

Satisfaction of Basic Psychological Needs in an Interdependence Model of Fathers' Own  
Aspirations and Those of Their Adolescent Children

Takuma Nishimura

University of Tokyo and University of Rochester

Emma L. Bradshaw

Australian Catholic University

Edward L. Deci

Australian Catholic University and University of Rochester

Richard M. Ryan

Australian Catholic University

Authors Note

Takuma Nishimura is now research associate at Kochi University of Technology.

Emma L. Bradshaw is PhD Candidate, Institute for Positive Psychology and  
Education at Australian Catholic University, North Sydney Australia.

Edward L. Deci is a Professorial Fellow at Australian Catholic University, North Sydney  
Australia; Gowen Professor Emeritus in the Social Sciences at the University of Rochester, New  
York; and Professor of Management and Motivation, University of Southeast

This article has been accepted for publication and undergone full peer review but has not been  
through the copyediting, typesetting, pagination and proofreading process, which may lead to  
differences between this version and the [Version of Record](#). Please cite this article as [doi:  
10.1111/SODE.12473](#)

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Norway, Honefoss, Norway.

Richard M. Ryan is Professor at the Institute for Positive Psychology and Education, Australian Catholic University, North Sydney Australia, and Research Professor, Department of Psychology, University of Rochester, Rochester, NY.

Correspondence concerning this article should be addressed to Takuma Nishimura (ORCID: 0000-0002-3508-8634), Division of Core Studies, Kochi University of Technology, 185 Miyanokuchi, Tosayamada, Kami-city, Kochi, 782-8502, JAPAN.  
E-mail: nishimu.takuma@gmail.com (Tel: +81-887-57-2103)

### **Conflicts of Interests**

The authors declare that they have no conflicts of interest.

### **Acknowledgements**

This research was supported by Grant-in-Aid for JSPS (Japan Society for the Promotion of Science) Fellows.

The data that support the findings of this study are available on request.

DR. TAKUMA NISHIMURA (Orcid ID : 0000-0002-3508-8634)

Article type : Original Manuscript

Running head: FATHERS' AND CHILDREN'S ASPIRATIONS

Satisfaction of Basic Psychological Needs in an Interdependence Model of Fathers'  
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**Abstract**

Anchored in *self-determination theory* (SDT; Ryan & Deci, 2017), we used a sample of 310 Japanese father-child dyads (fathers  $M_{\text{age}} = 47.95$ ; children  $M_{\text{age}} = 14.98$ , 50% female), to investigate: 1) the structure of aspirations in a Japanese sample, 2) the association between fathers' own intrinsic and extrinsic aspirations and the aspirations reported by their adolescent children, 3) the links between child-reported father autonomy support and children's self-reported aspirations, and 4) the associations between fathers' own and children's own aspirations and the basic psychological needs satisfaction of both fathers and children.

Confirmatory factor analysis demonstrated acceptable fit for the theorized model of intrinsic and extrinsic aspirations specified by SDT. Correlations revealed positive associations between the aspirations of fathers' and those endorsed by their children, which were not moderated by father's autonomy support. Actor-partner interdependence modeling indicated that when fathers were relatively intrinsic in their orientations, basic psychological need satisfaction was higher for both themselves and their children. These findings highlight the relevance of intrinsic and extrinsic aspirations to the well-being of youth and the interplay between fathers' and children's aspirations, suggesting that both fathers' intrinsic aspirations and parenting styles are associated with children's basic psychological needs satisfaction.

**Keywords:** adolescents, aspirations, basic psychological needs, fathers, self-determination theory.



Accepted Article

The content of one's aspirations, or life goals, is an important determinant of wellness. Goal contents theory (GCT)—one of *self-determination theory's* (SDT; Ryan & Deci, 2017) six mini-theories—holds that having an orientation towards intrinsic aspirations (e.g., personal growth, affiliation, community, and physical fitness) relative to extrinsic aspirations (e.g., financial success, attractive appearance, and social recognition) promotes more optimal functioning (Kasser & Ryan, 1996; 2001). Indeed, intrinsic and extrinsic aspirations have been associated with disparate levels of wellness across countries (Kasser & Ahuvia, 2002) and age-groups (Mackenzie, Karaoylas, & Starzyk, 2018). Given that aspirational content is a key predictor of well-being, and understanding individual wellness is increasingly of global importance (Diener, Kesebir, & Lucas, 2008), there is a need to better understand the contextual and developmental correlates of intrinsic and extrinsic aspirations. Knowledge about these correlates may be especially relevant for adolescents, who are experiencing a developmental period during which the foundations of adult value systems are being laid (Schwartz, 2012).

