the contribution of keeping a secret to psychosocial (mal)adjustment may be relatively short-lived. However, the short interval also meant a high stability in psychosocial adjustment. Thus, the fact that a relatively small aspect of adolescents' lives, namely keeping one specific secret, contributed significantly to the longitudinal prediction of several indicators of psychosocial well-being that are influenced by a wide variety of factors in everyday life, makes secret-keeping a potentially relevant factor in the occurrence and persistence of psychosocial problems. As such, the present findings have important implications for counselors and more generally for everybody involved with adolescents. They underline the importance of recognizing the burden that secrets may impose on adolescents, and attest to the mitigating effects of confiding one's secrets (cf. Kelly & McKillop, 1996).

Though the general pattern of results is in line with our predictions, a number of findings require explanation. We found no links whatsoever between keeping or confiding secrets and the quality of the relationship with friends, but we did find a negative link between keeping a secret and the quality of the relationship with parents. This could indicate that adolescents simply do not keep many secrets from their friends, but keep secrets mainly from their parents. Additionally, these findings may indicate that peer relationships do not suffer from secret-keeping as much as adolescent–parent relationships do (see also Finkenauer, Engels, & Meeus, 2002; Frijns et al., 2005). Building friendships and establishing a social network outside the family is an important developmental task in adolescence (e.g., Cotterell, 1996), a task that may simply not be compatible with keeping secrets from friends. In contrast to these horizontal peer relationships, parent–child relationships are mainly vertical. As a rule, parents have the upper hand as they have more knowledge and social power than their children (Russell, Pettit, & Mize, 1998). Keeping secrets from parents provides adolescents with a way to evade punishment, criticism, and embarrassment (cf. Guerrero & Afifi, 1995; Marshall,

Tilton-Weaver, & Bosdet, 2005). There is some evidence that adolescents may employ secrecy from parents as a means to become independent from them (Finkenauer, Engels, & Meeus, 2002). When adolescents start to keep secrets from their parents, this may indicate changes in the relationship. Parents may resent their child keeping secrets from them and read it as indicating that their child does not trust them any more (Finkenauer, Frijns, Engels, & Kerkhof, 2005; Kerr, Stattin, & Trost, 1999). Negative parental reactions and the ensuing cycle of mutual distrust will be detrimental to the quality of the adolescent–parent relationship.

Though keeping a secret contributed longitudinally to feelings of loneliness and reduced quality of the relationship with parents, confiding or starting to keep a secret yielded no changes in these variables. It is likely that confiding a secret may only affect the quality of the relationship with parents when it is confided to one's parents. Similarly, starting to keep a secret all to oneself may affect the quality of the relationship with parents only if parents are the primary secret-targets. Alternatively, given the longitudinal contribution of keeping a secret to relationship quality, starting to keep a secret may indicate the onset of changes in the relationship with parents, but it may take some time before relationship quality is affected. In a similar vein, feelings of loneliness may be affected depending on how close primary secret-targets or confidants are to the secret-keeper. Unfortunately, we did not examine who the primary targets of participants' secrets were, and although we assessed who participants chose as confidants, insufficient sample size precluded analysis of differences across confidants. Examining how the consequences of keeping and confiding secrets may vary across different targets and confidants presents a challenge for future research.

Limitations and suggestions for future research

By nature, secrets are elusive. People consciously and actively conceal their secrets from others and may even bury them so deep inside as to elude even themselves. Any attempt to study secrecy therefore faces selection biases. Though our emphasis on privacy and anonymity probably diminished selection biases, it also contributed to them. Many adolescents did not recall their original answers concerning secret-keeping, resulting in a considerable loss of participants for our analyses. This loss might have been less had we provided participants with their original answer, but the fact that so much incorrect recall was recorded also raises some interesting questions. What makes adolescents apparently forget about their secret? Are some of them so successful at suppressing thoughts of their secret that they forget about it altogether, or are some (types of) secrets simply more forgettable than others? And what makes adolescents recall a secret that they did not originally report? Did our snapshot measurement simply miss secrets that participants started keeping soon thereafter, or are people unwilling to acknowledge the existence of a secret even in an anonymous setting, perhaps reporting it only in retrospect after it has been confided?

