Social Regulatory Processes in Later Life: A Web-Based Microlongitudinal Study

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Abstract

The goal for this study was to examine within-person processes driving individual development related to social goals. We examined how social regulatory processes travel together over time to understand if daily social goal progress is sensitive to variation in experiences of support and hindrance, and the extent to which maintenance or achievement goal orientation explains differences in sensitivity to social experiences. A sample of 105 adults over the age of 50 chose an individually meaningful social goal to track over time, which they coded as achievement- or maintenance-oriented. Participants then reported their daily progress, and experiences of support and hindrance toward that goal over a 100-day study period. We found social goal progress to positively covary with support and negatively covary with hindrance. These linkages, which we termed *sensitivity*, varied significantly across participants. This variation was partially explained by differences in goal orientation. Those with an achievement goal made lower goal progress, and were more sensitive to support and less sensitive to hindrance than those with a maintenance-oriented goal. Our findings partially explain the processes by which older adults work toward their social goals. Daily goal progress is contingent on daily social experiences, but these sensitivities are in part shaped by goal orientation.

Keywords: relationship regulation, intraindividual variability, achievement or maintenance goal orientation, hindrance processes, support processes

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As we move through life, and especially in later adulthood, there is awareness that one is at least partially responsible for creating the conditions leading to personal growth and valued outcomes. In developmental systems theory (Ford & Lerner, 1992) this idea is expressed as the view that *individuals are producers of their own development*. Although humans do not have control over all aspects of their lives, one of the most important ways in which individuals feel a sense of efficacy, eudemonic well-being, and flourish (Lachman, Neupert, & Agrigoroaei, 2011) is through setting and working toward goals. It is largely through goal setting and goal striving, that individuals are able to direct their development (Brandtstädter, 2009; Heckhausen, Wrosch, & Schulz, 2010; Hooker & McAdams, 2003; Hooker, 1999). In this study we examine older adults' progress toward a meaningful social goal in the context of their daily interpersonal experiences over a 100-day time period, and consider the extent to which goal progress and sensitivity to daily social experiences varies across achievement and maintenance-oriented goals.

Social Goals and Relationship Regulation in Later Life

People have goals in multiple areas, but one of the most important throughout life is the social domain. Through social goals, individuals regulate their relationships by selecting social partners, striving toward desired interactions, and seeking to manage the tone of their dyadic social exchanges (Lang & Carstensen, 2002; Lang, 2001). By regulating their relationships, individuals work toward maintaining a supportive environment, which is closely tied to health and well-being across the lifespan, especially in older adulthood. Older adults with supportive and satisfying social relationships

maintain more meaning in life (Krause, 2007), demonstrate higher cognitive functioning

(Blanchard-Fields, Horhota, & Mienaltowski, 2008), have more positive health behaviors

(Umberson & Montez, 2010), and report higher psychological well-being (Walen &

Lachman, 2000).

The complexities of social ties in older adulthood also highlight the importance of

relationship regulation. Feelings of ambivalence (Connidis & McMullin, 2002;

Fingerman, Hay, & Birditt, 2004) and conflicted social experiences, potentially threaten

health (Seeman, 2000) and socioemotional well-being (Antonucci, Akiyama, & Lansford,

1998; Rook, 1984). Further, in older adulthood, age-associated losses (Baltes,

Lindenberger, & Staudinger, 2006), and a more limited capacity to take on challenges

directly (Neupert, Almeida, & Charles, 2007) emphasize the importance of managing

social ties to meet changing needs (Charles, 2010; Lang, Reschke, & Neyer, 2006).

Although working toward social goals is a social regulatory process (Lang &

Carstensen, 2002; Lang, 2001), little empirical work to date has examined its processes *in

situ*, in the daily lives of older adults. Groundbreaking work on social goals has been

conducted over the last two decades through the lens of socioemotional selectivity theory

(Carstensen, Isaacowitz, & Charles, 1999). A plethora of studies using laboratory and

natural experiments (e.g. Carstensen & Fredrickson, 1998; Fung, Carstensen, & Lutz,

1999) suggest that as future time perspective decreases, older adults begin to prioritize

emotional closeness (Lang, Staudinger, & Carstensen, 1998). Social goals have been

examined in terms of age-related preferences (Ebner, Freund, & Baltes, 2006),

differences in well-being (Lang & Carstensen, 2002), and in the context of responding to

stressful interactions (Martini & Busseri, 2010; Sorkin & Rook, 2006), but little is

currently known about the processes by which older adults work toward their social goals on a day-to-day basis, and under what circumstances they are more or less successful. In this study we ask older adults themselves to set a meaningful goal to work on for 100 days, and examine goal pursuit on a within-person level to understand the conditions under which they are more or less successful, and explore the variation of these patterns across individuals.

Social Goal Orientation

Because humans have wide potential but are bound to a limited amount of time, goal hierarchies and structures vary depending on the individual's life period (Ebner et al., 2006; Hooker, 1999). Lifespan theory draws attention to goal orientation- whether a goal is toward achievement or maintenance (Baltes et al., 2006). Achievement goals are directed toward something that has yet to be accomplished, and as such are directed toward growth. A maintenance goal, on the other hand, refers to maintaining a goal that has already been accomplished (Ebner et al., 2006), such as an established level of relationship quality. As individuals age, their goal priorities tend to shift from achievement to maintenance (Baltes et al., 2006; Neugarten, Havighurst, & Tobin, 1968), potentially to reduce socioemotional risk (Carstensen, Isaacowitz, & Charles, 1999). Consistent with theory, maintenance orientation has been positively related to well-being among older adults (Ebner et al., 2006). Differences in goal types have also been related to differences in older adults' reactions to social tensions (Martini & Busseri, 2010; Sorkin & Rook, 2006). Goal orientation may therefore predict differences in goal progress and sensitivity to variation in daily social experiences.

Daily Social Experiences and Goal Progress

As much as older adults manage their relationships, they do so in concert with their social partners (Fingerman & Charles, 2010). The process of working toward social goals is firmly embedded within the context of daily social experiences. We propose that older adults' progress toward their social goals may hinge on the extent to which they are sensitive to experiences of *social support* and *hindrance*. The positive and negative effects of support on well-being outcomes in older adulthood are well documented. On the one hand, perceiving relationships as supportive and less straining is positively related to health and emotional well-being (e.g. Antonucci et al., 1998; Cobb, 1976; House, Robbins, & Metzner, 1982; Walen & Lachman, 2000). The findings have been more mixed in terms of received, or experienced support, which can be helpful, but also overbearing (Gleason, Iida, Shrout, & Bolger, 2008), unwanted, enabling (Newsom, 1999), and negatively affect well-being (Martire, Schulz, Wrosch, & Newsom, 2003). Similarly, although those who experience more negative social interactions report lower emotional well-being, relationships may be close in spite of conflict (Fingerman et al., 2004), and longitudinal evidence suggests that conflict may even draw social partners closer (Fung, Yeung, Li, & Lang, 2009).

Social relationships are also known to vary by gender. Men tend to have more distal connections with their support network, and are less affected by strain but also less protected by support (Walen & Lachman, 2000). Women tend to have stronger relationship feelings (Antonucci et al., 1998), and react more intensely to interpersonal problems (Birditt & Fingerman, 2003). The complexities of social experiences highlight the importance of understanding how daily variation in social experience may facilitate or constrain the ability to work toward a meaningful social goal.