Some evidence suggests that adolescent's aspirations may be linked to the aspirations of their close others (Soenens, Wuyts, Vansteenkiste, Mageau, & Brenning, 2015), as well as to the degree to which their parents are autonomy-supportive (Kasser, Koestner, & Lekes, 2002). However, such claims have been under-researched, and focus primarily on the role of mothers and usually in Western, non-individualistic countries. These limitations affect

the generalizability of results to fathers and to non-individualistic cultures, in which parental, in particular paternal, styles and roles can differ from individualistic cultures (Pomerantz, Ng, & Wang, 2008). To expand the existing evidence and address the problem of generalizability, the current study assesses the links between the intrinsic and extrinsic aspirations of Japanese fathers and those of their adolescent children. We also examine the degree to which Japanese fathers' autonomy-supportive parenting relates to adolescent's aspirations. SDT argues that autonomy-support is associated with the development of healthier, intrinsic aspirations (Grolnick, Deci, & Ryan, 1997). Yet it has been suggested that autonomy may be less central in collectivistic countries (Pomerantz et al., 2008). Therefore, the question of whether autonomy-support relates to adolescent aspirations is especially important to address in a non-individualistic context, such as Japan.

Finally, we test the associations between fathers' and adolescents' own intrinsic and extrinsic aspirations and the well-being of both fathers and their adolescent children (for example, to what extent does fathers' relative intrinsic aspiring link to the basic psychological needs of their children). There is considerable evidence to suggest that aspirations affect one's own well-being (Kasser & Ryan, 1993, 1996, 2001), and some evidence to suggest that one's own aspirations relate to the aspirations of close others (Soenens et al., 2015). However, to our knowledge, no study has examined the link between parents' aspirations and the well-being of their offspring. Although consequences to one's own well-being may not be

sufficient to promote a focus on intrinsic aspirations, knowledge that one's own aspirations relates to the psychological well-being of their close others may be uniquely persuasive. Such information may be especially salient for parents, who presumably strive to achieve and maintain well-being in their children. Taken together, the results of this study elucidate familial correlates of adolescent's aspirations, informing how fathers' strivings relate to the healthy aspiring and wellness of their children.

### **The Link Between Own and Close Others' Aspirations**

SDT and other developmental perspectives (e.g., Grusec, 1997) hold that humans have a natural propensity to internalize ambient values. Thus, one's own life goals likely relate to the aspiration orientation of close others, particularly in the family context where value sharing tends to be especially potent (Kuczynski, Marshall, & Schell, 1997). In other words, if one family member endorses a healthy, well-being-conductive aspiration, close others may aspire comparably. Similarly, if a family member orients towards materialistic, ill-being-related aspirations, those around them may also be extrinsically-oriented.

Evidence examining the link between own and others' aspirations is sparse, but that which exists suggests that parents' values and aspirations are meaningfully associated with the aspirations of their children (Chew & Wang, 2010; Henderson-King & Brooks, 2009; Kasser, Ryan, Zax, & Sameroff, 1995; Moulton, Flouri, Joshi, & Sullivan, 2015; Roman et al., 2015; Soenens et al., 2015). The children of mothers who endorse extrinsic aspirations

experience pressure to pursue extrinsic aspirations themselves (Soenens et al., 2015), and parents (the samples usually comprise mostly mothers) who value popularity have more extrinsically-oriented children (Moulton et al., 2015). Further, children's own valuing of aspirations for personal growth, affiliation, and financial success has been associated with the extent to which their mothers valued those aspirations (Kasser et al., 1995). These studies suggest that there is some contagion in the aspirations of parents and those of their children.

### **Addressing Gaps in The Literature**

The extant literature on the familial correlates of intrinsic and extrinsic aspirations remains limited in two primary ways. The first limitation concerns the limited generalizability of findings due to Western-centric sampling, and the second concerns the fact that studies primarily examine mothers, leaving open the question about the relation between fathers' aspirations and child well-being. Below we discuss each of these limitations and describe the ways this study will address them.