The relatively short interval of six months between measurements limits the conclusions that may be drawn from our data. Our findings concern short-term differences and as such underline short-term (dis)advantages of keeping and confiding secrets. No conclusions about long-term links between secrecy and psychosocial adjustment can be derived from our results. The contribution of keeping a secret to psychosocial

(mal)adjustment may be short-lived, as suggested above, or it may increase longitudinally as the burden of keeping a secret all to oneself grows over time. This, however, remains a matter for further investigation. Nor can our findings shed light on the developmental course of keeping secrets in adolescence. Whether secrecy peaks in adolescence and how the linkages between keeping and confiding secrets and psychosocial well-being evolve over the course of adolescence are also questions for future research.

Our investigation of secrecy focused on the consequences of keeping and confiding secrets. Though our hypotheses were based on theoretical propositions concerning the consequences of secrecy, we did not explicitly investigate the mechanisms underlying the associations between keeping and confiding secrets and psychosocial well-being. In our investigation of confiding secrets we examined whom adolescents chose as confidants. We did not, however, examine how they selected a confidant or whether the effect of confiding secrets varied across confidants. Nor did we examine who the main targets of secrecy were. It is conceivable that the impact of keeping secrets depends on from whom they are kept and with whom they are shared (cf. Kelly & McKillop, 1996). Confidants may be especially important in determining the (interpersonal) effects of secrecy. Whether confiding a secret produces positive outcomes likely depends on the specific confidant(s) and their reaction to the disclosure. Confiding in the "wrong" person might provoke aversive reactions which will only make things worse. Finally, we did not assess the content of adolescents' secrets. Although we discussed secrecy's psychosocial implications for the secret-keeper independent of the secret content, there is little doubt that the secret content may contribute to these consequences. The secret content may vary considerably in terms of importance and severity. To illustrate, secrecy about incest is likely to affect adolescents' psychosocial well-being much more severely than secrecy about one's first kiss. However, to our knowledge, there is no empirical research investigating the effects of the content of a secret on psychological and relational well-being.

Although our research examined the plausibility of the proposed relationships of keeping and confiding a secret with psychosocial well-being, a number of issues call for caution when drawing conclusions on the causal direction of the observed associations. First, our study used a dichotomous measure of secret-keeping and continuous psychosocial measures. Therefore, we were unable to examine the strengths of the alternative causal directions simultaneously. Second, although the relevant measures were obtained at two waves of data collection, which strengthens the case for causality, our results do not provide definite proof of causality. Third, because there was no experimental control over participants' decision to confide their secret or to start keeping a secret, the associations of these actions with psychosocial well-being carry no clues regarding their causal direction. That is, increases in psychosocial well-being may have caused secret-keepers to confide their secret or decreases in well-being may have caused non secret-keepers to start keeping a secret.

Despite these shortcomings, our study provides potent evidence to suggest that keeping secrets does not come free of charge. Findings further suggest that confiding one's secrets may help to minimize the costs of secret-keeping. The secrets that adolescents keep or confide may affect psychosocial well-being and adjustment. Given this evidence, it would be worthwhile to further investigate the price that adolescents pay for

keeping secrets and the extent to which confiding secrets may minimize these costs of secrecy.