Social Goal Support Processes and Social Support Sensitivity

Because the association between daily goal progress and daily experiences of support toward that goal has yet to be examined, we draw on previous work on daily support and daily experiences of well-being (DeLongis, Capreol, Holtzman, O'Brien, & Campbell, 2004) and relationship quality (Rafaeli, Cranford, Green, Shrout, & Bolger, 2008) as starting points. We build on theories of relationship regulation (Lang & Heckhausen, 2006; Lang, 2001) by proposing that individuals work toward meaningful social goals *with* the support of social partners. Similar to studies of stress reactivity (Bolger & Zuckerman, 1995; Friedman, Karlamangla, Almeida, & Seeman, 2012; Neupert et al., 2007), examining within-person processes allows us to study the *link* between support and goal progress.

In this study, *social support sensitivity* refers to the strength of the association between daily support toward a goal and progress toward that goal. We expect daily goal progress to be more tightly coupled with daily social support for some individuals than others. As a result, individuals with high support sensitivity would have difficulty making goal progress in the absence of support, whereas those with low support sensitivity would be largely unaffected by daily fluctuations in support toward that goal.

Social Goal Hindrance Processes and Hindrance Sensitivity

Social partners not only support, but can potentially hinder goal progress (Ruehlman & Wolchik, 1988). Individuals experience social hindrance when a social partner, or the social environment, impedes goal progress (Rafaeli et al., 2008). Hindrance may occur through social tensions, interpersonal criticism, or social obligations that constrain efforts to work toward a goal (Ruehlman & Wolchik, 1988).

Although daily social hindrance has not been studied in relation to daily social goal progress, daily experiences of pain and fatigue have been found to hinder interpersonal goal progress (Affleck et al., 1998). Daily feelings of social hindrance have also been found to be related to negative relationship quality on that day (Rafaeli et al., 2008). In this study, *social hindrance sensitivity* refers to the strength of association between daily experiences of hindrance and daily goal progress. Based on the literature on hindrance and emotional well-being (Rafaeli et al., 2008; Ruehlman & Wolchik, 1988), we expect hindrance to be negatively related to goal progress. We also expect hindrance sensitivity to vary across individuals.

Linking Support and Hindrance Processes

A within-person approach to studying social regulatory processes also allows the examination of how support and hindrance may interact with one another in the same temporal space. Studying within-person processes allows us to examine support and hindrance as one would do so for support and stress reactivity (Bolger & Zuckerman, 1995; Neupert et al., 2007), by testing the extent to which support may dampen the negative effect of hindrance on one's social goal on that day. Previous research among younger adults did not find support to dampen hindrance (Rafaeli et al., 2008). However, because evidence suggests regulatory processes differ between older and younger adults (Brose, Schmiedek, Lövdén, & Lindenberger, 2011), the interplay between support and hindrance may be evident in an older adult sample.

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The Current Study

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In the current study we apply a within-person perspective to examine *how* older adults regulate their social goals within the context of daily social experiences. To

understand this process, we aim to: (a) understand the extent to which daily experiences

of social support and social hindrance covary with daily goal progress, (b) examine

whether the level of sensitivity to social experiences varies across participants, and (c)

investigate the extent to which a maintenance or achievement goal orientation predicts

higher and lower goal progress, and also explains variation in sensitivity to social

experiences. We expect higher support will be positively related to social goal progress

and hindrance will be negatively related to goal progress, and that these associations will

vary significantly across individuals. Based on previous research demonstrating a

preference among older adults for maintenance goals over achievement goals (Bolkan &

Hooker, 2012; Ebner et al., 2006; Neugarten et al., 1968), we expect participants with

maintenance social goals to report higher daily goal progress. Finally, because goal types

have been linked to differences in reaction to interpersonal tensions (Martini & Busseri,

2010; Sorkin & Rook, 2006), we expect social goal progress among those with an

achievement goal to be more sensitive to variation in support and hindrance.

Method

Study Design

We used data from the Personal Understanding of Life and Social Experiences

(PULSE) Project (Hooker, 2009), a 100-day microlongitudinal study of self-regulation in

the context of daily experiences. The PULSE project was conducted completely via a web-

application designed by our research team. The 100-day time frame was chosen to capture

processes associated with the pursuit of a newly established goal in the health (Gruber,

2010) and social domains. The PULSE project applied a within-person repeated measures

design (e.g., Nesselroade, 1990) to examine the covariation of intraindividual processes in

health and social goals and interindividual differences in those processes (Nesselroade &

Ram, 2004). In this study, daily goal progress was measured concurrently with support and

hindrance to capture qualities of the immediate social environment and to allow

investigation into the daily interplay of these constructs (Ram, Conroy, Hyde, & Molloy,

2012).

Participants

Our sample of 105 older adults (age = 52 – 88, M = 63.13, SD = 7.8) was recruited

from an existing human participant registry. Participants were mostly white (97%), women

(88%), and well educated (77% > college degree). In addition, 73% were married or

partnered, 47% were retired, and 93% reported their health to be good or excellent. An

email describing the internet-based study, which included a link to enroll, was sent to the

450 registry members with an email address. Members were informed that they would

receive $10 compensation for completing the initial survey and an additional $50 for

completing at least 80% of the daily surveys. One goal of the PULSE project was to

explore different temporal frames for data collection. Therefore, 25% of the sample was

randomly assigned to a *burst measurement group*. This group completed four equally

spaced 7-day bursts of measurement during the same 100-day time period. There were no

significant demographic differences between the burst group who participated for 28 days

versus the daily group that participated for 100 days (T^2 = .05, $F(1,2)$ = .76, ns).

Procedure

The PULSE project had two distinct components: (a) an initial survey and (b) a

series of daily surveys. In the initial survey, participants provided information on

demographic and psychosocial variables. Participants were able to save the survey and

return later to complete it. The median summed duration of the initial survey sessions was

51.75 minutes (interquartile range = 33.13). In the daily questionnaires, participants

documented their daily goal progress and experiences in their daily life. Participants

accessed their surveys by following a link that was embedded in a daily reminder email.

Reminders were sent each morning, and included instructions to complete the daily survey

that evening. We designed the daily survey to be answered in a brief single session.

Answers were not saved until participants pressed submit, and unsubmitted surveys expired

at 2:00 am the following day. Analysis of time-stamped data showed that 83% of sessions

were completed in the evening, and the median completion time for daily surveys was 3.66

minutes (interquartile range = 5.12).

Initial Survey Measures

   Meaningful social goal. Participants described one meaningful goal, and its

importance, in the domain of social relations by responding to the following: "Choose one

goal that is important to you in the realm of social relations (family and/or friends) that you

expect to be working on over the next 4 months." Participants were asked to "describe this

goal in as much detail as possible" in a text field, and then answered the question "Why is

it important to you?" in a second text field. After describing their goals, the participants

were asked to provide a few cue words to represent their social goals. These cue words

were programmed to automatically populate the participant's daily survey. Researchers

reviewed each social goal, and followed up with participants by email to clarify goals and

cue words as needed.

   Goal orientation. After describing social goals and their importance, participants

were asked whether their social goal was achievement or maintenance oriented: "Would

you say that this goal is one of initial achievement (you need to work toward it) or one of continuing achievement or maintenance (you have achieved your goal but want to work to maintain it)?" An illustration of goals, cue words, and goal orientation is displayed in Table 1.

Daily Measures of Social Regulatory Processes

Daily measures of social goal progress, support, and hindrance were completed on the daily survey, which began with instructions to respond based on experiences *for that day*. Daily goal progress, support, and hindrance were measured on scales that ranged from 0 and 100, and participants responded by using their mouse to move a slider across the scale. The numbers on the scale were not visible to participants, but were recorded in the database. Our intention was to encourage assessment of each day independently (Brose & Ram, 2012; Freyd, 1923; Hooker, 1991) and to avoid the potential response bias of repeatedly favoring a specific number.