#### ***Western-centric Sampling***

Studies of parent and child aspirations have been conducted primarily in Western countries such as the United States (Kasser et al., 1995), the United Kingdom (Moulton et al., 2015), and Belgium (Soenens et al., 2015). While the benefits of relative intrinsic aspiring, and the disadvantages of relative extrinsic aspiring, have been established in diverse cultures and nations (e.g., Kim, Kasser, & Lee 2003; Ryan, Chirkov, Little, Sheldon, Timoshina, &

Deci 1999), to our knowledge only two studies have utilized Japanese samples (Kitamura, Kijima, Takeuchi, & Tomoda, 2014; Nishimura & Suzuki, 2016a). The differential correlates of intrinsic and extrinsic aspirations are considered, and have been largely found to be, universal (Bradshaw, 2019). However, East Asian cultures, in particular Japan, are important litmus tests for claims of universality, because although Japan and the United States (where many scales, including the Aspiration Index were developed) are economically and technologically similar, the cultures differ markedly, thus psychological variables could function differently, and conclusions previously drawn about important variables may not generalize.

One of the key ways East Asian countries such as Japan are thought to differ from Western countries is in the degree to which cultures are individualistic or collectivistic (Lansford, Antonucci, Akiyama, & Takahashi, 2005). Western cultures, such as the United States are theoretically individualistic which is typified by an emphasis on individual independence. Although recent Japan seems to have a different cultural perspective from the original assumption, Japan was theoretically hypothesized collectivistic, meaning the culture emphasizes relationships and interconnectedness. Some have questioned the universality of key SDT variables—for example, autonomy—in non-individualistic or collectivistic contexts, but evidence suggests that experiences of autonomous motivation predict adolescent educational adjustment and well-being even in Japan (Hayamizu, 1997). Indeed, many “Western” constructs have been translated from English to Japanese, often demonstrating theoretically-consistent scale

structures and similar predictive utility to the English versions (Hayamizu, 1997; Nishikawa, Sundbom, & Hägglöf, 2010; Uji, Sakamoto, Adachi, & Kitamura, 2014).

The Aspiration Index has been translated into Japanese (Nishimura & Suzuki, 2016a), with the translated scale reflecting the intrinsic and extrinsic goal distinction specified by Kasser and Ryan (1993, 1996, 2001), whilst also demonstrating theoretically- consistent differential links between well-being and intrinsic and extrinsic goals. However, a study from Kitamura et al. (2014) did not replicate the intrinsic and extrinsic structure of aspirations in their Japanese sample. Instead they identified what were labeled as an agency factor (comprising financial success, physical fitness, community feeling, and attractive appearance) and a communality factor (comprised of affiliation, personal growth, and social recognition).

Kitamura et al.'s (2014) result is anomalous within the broader literature, which generally supports the universality of the intrinsic and extrinsic structure of aspirations across nations and cultures (Ryan, et al., 1999). In addition, the two Japanese studies used different measures of aspirations, perhaps explaining their disparate results. A short 14-item version of the Aspiration Index, was used in Kitamura et al.'s (2014) study, rather than the full 32-item scale validated by (Nishimura & Suzuki, 2016a). Also, in translating the scale into Japanese, the authors skipped final confirmation of the items with the original authors which is important to the back-translation process. Arguably, the divergent structure of aspirations

reported by Kitamura et al. (2014) could be a function of the short scale which may not have been an adequate representation of the constructs as described in English, rather than evidence that aspirations are experienced differently in Japan. For these reasons, it is important that the structure reported by Kitamura et al. (2014) be tested using the comprehensive 32-item Japanese Aspiration Index (which used back-translation) and compared to the intrinsic and extrinsic structure of aspirations theorized (and widely- demonstrated) by GCT. Accordingly, this study evaluates both structures of aspirations in a Japanese sample using confirmatory factor analysis (CFA). Verifying the structure of aspirations is an essential first step to assessing aspiration correlates in Japanese fathers and children.

### ***The Absence of Fathers in the Research***

Research in the domain of parent-child values and aspirations is restricted by an emphasis on mothers. Even when both maternal and paternal caregivers are included in such studies, response rates from mothers tend to be disproportionately high (Hollmann, Gorges, & Wild, 2018). A broad range of evidence suggests that paternal engagement and support plays an important role in adolescent development and well-being (Amato, 1998). However, studies have found that Japanese fathers tend to be more emotionally distant and less involved with their children than fathers from other countries (Ishii-Kuntz et al., 2004). Such evidence may suggest that there could be less value-sharing between fathers and children in Japan.