References

- Bellman, B. (1984). *The language of secrecy*. New Brunswick, NJ: Rutgers University Press.
- Bok, S. (1989). *Secrets: On the ethics of concealment and revelation*. New York: Vintage Books.
- Brown, L.K., & DeMaio, D.M. (1992). The impact of secrets in Hemophilia and HIV disorders. *Journal of Psychological Oncology*, 10, 91–101.
- Buhrmester, D. (1990). Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. *Child Development*, 61, 1101–1111.
- Buhrmester, D., & Prager, K. (1995). Patterns and functions of self-disclosure during childhood and adolescence. In K. Rotenberg (Ed.), *Disclosure processes in children and adolescents* (pp. 10–56). New York: Cambridge University Press.
- Campbell, A., Converse, P.E., & Rodgers, W.L. (1976). *The quality of American life: Perceptions, evaluations, and satisfactions*. New York: Russell Sage Foundation.
- Campbell, J.D., Trapnell, P.D., Heine, S.J., Katz, I.M., Lavallee, L.F., & Lehman, D.R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology*, 70, 141–156.
- Campbell, T.L., Byrne, B.M., & Baron, P. (1992). Gender differences in the expression of depressive symptoms in early adolescence. *Journal of Early Adolescence*, 12, 326–338.
- Christophe, V., & Rimé, B. (1997). Exposure to the social sharing of emotion: Emotional impact, listener responses and secondary social sharing. *European Journal of Social Psychology*, 27, 37–54.
- Cole, S.W., Kemeny, M.E., Taylor, S.E., & Visscher, B.R. (1996). Elevated physical health risk among gay men who conceal their homosexual identity. *Health Psychology*, 15, 243–251.
- Collins, N.L., & Miller, L.C. (1994). Self-disclosure and liking: A meta-analytic review. *Psychological Bulletin*, 116, 457–475.
- Cotterell, J. (1996). *Social networks and social influences in adolescence*. Florence, KY: Taylor & Francis.
- Derlega, V.J., Metts, S., Petronio, S., & Margulis, S.T. (1993). *Self-disclosure*. London, SAGE.
- Erikson, E.H. (1959). Identity and the life cycle. *Psychological issues* (Monograph no. 1). New York: International Universities Press.
- Erikson, E.H. (1968). *Identity: Youth and crisis*. New York: Norton.
- Fincham, F.D., & Bradbury, T.N. (1987). The assessment of marital quality: A reevaluation. *Journal of Marriage and the Family*, 49, 797–809.
- Finkenauer, C., Engels, R.C.M.E., & Meeus, W. (2002). Keeping secrets from parents: Advantages and disadvantages of secrecy in adolescence. *Journal of Youth and Adolescence*, 31, 123–136.
- Finkenauer, C., Engels, R.C.M.E., Meeus, W., & Oosterwegel, A. (2002). Self and identity in early adolescence: The pains and gains of knowing who and what you are. In T.M. Brinthaup & R.P. Lipka (Eds.), *Understanding early adolescent self and identity: Applications and interventions* (pp. 25–56). Albany, NY: State University of New York Press.
- Finkenauer, C., Frijns, T., Engels, R.C.M.E., & Kerkhof, P. (2005). Perceiving concealment in relationships between parents and adolescents: Links with parental behavior. *Personal Relationships*, 12, 387–406.
- Finkenauer, C., & Rimé, B. (1998a). Socially shared emotional experiences vs. emotional experiences kept secret: Differential characteristics and consequences. *Journal of Social and Clinical Psychology*, 17, 295–318.
- Finkenauer, C., & Rimé, B. (1998b). Keeping emotional memories secret: Health and well-being when emotions are not shared. *Journal of Health Psychology*, 3, 47–58.
- Francis, M.E., & Pennebaker, J.W. (1992). Putting stress into words: The impact of writing on physiological, absentee, and self-reported emotional well-being measures. *American Journal of Health Promotion*, 6, 280–287.
- Frijns, T., Finkenauer, C., Vermulst, A.A., & Engels, R.C.M.E. (2005). Keeping secrets from parents: Longitudinal associations of secrecy in adolescence. *Journal of Youth and Adolescence*, 34, 137–148.
- Greenberg, M.A., Wortman, C.B., & Stone, A.A. (1996). Emotional expression and physical health: Revising traumatic memories or fostering self-regulation. *Journal of Personality and Social Psychology*, 71, 588–602.
- Grolnick, L. (1983). Ibsen's truth, family secrets, and family therapy. *Family Process*, 22, 275–288.
- Grotevant, H.D., & Cooper, C.R. (1986). Individuation in family relationships: A perspective on individual differences in the development of identity and role-taking skill in adolescence. *Human Development*, 29, 82–100.