Daily social goal progress. Participants reported their daily social goal progress in the daily survey. The cue words that participants provided in the initial survey populated their daily surveys. An example goal prompt with participant-generated cue words (in italics) follows: "Rate your progress towards your goal of *make new friends*." Participants then indicated their progress by moving the slider between *no progress* (0) and *much progress* (100).

Daily social support. In each daily survey, participants indicated how much assistance they received toward their social goal that day by responding to the following question, which we adapted from Rafaeli and colleagues (2008): "Did you receive any practical or emotional assistance towards your social goal today?" Participants responded

by moving the slider between *no support* (0) and *much support* (100).

Daily social hindrance. The degree to which daily social experiences hindered daily social goal progress was measured using the social hindrance measure (adapted from Rafaeli et al., 2008). In each session over the 100-day time period, participants reported experiences of hindrance by responding to the question, "Did anyone in your social network create tension, arguments, or time constraints that impeded progress towards you social goal today?" Participants responded by moving a slider between *not at all* (0) and *very much* (100).

Covariates

Age and gender were included as covariates because of their known relationships to self-regulatory processes (Birditt & Fingerman, 2003; Hennecke & Freund, 2010) and social relationships (Akiyama, Antonucci, Takahashi, & Langfahl, 2003). A dummy variable indicating membership in the burst group was included to control for differences in test exposure (28 days vs. 100 days) on daily goal progress and social regulatory processes.

Analytic Plan

We addressed our research questions by analyzing our data with a series of multilevel random coefficient models (Bolger, Davis, & Rafaeli, 2003; Raudenbush & Bryk, 2002), which accommodated nested data and allowed the intercept and slope to vary across participants. To examine within-person social regulatory processes, and between person differences in these processes, we constructed both within-person (level 1) and between-person (level 2) models. Level 1 variables were collected daily, represent within-person processes, and included daily experiences of support and hindrance. These variables were person-centered, and represent the link between the social experience and

goal progress on that day. Level 2 variables were time-invariant and included goal

progress, age, gender, group measurement, and the aggregate of support and hindrance

across the study. Level 2 variables were grand mean centered, and their coefficients

represent between-person differences in the level of goal progress across the 100-day study.

Goal orientation was examined in terms of its direct effect on the level of social goal

progress, and its interaction with within-person support and hindrance processes. Models

were built sequentially, beginning with an unconditional model. The full model was

expressed as follows:

$$SocialGoal_{ti} = \beta_{0i} + \beta_{1i}\left(Day_{ti}\right) + \beta_{2i}\left(SupportWP_{ti}\right) + \beta_{3i}\left(HindranceWP_{ti}\right) + \\ \beta_{4i}\left(SupportWP \times HindranceWP_{ti}\right) + e_{ti} \tag{1}$$

$$\beta_{0i} = \gamma_{00} + \gamma_{01}\left(Age_i\right) + \gamma_{02}\left(Gender_i\right) + \gamma_{03}Groupi + \gamma_{04}\left(SupportBP_i\right) + \\ \gamma_{05}\left(HindranceBP\right)_i + \gamma_{06}\left(Goal_i\right) + u_{0i} \tag{2}$$

$$\beta_{1i} = \gamma_{10} + u_{1i}$$

$$\beta_{2i} = \gamma_{20} + \gamma_{21}\left(SupportBP_i\right) + \gamma_{22}\left(Goal_i\right) + u_{2i} \tag{3}$$

$$\beta_{3i} = \gamma_{30} + \gamma_{31}\left(HindranceBP_i\right) + \gamma_{32}\left(Goal_i\right) + u_{3i}$$

In equation (1), social goal progress for person i at occasion t is modeled by intercept β_{0i},

embedded linear trend β_{1i}, and participant's variation around their average of support (β_{3i})

and hindrance (β_{4i}) and the within-person residual e_{ti}. The u parameters in equations (2)

and (3) allowed the intercept and coefficients to vary across individuals. Mean levels of

support (γ_{21}), and hindrance (γ_{31}) moderated their respective coefficients. Goal orientation

was modeled to predict the level of goal progress (γ_{06}), and between-person variability in

support (γ_{22}) and hindrance (γ_{32}) sensitivity.

Data were analyzed using the lme function in the R nlme package (Pinheiro, Bates,

DebRoy, & R Development Core Team, 2012) We assessed our models in terms of

improved model fit (Δ -2LL), and proportional reduction in variance

$R^2 = \left(\sigma_{u|b}^2 + \sigma_{u|m}^2\right)/\sigma_{u|b}^2$ in the random estimates (Hox, 2010; Raudenbush & Bryk, 2002).

Examination of model residuals and the autocorrelation function showed that applying a

linear time parameter removed the trend, and that an AR(2) process best absorbed the

autocorrelation of within-person residuals. Heteroskedasticity was modeled across gender

and age subsets of the sample, and significantly improved model fit (χ^2 (3) = 329.729,

$p < .001$).

Attrition and Compliance Analysis

From the original sample of 105 participants who completed the initial survey,

five women in the daily group dropped out of the study, and one participant was excluded

for completing only 5 observations, leaving a final sample of 99 participants. Those who

dropped out were not significantly different from participants in age, education,

employment status, marital status, self-reported health, and goal orientation ($T^2 = 0.04$,

$F(6, 98) = .58$, *ns*). The remaining sample completed a combined 7032 observations.

The median completion rate was .90 (interquartile range = .2). Correlation analysis of

compliance across the study covariates showed higher compliance to be associated with a

lower level of hindrance ($r = -.32, p = .001$). We also examined compliance in terms of

the time of day that they daily surveys were completed. Correlation analysis of the

intraindividual mean time of day showed no significant association with study covariates.

Multilevel analysis found that neither the level, nor day-to-day variation in time of day

was associated with variation in social goal progress (BP = -.13, *SE* = .63, *ns*; WP = -.04,

SE = .07, *ns*), support (BP = -.06, *SE* = .74, *ns*; WP = .02, SE = .08, *ns*), or hindrance

(BP = -.57, *SE* = .43, *ns*; WP = .06, *SE* = .06, *ns*).

Results

Descriptive analyses of between-person characteristics are presented in Table 2.

Table 3 presents intraindividual means, standard deviations, and the correlations of daily

measures across achievement and maintenance goal orientations.

Daily Variation in Within-Person Social Regulatory Processes

To begin analysis, each social regulatory process was modeled unconditionally to

estimate the proportion of within- and between-person variation for each process.   Social

goal progress had an intraclass correlation of .50, showing that the distribution of within-

and between-person variation was equally distributed. The proportions of the within-

person variance for the social regulatory processes (1 – ICC) were 45% and 50% for

social support and social hindrance respectively. We then modeled support and

hindrance separately against the covariates day, age, gender, measurement group, and

mean levels of support and hindrance, so that meaningful cross-level interactions could

be indentified and carried forward to the full model. Interaction terms for hindrance WP

$\times$ BP, and support WP $\times$ BP were included in the analysis that follows.