The limited evidence that has investigated associations between paternal values and child outcomes has shown that young women who perceive their fathers to be appearance- oriented (which is more extrinsic), report more extrinsic aspirations (Henderson-King & Brooks, 2009). Roman et al. (2015) found that paternal authoritarian parenting—which, in contrast to autonomy-supportive parenting, is typified by coercion and non-reasoning— correlated with children’s extrinsic aspirations. Similarly, Chew and Wang (2010) found that paternal autonomy-support was positively associated with their children’s intrinsic aspirations, but not their extrinsic aspirations. In addition, Japanese fathers appear to play a determining role in child well-being, despite spending less time with their families (Ishii- Kuntz et al., 2004). In a nationally representative sample of Japanese adolescents, the quality of the father-child relationship independently predicted child psychological well-being, controlling for the quality of the mother-child relationship (Videon, 2005). Based on the preceding evidence, there is good reason to expect that Japanese fathers’ aspirations relate to the aspirations of their children, even though their roles may vary from other cultures.

***Autonomy Support and Aspirations in Japan.***

An additional value in using a Japanese sample of fathers (and children) concerns SDT’s claim that aspiration internalization will be greater if children experience their parents as autonomy-supportive (Grolnick et al., 1997). That is, if parents are seen to reliably provide empathy, choices, and meaningful rationales to their children, the children will be more likely



to identify with the parents' values. In particular, children tend to more readily internalize beneficial (i.e. intrinsic) life goals when their parents engage in autonomy-support (Kasser et al., 2002; Williams, Hedberg, Cox, & Deci, 2000). The link between autonomy-support and the internalization of aspirations is pertinent in the Japanese context not only because the variables have been minimally assessed there, but also because there is evidence suggesting that parents in Eastern countries such as China and Hong Kong are less autonomy-supportive than parents in Western countries (Pomerantz et al., 2008). Despite these cultural differences in the level of autonomy provided to Japanese youth, the benefits of receiving autonomy- support have been demonstrated in some Japanese samples (e.g., Oga-Baldwin, Nakata, Parker, & Ryan, 2017), though to our knowledge has not been examined in father-child relationships. Thus, we test if perceived autonomy-support from fathers predicts intrinsic aspirations in Japanese youth, as well as moderates the link between father's and children's intrinsic aspirations.

### **Assessing the Link Between Own Aspirations and Others' Well-being**

Thus far, we have demonstrated that individuals' aspirations affect their own flourishing, and that aspirations can be shared among family members (Davids, Ryan, Yassin, Hendrickse, & Roman, 2016; Kasser et al., 1995; Kuczynski et al., 1997). What remains unclear is if the differential well-being effects of intrinsic and extrinsic aspirations are also shared in families. In concrete terms, if intrinsic aspirations tend to benefit the aspirer, do

those benefits extend to close others? To our knowledge, the correlation between own aspirations and other's psychological well-being has not been tested in parent child relationships. If children benefit from their parents' intrinsic aspirations (or pay a price for their extrinsic aspirations), such information may provide unique motivation to orient towards beneficial aspirations, particularly for parents striving to achieve and maintain their child's well-being.

Although correlational analyses have appropriately been used to establish associations between parent and child aspirations, assessing links between fathers' and children's aspirations and fathers' and children's wellness is complicated by the dyadic nature of such data (Little & Card, 2005). Tests of inference such as regression assume that predictor variables are minimally correlated and, as the evidence reviewed above suggests, parent and child aspirations tend to be linked. Thus, parent and child aspiration scores and their indices of well-being are likely to be interdependent. Indeed, Benish-Weisman, Levy, and Knafo (2013) demonstrated that the link between parent and child values is bidirectional. Parents influence the values of their children, but they are also influenced by the values their children hold. The actor-partner interdependence model (APIM; Kashy & Kenny, 2000) is a method that allows the nonindependence in dyadic data to be modelled in tests of inference (Kenny, Kashy, & Cook, 2006). APIM

In dyadic data, the APIM allows for the simultaneous estimation of four paths. The

two *actor effects* estimate the links between each dyad members' self-reported predictor (in our case, aspirations) and outcome variables (in our case, well-being), and the two *partner*

*effects* estimate the association between one's self-reported predictor variable and the other's self-reported outcome variable, all while accounting for the interdependence of the variables. In the context of GCT, use of the APIM permits assessment of the links between parent aspirations and child well-being, and child aspirations and parent well-being, controlling for the spurious effects associated with multicollinearity. Such an assessment is the final aim of the current study.