- Guerrero, L.K., & Afifi, W.A. (1995). What parents don't know: Topic avoidance in parent-child relationships. In T.J. Socha, G.H. Stamp, & H. Glen (Eds.), *Parents, children, and communication: Frontiers of theory and research. LEA's communication series* (pp. 219–245). Hillsdale, NJ: Erlbaum.
- Hankin, B.L., & Abramson, L.Y. (1999). Development of gender differences in depression: Description and possible explanations. *Annals of Medicine*, 31, 372–379.
- Hartup, W.W. (1996). The company they keep: Friendships and their developmental significance. *Child Development*, 67, 1–13.
- Ichiyama, M.A., Colbert, D., Laramore, H., Heim, M., Carone, K., & Schmidt, J. (1993). Self-concealment and correlates of adjustment in college students. *Journal of College Student Psychotherapy*, 7, 55–68.
- Imber-Black, E. (1993). *Secrets in families and family therapy*. New York: W.W. Norton & Company.
- Jung, C.G. (1961). *Freud and psychoanalysis* (trans. R.F.C. Hull). London: Routledge & Kegan Paul.
- Kahle, L.R., Kulka, R.A., & Klingel, D.M. (1980). Low adolescent self-esteem leads to multiple interpersonal problems: A test of social-adaptation theory. *Journal of Personality and Social Psychology*, 39, 496–502.
- Kandel, D., & Davies, M. (1982). Epidemiology of depressive mood in adolescents. *Archives of General Psychiatry*, 39, 1205–1212.
- Karpel, M.A. (1980). Family secrets. *Family Process*, 19, 295–306.
- Kelly, A.E. (2002). *The psychology of secrets*. New York: Kluwer Academic/Plenum Publishers.
- Kelly, A.E., & Achter, J.A. (1995). Self-concealment and attitudes toward counseling in university students. *Journal of Counseling Psychology*, 42, 40–46.
- Kelly, A.E., Kluska, J.A., von Weiss, R.T., & Kenny, C. (2001). What is it about revealing secrets that is beneficial? *Personality and Social Psychology Bulletin*, 27, 651–665.
- Kelly, A.E., & McKillop, K.J. (1996). Consequences of revealing personal secrets. *Psychological Bulletin*, 120, 450–465.
- Kerr, M., & Stattin, H. (2000). What parents know, how they know it, and several forms of adolescent adjustment: Further support for a reinterpretation of monitoring. *Developmental Psychology*, 36, 366–380.
- Kerr, M., Stattin, H., & Trost, K. (1999). To know you is to trust you: Parents' trust is rooted in child disclosure of information. *Journal of Adolescence*, 22, 737–752.
- Lane, D.J., & Wegner, D.M. (1995). The cognitive consequences of secrecy. *Journal of Personality and Social Psychology*, 69, 237–253.
- Larson, D.G., & Chastain, R.L. (1990). Self-concealment: Conceptualization, measurement, and health implications. *Journal of Social and Clinical Psychology*, 9, 439–455.
- Locke, H.J., & Wallace, K.M. (1959). Short marital adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living*, 21, 251–255.
- Major, B., & Gramzow, R.H. (1999). Abortion as stigma: Cognitive and emotional implications of concealment. *Journal of Personality and Social Psychology*, 77, 735–745.
- Marshall, S.K., Tilton-Weaver, L.C., & Bosdet, L. (2005). Information management: Considering adolescents' regulation of parental knowledge. *Journal of Adolescence*, 22, 633–647.
- Masten, A.S., & Coatsworth, J.D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist*, 53, 205–220.
- Muraven, M., & Baumeister, R.F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin*, 126, 247–259.
- Newth, S., & Rachman, S. (2001). The concealment of obsessions. *Behaviour Research and Therapy*, 39, 457–464.
- Pachankis, J.E. (2007). The psychological implications of concealing a stigma: A cognitive-affective-behavioral model. *Psychological Bulletin*, 133, 328–345.
- Paul, E.L., & White, K.M. (1990). The development of intimate relationships in late adolescence. *Adolescence*, 25, 375–400.
- Pennebaker, J.W. (1989). Confession, inhibition, and disease. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22, pp. 211–244). New York: Academic Press.
- Pennebaker, J.W. (1990). *Opening up: The healing powers of confiding in others*. New York: Morrow.
- Pennebaker, J.W. (1997). *Opening up: The healing power of expressing emotions*. New York: Guilford.
- Pennebaker, J.W., & Susman, J.R. (1988). Disclosure of traumas and psychosomatic processes. *Social Science and Medicine*, 26, 327–332.
- Pennebaker, J.W., Zech, E., & Rimé, B. (2001). Disclosing and sharing emotion: Psychological, social, and health consequences. In M.S. Stroebe, R.O. Hansson, W. Stroebe, & H. Schut (Eds.), *Handbook of bereavement research: Consequences, coping, and care*. Washington, DC: American Psychological Association.