Social support processes. We began with modeling support processes. These

results are presented in Model 1 on Table 3. On the between-person level, those who

experienced more support also made higher goal progress (estimate = .59, *SE* = .06,

p < .001). On the within-person level, goal progress was sensitive to variation in

experiences support, where higher than average support was associated with higher goal

progress on that day (estimate = .49, *SE* = .03, *p* < .001). The support WP $\times$ BP

interaction was also significant (estimate = .002, *SE* = .001, *p* = .05). Those with a higher

level of support were more sensitive to variation in support. As shown in Figure 1,

however, the strength of this association varied greatly across individuals ($\chi^2(3) = 748.16$,

$p < .001$). In this sample, participants varied from the fixed within-person support effect

by a standard deviation of .27. Accordingly, 95% of the plausible participant-specific

slopes of support sensitivity fell between -.04 and 1.02. Participants varied significantly,

in other words, in the extent to which their daily goal progress was sensitive to daily

experiences of social support. For some, support and goal progress were tightly coupled,

whereas for others, they varied independently.

Social hindrance processes. In Model 2, we examined the link between

hindrance and goal progress, independent of support. On the between-person level, those

who experienced more hindrance on average also reported lower goal progress

(estimate = -.25, $SE = .07$, $p = .002$). In terms of within-person variation, participants

tended to make lower goal progress on days when they experienced more hindrance than

their average (estimate = -.07, $SE = .002$, $p < .001$). The level of hindrance across the

study period also moderated hindrance sensitivity (estimate = -.003, $SE = .001$, $p = .01$).

Goal progress among those who experienced more hindrance on average was more

sensitive to variation in hindrance. Adding hindrance processes to model also rendered

the support WP×BP interaction marginally insignificant (estimate = .002, $SE = .001$,

$p = .08$). We also found hindrance sensitivity to vary significantly across participants

($\chi^2(4) = 91.11$, $p < .001$). In this sample, participants varied from the fixed daily social

hindrance effect by a standard deviation of .14. Therefore, a plausible range (95%) of the

participant-specific hindrance coefficients fell between -.21 and .34 (see Figure 1). For

some participants, hindrance was positively related to goal progress on that day.

Support and Hindrance Processes. Contrary to our expectations, the within-person support $\times$ hindrance interaction was not significant (estimate = .000, *SE* = .000, *ns*). Because adding this parameter did not improve model fit, we removed it before constructing Model 3.

Achievement versus Maintenance Goal Orientation

To address our third aim, we added achievement versus maintenance goal orientation to the model. The results from this analysis are presented in Model 3 on Table 4. Achievement versus maintenance goal orientation predicted between-person differences in goal progress, moderated social regulatory processes, and improved model fit ($\chi^2(3) = 12.30, p = .01$). Participants with an achievement goal reported lower social goal progress in general than those with a maintenance goal (estimate = -9.56, *SE* = 2.70, *p* < .001). As shown in Figure 2, participants with an achievement-oriented goal were also more sensitive to daily experiences of support (estimate = .11, *SE* = .06, *p* = .05) and less sensitive to daily experiences of social hindrance (estimate = .08, *SE* = .04, *p* = .04) than those with a maintenance-oriented goal. Goal orientation explained 3% of the between-person variation in social support sensitivity and 8% of the variation in social hindrance sensitivity.

<center>**Discussion**</center>

This study represents an initial step toward understanding how self-regulatory processes in service of a goal in the social domain are linked to goal structures that, over time, can explicate *the processes by which* people become producers of their own development (Ford & Lerner, 1992; Hooker & McAdams, 2003). We asked older adults to create a meaningful social goal and to report their daily progress and social

experiences over a 100-day time period. Our purpose was to understand how daily social

experience and goal orientation facilitate or constrain older adults' ability to regulate

relationships through their social goals. We found daily social goal progress to be

coupled with social experiences of support and hindrance. Importantly, these linkages,

which we termed *sensitivity*, varied significantly across individuals, which we explained

in part by differences in goal orientation.

Social Regulatory Processes: Support, Hindrance, and Social Goal Progress

In our close examination of social goal progress' coupling with daily social

experiences, we found that indeed, progress toward a social goal is linked to experiences

of support and hindrance on that day. Beyond their established link to emotional well-

being (DeLongis et al., 2004; Rafaeli et al., 2008), our findings show that support and

hindrance are also related to social goal progress, a process by which individuals regulate

their relationships (Lang & Carstensen, 2002; Lang & Heckhausen, 2006). To the extent

that older adults' optimize their social environment by working toward a social goal

(Rook, Mavandadi, Sorkin, & Zettel, 2007), those who receive less support or are more

hindered will have more difficulty doing so, which may over time compromise their well-

being. The link between goal progress and emotional well-being was not examined in

our study and is an important direction for future research.

We also examined experiences of support and hindrance in the same temporal

space, and did not find support on a given day to be associated with dampened hindrance

sensitivity on that day. Review of the intraindividual correlations (Table 3) suggests

considerable variation in the intraindividual correlation of support and hindrance

(M_{icorr} = -.07, SD = .30). For the majority of individuals, support and hindrance varied

independently. However, for a substantial minority, support and hindrance were

negatively coupled (high support was linked to low hindrance), or positively coupled

(higher support was linked to high hindrance). Given this variation, it is not surprising to

us that a multilevel model approach did indentify a significant mean effect, even though

it may be present for some.

Variation in Sensitivity to Social Experiences

In this study our analytic lens was focused on within-person social regulatory

processes, which emphasized *variation* in the link between daily social experiences and

daily goal progress across individual. Consistent with our expectations, we found both

hindrance and support sensitivity to vary considerably across individuals, and this has

two implications. First, the need for support or the effect of hindrance cannot necessarily

be generalized across persons and contexts. For some individuals, goal progress and

support were largely independent, whereas for others, the two were tightly linked. Our

results also suggest that under some circumstances, hindrance was related to higher goal

progress on that day. Similar to findings of conflict drawing social partners closer (Fung

et al., 2009), hindrance may motivate some individuals to address conflict by working

toward their social goals. Second, similar to research on variation in self-efficacy (Lang,

Featherman, & Nesselroade, 1997), for those with higher sensitivity, variation may be

more meaningful than mean levels of support or hindrance. That is, those with higher

sensitivity may be less able to maintain steady goal progress in the context of fluctuating

experiences of support and hindrance.

Sensitivity to social experiences may be an important construct in the study of

optimal aging, via its association with health and well-being outcomes and age-related

change. Our findings warrant further investigation into characteristics of the individual (e.g., personality; network composition), and situation (e.g., newly widowed; relocation) that may explain this variation in sensitivity to social experiences.

In this study, we explained some of this variation with the participant's goal orientation, and also individuals' aggregate experiences of support and hindrance. Higher levels of support and hindrance were associated with higher sensitivity to daily social experiences. This finding may highlight adaptation to the social environment. Perhaps those who experience support also depend on it more, or alternatively, those who depend on support construct supportive social ties. The hindrance finding is consistent with literature on stress reactivity (e.g. Friedman et al., 2012), where higher exposure to hindrance equates to higher sensitivity. Longitudinal evidence is necessary to understand the dynamics of how changes in the level relates to changes in sensitivity over extended time periods. Importantly, the aggregate of social experiences should also be studied in concert with personality. Those who experience more hindrance are also higher in neuroticism, and therefore also sensitive to variation in stress and less able to regulate their social goals (Hooker, Choun, Mejía, Pham, & Metoyer, in press).