### **Objectives of the Present Study**

Using a sample of Japanese father-child dyads, we addressed four primary research questions, basing our hypotheses on the preceding literature review:

**Research Question 1:** Does the GCT structure of aspirations replicate in a sample of Japanese fathers and children? Using CFA with the comprehensive 32-item of the Aspiration Index, instead of the brief 14-item version employed by Kitamura et al. (2014), we expected to replicate the structure of aspirations hypothesized in GCT in this study (Hypothesis 1).

**Research Question 2:** What is the association between fathers' and children's intrinsic aspirations, and between fathers' and children's extrinsic aspirations? Given SDT's general assumption that children tend to internalize the goals and aspirations of caregivers, we expected to find positive correlations between fathers' and their children's intrinsic

aspirations, and between fathers' and their children's extrinsic aspirations (Hypotheses 2 and 3).

**Research Question 3:** Does the degree to which a child perceives their father as autonomy-supportive: a) independently predict children's aspirations, and b) moderate the link between father's own and children's own intrinsic aspirations? In other words, if a father is more autonomy-supportive, will the link between his own intrinsic aspirations and the intrinsic aspirations of his child be stronger? Kasser et al. (1995) found that less maternal autonomy support predicted more extrinsic aspiring, thus it seems that autonomy-support may be especially salient for the internalization of intrinsic aspirations. Based on this evidence, we expected that autonomy-support would moderate the link between fathers' and children's intrinsic aspirations but not their extrinsic aspirations (Hypothesis 4). More concretely, the link between father's intrinsic aspirations and children's intrinsic aspirations should be stronger if children perceive their father to be autonomy-supportive.

**Research Question 4:** We examined the associations between fathers' and children's aspirations, and their basic psychological needs satisfaction using APIM. We opted to use basic psychological need satisfaction to index well-being because SDT focusses on autonomy (agency and choice), competence (ability and effectiveness), and relatedness (connectedness to others) satisfactions as essential elements of psychological wellness (Ryan & Deci, 2017). We expected both actor effects (the path from one's own aspirations to one's own basic

psychological needs satisfaction) in the APIM to be statistically significant. Specifically, we expected the actor effects between intrinsic aspirations and basic psychological needs satisfaction to be positive (Hypothesis 5), and the actor effects between extrinsic aspirations and basic psychological needs satisfaction to be negative (Hypothesis 6).

We also expected both partner effects (the path from one's own aspirations to the other person's basic psychological needs satisfaction) in the APIM to be statistically significant. Intrinsic aspirations, particularly those for affiliation and community feeling, necessarily involve building close relationships and giving to others. Caring for others benefits one's own sense of relatedness, but it should also benefit those to whom one demonstrates care. Therefore, the degree to which a father or child emphasizes intrinsic aspirations, should be associated with higher levels of needs satisfaction in the other person (Hypothesis 7). Conversely, because extrinsic aspirations are built on social and interpersonal comparisons which are linked with lower levels of quality of close relationships (Campbell & Foster, 2002), we expected the partner effects for extrinsic aspirations to be negative. Higher levels of father's or children's emphasis on extrinsic aspirations will likely be associated with lower levels of the basic psychological needs satisfaction of the other (Hypothesis 8).

## Method

### Participants

A total of 310 Japanese father-child dyads; 310 fathers ( $M_{\text{age}} = 47.95$ ) whose

310

children were 9<sup>th</sup> grade junior-high-school students (155 boys and 155 girls,  $M_{age} = 14.98$ ). Participants were recruited by a web survey company (see below), with pre-specifications being that fathers were employed, were the primary income earner in the family, and had children of eligible age. The reason for recruiting fathers who were primary income earners was to reflect the typical Japanese family structure (Gender Equality Bureau Cabinet Office, 2015). Demographics are shown in Table 1.