- Pine, A., & Aronson, E. (1981). *Burnout: From tedium to personal growth*. New York: Free Press.
- Richardson, L. (1988). Secrecy and status: The social construction of forbidden relationships. *American Sociological Review*, 53, 209–219.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Russell, A., Pettit, G.S., & Mize, J. (1998). Horizontal qualities in parent–child relationships: Parallels with and possible consequences for children's peer relationships. *Developmental Review*, 18, 313–352.
- Russell, D., Peplau, L.A., & Cutrona, C.E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, 39, 472–480.
- Seiffge-Krenke, I. (1998). Geheimnisse und Intimität im Jugendalter: Ihre Bedeutung für die Autonomieentwicklung. [Secrets and intimacy in adolescence: Their implications for the development of autonomy]. In A. Spitznagel (Ed.), *Geheimnis und Geheimhaltung* [Secrets and keeping secrets] (pp. 257–266). Göttingen: Hogrefe.
- Simmel, G. (1950). The secret and the secret society. In K.W. Wolff (Ed. and trans.), *The sociology of Georg Simmel*. New York: Free Press.
- Smetana, J.G., Metzger, A., Gettman, D.C., & Campione-Barr, N. (2006). Disclosure and secrecy in adolescent–parent relationships. *Child Development*, 77, 201–217.
- Smyth, J.M. (1998). Written emotional expression: Effect sizes, outcome types, and moderating variables. *Journal of Consulting and Clinical Psychology*, 66, 174–184.
- Stattin, H., & Kerr, M. (2000). Parental monitoring: A reinterpretation. *Child Development*, 71, 1072–1085.
- Steinberg, L., & Silverberg, S.B. (1986). The vicissitudes of autonomy in early adolescence. *Child Development*, 57, 841–851.
- Tangney, J.P., Baumeister, R.F., & Luzio Boone, A. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, 72, 271–322.
- Ullrich, P.M., Lutgendorf, S.K., & Stapleton, J.T. (2003). Concealment of homosexual identity, social support and CD4 cell count among HIV-seropositive gay men. *Journal of Psychosomatic Research*, 54, 205–212.
- Van Duijn, W. (2000). Out of control: A study on the relationship between self-control and problem behavior: A comparison between high school students and juvenile delinquents. Unpublished manuscript, Utrecht University, The Netherlands.
- Vangelisti, A.L. (1994). Family secrets: Forms, functions, and correlates. *Journal of Social and Personal Relationships*, 11, 113–135.
- Van Kooten, D. (2000). The role of self-control in the relation between parenting and problem behavior in a sample of boys following special education. Unpublished manuscript, Utrecht University, The Netherlands.
- Van Manen, M., & Levering, B. (1996). *Childhood's secrets: Intimacy, privacy, and the self reconsidered*. New York: Teachers College Press.
- Watson, A.J., & Valtin, R. (1993). "It's not telling your mum, only your friend": Children's understanding of secrets. In M.J. Dunkin (Ed.), *St. George papers in education* (Vol. 2, pp. 1–53). Oatley, NSW: The School of Teacher Education.
- Wegner, D.M., & Lane, J.D. (1995). From secrecy to psychopathology. In J.W. Pennebaker (Ed.), *Emotion, disclosure, and health* (pp. 25–46). Washington, DC: American Psychological Association.
- Youniss, J., & Smollar, J. (1985). *Adolescent relations with mothers, fathers, and friends*. Chicago, IL: University of Chicago Press.