Goal Orientation: Selection, Progress, and Sensitivity to Social Experiences

We also examined differences in social goal progress across goal orientation, and compared older adults working toward *achieving* something new to those working to *maintain* an aspect of their social domain. Given previous research (Ebner et al., 2006) and theory (Baltes et al., 2006; Neugarten et al., 1968), we expected older adults to select a maintenance goal in the social domain, in an effort to avoid socioemotional risk by choosing the familiar over the novel (Carstensen et al., 1999). We found, however, the

majority (57%) of participants chose an achievement-oriented goal. Their preferences

may reflect their life stage, most of whom had recently retired or were on the verge of

retirement, a time when changing social roles may amplify the desire to adjust

relationships to meet new needs (Lang et al., 2006). However, goal orientation was

neither correlated with age ($r = -.01$) nor retirement status ($r = -.05$). Although

socioemotional selectivity theory (SST) has been dominant for the last two decades it is

important not to reify it into a monolithic orientation for understanding all aspects of

social relationships. Our results are consistent with evidence that adults construct

achievement goals across the lifespan (Maehr & Kleiber, 1981), even in the face of age

and illness (Cotrell & Hooker, 2005) when change is necessary to support well-being.

Our findings also indicate, consistent with previous research on goal orientation

and emotional well-being (Ebner et al., 2006), and SST (Carstensen et al., 1999), that

selecting an achievement goal entails the potential for facing greater risk. First is the risk

of failure, those who created an achievement-oriented goal made less goal progress over

the 100-day time period than those who created a maintenance-oriented goal. Second is

the risk of interdependency. Those with an achievement goal were also more sensitive to

day-to-day variation in their daily experiences of support. Their progress was contingent

on experiencing support on that day. Notably, in this sample, an achievement goal was

negatively correlated with the level of support (-.19), which suggests that although more

sensitive to support, those with an achievement goal experienced less support on average.

Contrary to our expectations, we found individuals with an achievement goal to be *less*

sensitive to daily variation in hindrance than those with a maintenance goal. This finding

is more difficult to interpret, but perhaps achievement endeavors activate regulatory

processes in ways that facilitate ignoring daily hindrances and staying on task (Hennecke & Freund, 2010).

Limitations and Directions for Future Research

In this exploratory study, we found a link between daily social experiences and goal progress, identified variation in these associations, and explained a proportion of this variation with differences in goal orientation. Nevertheless, this study had several limitations. First, working toward social goals is naturally intertwined with the participation of social partners. We acknowledge that social goals may be more sensitive to variation in support and hindrance than other goal domains. To explore this, in post-hoc analysis we coded goals that appeared to specifically require the participation of social partners. Post-hoc analysis of these data suggests that individuals with support-confounded goals (N = 15) made less goal progress (estimate = -10.88, SE = 3.89, p = .005), and were more sensitive to variation in hindrance (estimate = .13, SE = .06, p = .03).

Second, our sample was a unique, and notably facile with computers. To our knowledge, this study is the first microlongitudinal study conducted with older adults entirely over the internet. Thus, our findings may not generalize to a more representative sample of older adults. Also, people willing to participate in a study with frequent data collection over a 4-month time period may be unique in ways that may present a potential selection effect with respect to working toward goals. Finding such variability, even in a relatively homogenous sample, warrants further investigation into other populations. For example, vulnerable populations may be more interdependent than advantaged populations (Allen, Blieszner, & Roberto, 2011; Stack, 1974). Investigating social

regulatory processes in different populations would help us understand which processes vary as a function of structural characteristics such as socioeconomic status, ethnicity, race, and neighborhood. In addition, although gender was included in our model, there were insufficient men in the sample to make a conclusive statement about the role of gender in moderating social regulatory processes.

It's also important to note that although multilevel models provide an effective method to examine the nomothetic connection of within-person processes, while concurrently estimating variation from the mean, they are limited in identifying within-person connections that vary extensively across individuals. Future approaches that are truly idiothetic, that identify dynamic relationships within persons that can then be generalized across persons (Elavsky, Molenaar, Gold, Williams, & Aronson, 2012; Nesselroade & Ford, 1985; Zevon & Tellegen, 1982), will be important contributions to this area.

We acknowledge that the act of observing and noting one's actions can potentially modify outcomes. Although this study showed no significant effect of test exposure (burst vs. daily group) on either goal progress or social regulatory processes, participation in the study likely created a high level of self-observance.

Finally, although social goals are known to be important in older adulthood, and participants chose their own meaningful social goal, we did not collect data that specified where the social goal was situated in the overall goal hierarchy. This information would provide a unique direction for future research in this area, as goal hierarchies differ greatly in number of goals, level of abstractness, and temporal frame (Bolkan & Hooker, 2012).

Conclusion

In empirically linking social experiences to social goal progress, this study moved toward re-conceptualization of social resources of support and hindrance from correlates of emotional well-being to potential drivers of development. Consistent with the literature on social support and well-being (Cobb, 1976; House et al., 1982; Walen & Lachman, 2000), we found that individuals who experienced higher levels of support over the course of the study also made higher goal progress. Similarly, we found that those with higher levels of hindrance, independent of social support, also made lower goal progress. A portion of the individual variation in the extent to which sensitivity was coupled with hindrance or support was explained by whether the person's social goal was one of maintenance or achievement. This *close-in* view of individuals' social strivings gives researchers an additional lens through which to view development, one that focuses on the transactional processes of the person in situ.

References

Affleck, G., Tennen, H., Urrows, S., Higgins, P., Abeles, M., Charles Hall, … Newton, C. (1998). Fibromyalgia and women's pursuit of personal goals: A daily process analysis. *Health Psychology*, *17*, 40–47. doi:10.1037/0278-6133.17.1.40

Akiyama, H., Antonucci, T. C., Takahashi, K., & Langfahl, E. S. (2003). Negative interactions in close relationships across the life span. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *58*, P70–P79. doi:10.1093/geronb/58.2.P70

Allen, K. R., Blieszner, R., & Roberto, K. A. (2011). Perspectives on extended family and fictive kin in the later years strategies and meanings of kin reinterpretation. *Journal of Family Issues*, *32*, 1156–1177. doi:10.1177/0192513X11404335

Antonucci, T. C., Akiyama, H., & Lansford, J. E. (1998). Negative effects of close social relations. *Family Relations*, *47*, 379–384. doi:10.2307/585268

Baltes, P., Lindenberger, U., & Staudinger, U. M. (2006). Life span theory in developmental psychology. In W. Damon & R. M. Lerner (Eds.), *Handbook of Child Psychology* (6th ed., Vol. 1, pp. 569 – 664). Hoboken, NJ: Wiley.

Birditt, K. S., & Fingerman, K. L. (2003). Age and gender differences in adults' descriptions of emotional reactions to interpersonal problems. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *58*, 237–245. doi:10.1093/geronb/58.4.P237

Blanchard-Fields, F., Horhota, M., & Mienaltowski, A. (2008). Social context and cognition. In S. M. Hofer & D. F. Alwin (Eds.), *Handbook of Cognitive Aging: Interdisciplinary Perspectives* (pp. 614–28). Thousand Oaks, CA: Sage.

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, *54*, 579–616. doi:10.1146/annurev.psych.54.101601.145030

Bolger, N., & Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology*, *69*, 890–902. doi:10.1037/0022-3514.69.5.890

Bolkan, C., & Hooker, K. (2012). Self-regulation and social cognition in adulthood: The gyroscope of personality. In S. K. Whitbourne & M. J. Sliwinski (Eds.), *The Wiley-Blackwell Handbook on Adulthood and Aging*. New York, NY: Blackwell Publishing.

Brandtstädter, J. (2009). Goal pursuit and goal adjustment: Self-regulation and intentional self-development in changing developmental contexts. *Advances in Life Course Research*, *14*, 52–62. doi:10.1016/j.alcr.2009.03.002

Brose, A., & Ram, N. (2012). Within-person factor analysis: Modeling how the individual fluctuates and changes across time. In M. R. Mehl & T. S. Conner (Eds.), *Handbook on Research Methods for Studying Daily Life*. New York, NY: Guilford Press.