### **Procedure and ethical considerations**

A web survey company in Japan, *Macromile*, recruited participants. Fathers who were enrolled provided their consent to participate, as well as parental consent for their children to participate. Two days later, they received the survey packages. All participants were informed that: (1) the survey includes several confidential questions; (2) the privacy of those taking part in this survey will be protected; (3) participating in this survey is not mandatory, and (4) participants can withdraw from this survey at any time. Participants received credits to exchange for goods from *Macromile*. The ethics committee of the institution with which the first author was affiliated exempted the project review because this research used web survey company for data collection.

### **Missing data**

There were no missing data because the questionnaire form provided by *Macromile*

supported responses for all items. When participants did not respond to an item, that item was

highlighted in red and the participant was unable to proceed until a response was selected or the participant opted out of the study.

## Measures

**Aspirations.** All measures and instructions in this survey were completed in Japanese. Fathers and their children completed the 32-item Aspiration Index (Kasser & Ryan, 1993, 1996; translated version by Nishimura & Suzuki, 2016a). Following the sentence stem “How important it is to you that, in the future, ...”, this scale presents participants with 18 items to index intrinsic aspirations comprising personal growth (e.g., “you will be the one in charge of your life”), affiliation (e.g., “you will have good friends whom you can count on”), community feeling (e.g., “you will donate time or money to charity”), and physical fitness (e.g., “you will be physically fit”), and 14 items for extrinsic aspirations comprising financial success (e.g., “you will have a lot of expensive possessions”), attractive appearance (e.g., “you will have people comment often about how attractive you look”), and social recognition (e.g., “your name will be known by many people”). Items were rated from 1 (*not at all important*) to 5 (*very important*). Intrinsic and extrinsic aspirations were calculated by averaging scores for the specific aspirations in each domain. For intrinsic aspirations, Cronbach’s alpha coefficients, were .93 for fathers and .95 for children, respectively, indicating excellent internal consistency. Cronbach’s alpha coefficients for extrinsic aspirations were .92 for fathers and .94 for children, respectively.

**Satisfaction of basic psychological needs.** Fathers and children reported their own basic psychological needs satisfaction using the scale developed by Chen et al. (2015) and translated into Japanese by Nishimura and Suzuki (2016b). A total of 12 items measure satisfaction of autonomy (e.g., “I feel a sense of choice and freedom in the things I undertake”), relatedness (e.g., “I feel that the people I care about also care about me”), and competence (e.g., “I feel confident that I can do things well”). Each item was rated on a 7- point scale ranging from 1 (*completely disagree*) to 7 (*completely agree*). Responses to the 12 items were aggregated to form a general basic psychological needs satisfaction variable. Cronbach’s alpha coefficients for total basic psychological need satisfaction were .93 for both fathers and children.

**Perceived autonomy-support from fathers.** Children completed six items reporting the degree to which they experience their fathers (e.g., “my father, whenever possible, allows me to choose what to do”) as being autonomy-supportive, using the perceptions of parents’ scale (Niemic, et al., 2006; Robbins 1994). Although the original scale consisted of 9 items, we did not use the 3 reversed-items because reversed items may contaminate responses and yield confusion (e.g., van Sonderen, Sanderman, & Coyne, 2013). Translation into Japanese was conducted by the first author with supervision by an English-translation company.

Respondents rated each item on the same 7-point scale. Cronbach’s alpha for paternal autonomy-support was .95.



## **Analytic strategy**

We evaluated the structure of aspirations with CFA using the lavaan package (Rosseel, 2012) in R 3.5.1 (R Core Team, 2018). First, we tested Kitamura et al.'s (2014) agency and communality structure of aspirations (Online Supplementary Materials S1) and compared it to the theoretically-anchored GCT structure of intrinsic and extrinsic aspirations (Online Supplementary Materials S2). Our sample size of 310 fathers and 310 children is modest but appropriate for our purposes. In simulation studies Wolf, Harrington, Clark, and Miller (2013) demonstrated that more-than-three-factor models with at least three indicators per factor required a sample of 200 participants at factor loadings approaching .65. In addition, more indicators (up to six) per factor reduce the minimum required sample size. Given we have four- to five-items for each latent factor, this sample size is acceptable for our CFA model. Only four item's factor loadings were below .65 in the fathers' model and one item in children's model (Online Supplementary Materials S3). The average factor loading was .73 (range: .49- .86) and .77 (range: .61- .84) for the fathers' and children's model, respectively. Commonalities in factors can bias that accuracy of parameter estimates and model fit (e.g., lower factor loadings mean lower commonalities and higher measurement error). Therefore, factor loadings help to justify the utility of sample sizes in structural equation modeling (see MacCallum et al., 1999).