Brose, A., Schmiedek, F., Lövdén, M., & Lindenberger, U. (2011). Normal aging dampens the link between intrusive thoughts and negative affect in reaction to daily stressors. *Psychology and Aging*, *26*, 488–502. doi:10.1037/a0022287

Carstensen, L. L., & Fredrickson, B. L. (1998). Influence of HIV status and age on cognitive representations of others. *Health Psychology: Official Journal of the*

Division of Health Psychology, American Psychological Association, *17*, 494–503. doi:10.1037/0278-6133.17.6.494

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, *54*, 165–181. doi:10.1146/annurev.psych.093008.100448

Charles, S. T. (2010). Strength and vulnerability integration: A model of emotional well-being across adulthood. *Psychological Bulletin*, *136*, 1068–1091. doi:10.1037/a0021232

Cobb, S. (1976). Social support as moderator of life stress. *Psychosomoatic Medicine*, *38*, 300 – 315.

Connidis, I. A., & McMullin, J. A. (2002). Ambivalence, family ties, and doing sociology. *Journal of Marriage and Family*, *64*, 594–601. doi:10.1111/j.1741-3737.2002.00594.x

Cotrell, V., & Hooker, K. (2005). Possible Selves of Individuals With Alzheimer's Disease. *Psychology and Aging*, *20*, 285–294. doi:10.1037/0882-7974.20.2.285

DeLongis, A., Capreol, M., Holtzman, S., O'Brien, T., & Campbell, J. (2004). Social support and social strain among husbands and wives: A multilevel analysis. *Journal of Family Psychology*, *18*, 470–479. doi:10.1037/0893-3200.18.3.470

Ebner, N., Freund, A., & Baltes, P. (2006). Developmental changes in personal goal orientation from young to late adulthood: From striving for gains to maintenance and prevention of losses. *Psychology and Aging*, *21*, 664–678. doi:10.1037/0882-7974.21.4.664

Elavsky, S., Molenaar, P. C. M., Gold, C. H., Williams, N. I., & Aronson, K. R. (2012).

    Daily physical activity and menopausal hot flashes: Applying a novel within-

    person approach to demonstrate individual differences. *Maturitas*, *71*, 287–293.

    doi:10.1016/j.maturitas.2011.12.011

Fingerman, K. L., & Charles, S. (2010). It takes two to tango: Why older people have the

    best relationships. *Current Directions in Psychological Science*, *19*, 172–176.

    doi:10.1177/0963721410370297

Fingerman, K. L., Hay, E. L., & Birditt, K. S. (2004). The best of ties, the worst of ties:

    Close, problematic, and ambivalent social relationships. *Journal of Marriage and*

    Family, *66*, 792–808. doi:10.1111/j.0022-2445.2004.00053.x

Ford, D. H., & Lerner, R. M. (1992). *Developmental systems theory: An integrative*

    approach. Newbury Park, CA: Sage Publications.

Freyd, M. (1923). The graphic rating scale. *Journal of Educational Psychology*, *14*, 83–

    102.

Friedman, E. M., Karlamangla, A. S., Almeida, D. M., & Seeman, T. E. (2012). Social

    strain and cortisol regulation in midlife in the US. *Social Science & Medicine*, *74*,

    607–615. doi:10.1016/j.socscimed.2011.11.003

Fung, H. H., Carstensen, L. L., & Lutz, A. M. (1999). Influence of time on social

    preferences: Implications for life-span development. *Psychology and Aging*, *14*,

    595–604. doi:10.1037/0882-7974.14.4.595

Fung, H. H., Yeung, D. Y., Li, K.-K., & Lang, F. R. (2009). Benefits of negative social

    exchanges for emotional closeness. *The Journals of Gerontology, Series B:*

Psychological Sciences and Social Sciences, *64B*, 612–621.

doi:10.1093/geronb/gbp065

Gleason, M. E. J., Iida, M., Shrout, P. E., & Bolger, N. (2008). Receiving support as a

mixed blessing: Evidence for dual effects of support on psychological outcomes.

Journal of Personality and Social Psychology, *94*, 824–838. doi:10.1037/0022-

3514.94.5.824

Gruber, D. (2010). Consumer engagement for diabetes technology: Easier said than done.

Journal of Diabetes Science and Technology, *4*, 754–758.

Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span

development. *Psychological Review*, *117*, 32–60. doi:10.1037/a0017668

Hennecke, M., & Freund, A. M. (2010). Staying on and getting back on the wagon: Age-

related improvement in self-regulation during a low-calorie diet. *Psychology and

Aging*, *25*, 876–885. doi:10.1037/a0019935

Hooker, K. (1991). Change and stability in self during the transition to retirement: An

intraindividual study using p-technique factor analysis. *International Journal of

Behavioral Development*, *14*, 209–233. doi:10.1177/016502549101400206

Hooker, K. (1999). Possible selves in adulthood. In F. Blanchard-Fields (Ed.), *Social

Cognition and Aging* (pp. 97 – 122). San Diego, CA: Academic Press.

Hooker, K. (2009). *Personal understanding of life and social experiences (PULSE) study*

(unpublished grant proposal). Center for Healthy Aging Research: Oregon State

University.

Hooker, K., Choun, S., Mejía, S., Pham, T., & Metoyer, R. (in press). A

microlongitudinal study of the dynamic linkaages among personality traits, self-

regulation, and stress in older adults. *Research in Human Development*, (Special

    Issue on Intraindividual Variability).

Hooker, K., & McAdams, D. (2003). Personality reconsidered: A new agenda for aging

    research. *The Journals of Gerontology, Series B: Psychological Sciences and

    Social Sciences*, *58*, 296–304. doi:10.1093/geronb/58.6.P296

House, J. S., Robbins, C., & Metzner, H. L. (1982). The association of social

    relationships and activities with mortality: Prospective evidence from the

    tecumseh community health study. *American Journal of Epidemiology*, *116*, 123–

    140.

Hox, J. (2010). *Multilevel analysis: Techniques and applications* (2nd ed.). New York,

    NY: Routledge.

Krause, N. (2007). Longitudinal study of social support and meaning in life. *Psychology

    and Aging*, *22*, 456 – 469. doi:10.10.1710882-7974.22.1456

Lachman, M. E., Neupert, S., & Agrigoroaei, S. (2011). The relevance of control beliefs

    for health and aging. In K. W. Schaie & S. L. Willis (Eds.), *Handbook of the

    Psychology of Aging* (7th ed., pp. 175–190). New York, NY: Elsevier.

Lang, F. R. (2001). Regulation of social relationships in later adulthood. *The Journals of

    Gerontology, Series B: Psychological Sciences and Social Sciences*, *56B*, 321 –

    326. doi:10.1093/geronb/56.6.P321

Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and

    social relationships. *Psychology and Aging*, *17*, 125–139. doi:10.1037/0882-

    7974.17.1.125

Lang, F. R., Featherman, D. L., & Nesselroade, J. R. (1997). Social self-efficacy and

    short-term variability in social relationships: The MacArthur Successful Aging

    Studies. *Psychology and Aging*, *12*, 657–666. doi:10.1037/0882-7974.12.4.657

Lang, F. R., & Heckhausen, J. (2006). Motivation and interpersonal regulation across

    adulthood: Managing the challenges and constraints of social contexts. In C.

    Hoare (Ed.), *Handbook of Adult Development and Learning* (1st ed., pp. 146–

    166). New York, NY: Oxford University Press.

Lang, F. R., Reschke, F. S., & Neyer, F. J. (2006). Social relationships, transitions and

    personality development across the life span. In D. K. Mroczek & T. D. Little

    (Eds.), *Handbook of Personality Development* (pp. 445–466). Mahwah, NJ:

    Erlbaum.

Lang, F. R., Staudinger, U. M., & Carstensen, L. L. (1998). Perspectives on

    socioemotional selectivity in late life: How personality and social context do (and

    do not) make a difference. *The Journals of Gerontology, Series B: Psychological

    Sciences and Social Sciences*, *53B*, 21–30. doi:10.1093/geronb/53B.1.P21

Maehr, M. L., & Kleiber, D. A. (1981). The graying of achievement motivation.

    American Psychologist, *36*, 787–793. doi:10.1037/0003-066X.36.7.787

Martini, T. S., & Busseri, M. A. (2010). Emotion regulation strategies and goals as

    predictors of older mothers' and adult daughters' helping-related subjective well-

    being. *Psychology and Aging*, *25*, 48.

Martire, L. M., Schulz, R., Wrosch, C., & Newsom, J. T. (2003). Perceptions and

    implications of received spousal care: Evidence from the Caregiver Health Effects

    Study. *Psychology and Aging*, *18*, 593–601. doi:10.1037/0882-7974.18.3.593

Nesselroade, J. R. (1990). Adult personality development: Issues in assessing constancy and change. In A. Rabin, R. A. Zucker, R. A. Emmons, & S. Frank (Eds.), *Studying Persons and Lives* (pp. 41–85). New York: Springer.

Nesselroade, J. R., & Ford, D. H. (1985). P-technique comes of age: Multivariate, replicated, single subject designs for research on older adults. *Research on Aging*, *7*, 46–80.

Nesselroade, J. R., & Ram, N. (2004). Studying intraindividual variability: What we have learned that will help us understand lives in context. *Research in Human Development*, *1*, 9–29. doi:10.1207/s15427617rhd0101&2_3

Neugarten, B. L., Havighurst, R., & Tobin, S. (1968). Personality and patterns of aging. In B. L. Neugarten (Ed.), *Middle Age and Aging* (pp. 173–177). Chicago, IL: University of Chicago Press.

Neupert, S. D., Almeida, D. M., & Charles, S. T. (2007). Age differences in reactivity to daily stressors: The role of personal control. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *62*, 216–225.

Newsom, J. T. (1999). Another side to caregiving: Negative reactions to being helped. *Current Directions in Psychological Science*, *8*, 183–188.

Pinheiro, J., Bates, D., DebRoy, S., & R Development Core Team. (2012). nlme: Linear and nonlinear mixed effects models. *R package version 3.1-106*.

Rafaeli, E., Cranford, J., Green, A., Shrout, P., & Bolger, N. (2008). The good and bad of relationships: How social hindrance and social support affect relationship feelings in daily life. *Personality and Social Psychology Bulletin*, *34*, 1703–1718. doi:10.1177/0146167208323742

Ram, N., Conroy, D., Hyde, A., & Molloy, L. (2012). Tethering theory to method: Using

measures of intraindividual variability to operationalize individuals' dynamic

characteristics. In G. Hancock & J. Harring (Eds.), *Advances in Longitudinal

Modeling in the Social and Behavioral Sciences*. New York, NY: Routledge.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models* (2nd ed.).

Newbury Park, CA: Sage.

Rook, K. S. (1984). The negative side of social interaction: Impact on psychological

well-being. *Journal of Personality and Social Psychology*, *46*, 1097 – 1108.

doi:10.1037/0022-3514.46.5.1097

Rook, K. S., Mavandadi, S., Sorkin, D. H., & Zettel, L. A. (2007). Optimizing social

relationships as a resource for health and well-being in later life. In C. M. Aldwin,

C. L. Park, & A. Spiro (Eds.), *Handbook of Health Psychology and Aging* (pp.

267–285). New York, NY: Guilford.

Ruehlman, L., & Wolchik, S. (1988). Personal goals and interpersonal support and

hindrances as factors in psychological distress and well-being. *Journal of

Personality and Social Psychology*, *55*, 293–301. doi:10.1037/0022-

3514.55.2.293

Seeman, T. E. (2000). Health promoting effects of friends and family on health outcomes

in older adults. *American Journal of Health Promotion*, *14*, 362–370.

doi:10.4278/0890-1171-14.6.362

Sorkin, D. H., & Rook, K. S. (2006). Dealing with negative social exchanges in later life:

Coping responses, goals, and effectiveness. *Psychology and Aging*, *21*, 715 – 725.

doi:IO.1037/II~X2· 7974.21 A.710

Stack, C. (1974). *All our kin*. New York, NY: Basic Books.

Umberson, D., & Montez, J. K. (2010). Social relationships and health. *Journal of Health and Social Behavior*, *51*, 54–66. doi:10.1177/0022146510383501

Walen, H. R., & Lachman, M. E. (2000). Social support and strain from partner, family, and friends: Costs and benefits for men and women in adulthood. *Journal of Social and Personal Relationships*, *17*, 5–30. doi:10.1177/0265407500171001

Zevon, M. A., & Tellegen, A. (1982). The structure of mood change: An idiographic/nomothetic analysis. *Journal of Personality and Social Psychology*, *43*, 111–122. doi:10.1037/0022-3514.43.1.111

Table 1

Examples of PULSE Participants' Social Goals, Importance Statements, and Cue Words

Goal	Importance	Cue Words
Achievement-Oriented Goals		
Become closer to my spouse, and work through awkward moments.	We have grown a bit apart, and I want to be closer	Close to my wife
Reach out and make more friends	I am too comfortable being alone, and it's time to make friends	Make new friends
More fun spontaneous time with my husband	He likes to be social, and now that we're both retired, we've got a lot of time on our hands	Fun times and date night
Listen more and be nice to people	I am often critical, and I want people in my life	Kind listening
Become closer to my new daughter in law	She is important to my son, and I want to be in their life	My new daughter
Maintenance-Oriented Goals		
Stay connected with distant friends and family	Even though we live far apart, they are important to me	Stay connected
Be supportive to my family	Family is important, and I want them to know they can count on me	Support family
Keep up with my active friends	I love running with them, it's exercise and social	Running buddies
Keep in touch with my siblings	They are important to me, I do not want to grow apart	Brother and sister
Be social, but honor my personal limits.	It's so easy for me to get ahead of myself	Social within boundaries

Note: The above statements are derived from PULSE participants' goals, and although

representative of the dominant themes, these are not direct quotations.

Table 2

Correlation Matrix and Descriptive Statistics of Between-Person Characteristics

Variable	1	2	3	4	5	6	7
1. Social Goal							
2. Support	.69***						
3. Hindrance	-.20*	.01					
4. Achieve Goal	-.37***	-.19*	.08				
5. Age	.04	.02	-.01	-.01			
6. Gender	-.14	-.17	.05	-.01	.00		
7. Group	-.12	-.05	.28***	.09	.17	-.02	
M	62.83	49.72	16.18	.57	63.29	.88	.77
SD	20.11	24.10	16.06		7.54		

Note. Gender (1 = Female, 0 = Male), Achieve (1 = Achieve, 0 = Maintain), and Group (1 = Daily, 0 = Burst).

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

Table 3

Descriptive Statistics: Intraindividual Means, Standard Deviations, and Correlations of Time-Variant Parameters

	Maintenance		Achievement		Total	
	M	*SD*	*M*	*SD*	*M*	*SD*
Intraindividual means						
Goal progress*	71.37	16.65	56.27	20.08	62.83	20.11
Social support*	54.98	25.51	45.68	22.13	49.72	24.10
Social hindrance	14.72	15.62	17.30	16.31	16.18	16.06
Intraindividual *SD*s						
Goal progress	16.42	7.56	19.23	8.18	18.01	8.04
Social support	19.75	7.44	19.49	8.49	19.60	8.05
Social hindrance	15.00	8.52	13.31	8.65	14.05	8.63
Intraindividual correlations						
$r_{goal\ progress,\ support}$	.52	.32	.57	.29	.55	.31
$r_{goal\ progress,\ hindrance}$*	-.23	.20	-.10	.32	-.15	.28
$r_{support,\ hindrance}$*	-.15	.24	-.01	.32	-.07	.30

* Differences revealed between participants with an achievement- and maintenance-oriented goal, $p < .05$.

Table 4

Multilevel Random Coefficient Models of Social Regulatory Processes and Between-person Differences Across Goal Orientation.

Parameter	Model 1 B	Model 1 (SE)	Model 2 B	Model 2 (SE)	Model 3 B	Model 3 (SE)
Intercept	63.05***	(1.48)	63.06***	(1.43)	64.22***	(1.38)
Day	.07***	(.01)	.07***	(.01)	.07***	(.01)
Support WP	.49***	(.03)	.48***	(.03)	.48***	(.03)
Support BP	.59***	(.06)	.59***	(.05)	.57***	(.05)
Supp WPxBP	.002*	(.001)	.002	(.001)	.002	(.001)
Hindrance WP			-.07**	(.02)	-.06**	(.02)
Hindrance BP			-.25***	(.07)	-.23**	(.07)
Hind WPxBP			-.003*	(.001)	-.004**	(.001)
Achieve					-9.56***	(2.69)
AchieveXSup					.11*	(.06)
AchieveXHin					.08*	(.04)

Random Effects (*SD*)						
	estimate	95% CI	estimate	95% CI	estimate	95% CI
u	14.45	(12.5, 16.7)	13.90	(11.8, 16.5)	13.08	(11.4, 15.17)
u Day	.11	(.09, .14)	.11	(.08, .14)	.10	(.09, .13)
u Support	.27	(.23, .32)	.26	(.22, .31)	.26	(.22, .18)
u Hindrance			.14	(.11, .19)	.14	(.11, .18)
e	16.85	(16.4, 17.4)	16.61	(16.1, 17.1)	14.66	(16.1, 17.1)
$e[f(men)]$	.58	(.55, .61)	.58	(.55, .61)	.58	(.55, .61)
$e[f(older)]$	.87	(.84, .90)	.87	(.83, .90)	.87	(.83, .90)
$e[f(oldest)]$	.89	(.85, .94)	.90	(.85, .95)	.90	(.85, .95)
Φ_1	.21	(.19, .23)	.21	(.19, .23)	.21	(.19, .23)
Φ_2	.07	(.04, .10)	.07	(.04, .10)	.07	(.04, .10)

Model Fit						
R^2 Within	.45		.46		.46	
R^2 Between	.46		.50		.56	
-2*LL	57755.52		57563.42		57552.12	

Note. WP = within-person; BP = between-person. Coefficients are unstandardized. Goal progress, support, and hindrance = 0 to 100. Models include direct fixed effects for gender, age, and group, which were not significant. Variance function: Younger women are the reference group. $52 \geq$ old $\leq 60 >$ older $\leq 70 >$ oldest.

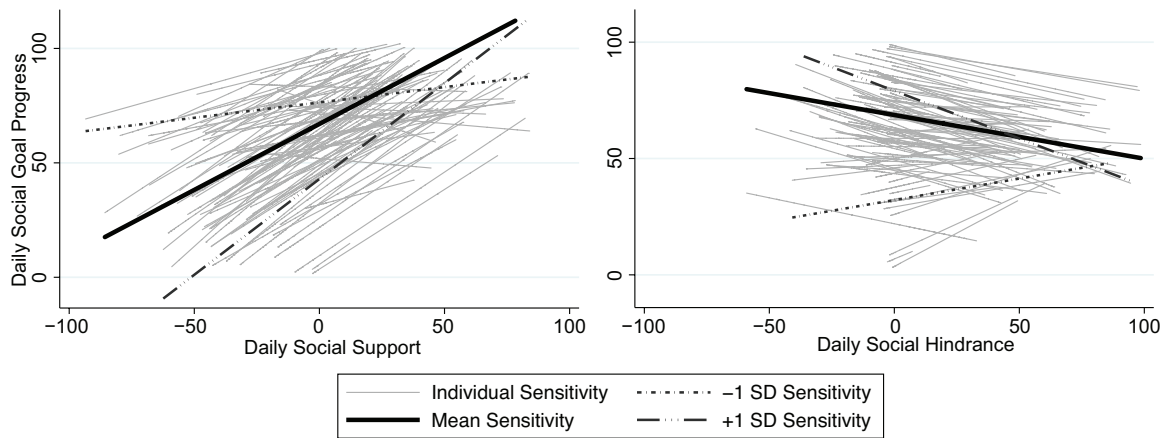* $p \leq .05.$ ** $p \leq .01.$ *** $p \leq .001$

Figure 1. Between-person variability in support and hindrance sensitivity.

Light grey lines represent empirical Bayes predictions of participant-specific regression

lines of daily support and hindrance on daily social goal progress. The solid line

represents the fixed effect of daily experiences of support and hindrance. Dashed lines

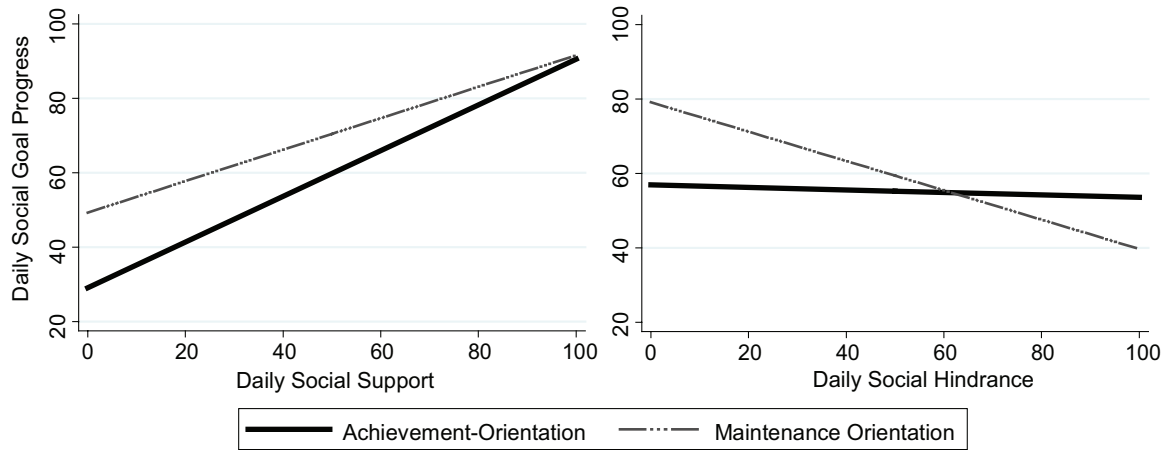represent the lower and upper distributions of support and hindrance reactivity in this

sample.

Figure 2. Support and hindrance sensitivity as a function of goal orientation.