To test the links between fathers' and children's intrinsic and extrinsic aspirations and

own and other's basic psychological needs satisfaction, we used APIM in R, in conjunction with an R-based computer program (APIM\_SEM; Stas, Kenny, Mayer, & Loeys, 2018). First, because general aspiration engagement (regardless of the intrinsic or extrinsic domain) is linked to well-being outcomes (Kasser & Ryan, 1993, 1996), we controlled for total aspirations by following the procedure recommended by Kasser and Ahuvia (2002) and employed by many others (Brown, Kasser, Ryan, Linley, & Orzech, 2009; Kasser et al., 2014). The procedure involves subtracting the mean across all aspirations from the intrinsic and extrinsic means. The resulting scores gives an indication of the relative emphasis on intrinsic or extrinsic aspirations within the broader pattern of aspirations. By using relative intrinsic and extrinsic aspirations in our APIM, we assess the degree to which emphasizing intrinsic or extrinsic aspirations links to own and other's basic psychological needs satisfaction. In the APIM, all variables are standardized before analysis, and the estimates reported are the coefficients for each predictor controlling for all other predictors in the model.

## **Results**

### **Structure of aspirations**

We attempted to replicate Kitamura et al.'s, (2014) model of agency and communality aspirations, using CFA with two higher-order factors. The fit indices for the agency-communality model for fathers were  $\chi^2(456) = 1803.96$  ( $p < .001$ ), CFI = .745,

RMSEA = .098, 90% CI = [.093, .102], AIC = 24000.74, and for children were  $\chi^2(456) = 1520.43$ , ( $p < .001$ ), CFI = .807, RMSEA = .087, 90% CI = [.082, .092], AIC = 23446.73.

Meanwhile, the fit indices for the GCT-based model were  $\chi^2(456) = 1531.25$  ( $p < .001$ ), CFI

= .797, RMSEA = .087, 90% CI = [.082, .092], AIC = 23681.68, and for children were

$\chi^2(456) = 1377.94$ , ( $p < .001$ ), CFI = .833, RMSEA = .081, 90% CI = [.076, .086], AIC =

23262.79. Although the CFI value of the GCT model was lower than is generally recommended, the relative fit index (i.e., AIC) supported the GCT structure of aspirations for the sample of Japanese and children. We speculate that the low CFI value was the result of the observed variables (i.e., 32 items). As Kenny and McCoach (2003) mentioned, CFI declines as more items are added to the model. Moreover, all fit indices for the GCT-based model were an improvement on the agency-communality model. Accordingly, we proceeded with the GCT framework. The results of GCT-based model are shown in Online Supplementary Materials S3.

In the subsequent analyses, we used arithmetic means as the scale scores. Table 2 presents means, standard deviations, and standard errors among the variables. For descriptive and exploratory analytic purposes, we performed paired  $t$ -tests to compare the aspirations of fathers and their children. The results showed that extrinsic aspirations were higher in children than their fathers ( $t = 11.87$ ,  $p < .001$ , Hedges'  $g = 0.67$ ). There was no statistically significant difference in the intrinsic aspirations of fathers and children ( $t = 0.73$ ,  $p = .467$ ,

Hedges'  $g = 0.04$ ).

**Inter-correlations.** Table 3 presents correlations among the variables. Concordant with our expectations, fathers' intrinsic aspirations were strongly positively correlated with their children's intrinsic aspirations, and fathers' extrinsic aspirations were strongly positively correlated with their children's extrinsic aspirations. An analysis of the comparison of correlation coefficients of dependent samples for the correlations between intrinsic and extrinsic aspirations in fathers and their children showed a statistically significant difference ( $z = 2.50$ ,  $p = .003$ ). That is, the correlation coefficient between aspirations in the children was higher than for fathers. Children's perceptions of their fathers' autonomy-support were positively correlated with fathers' intrinsic aspirations, but not the fathers' extrinsic aspirations. In addition, children's perceptions of their fathers' autonomy-support were positively correlated with the children's own intrinsic aspirations, but not the children's own extrinsic aspirations.

**Moderation by child-perceived father autonomy support.** To test the hypothesis that the strong positive links between fathers' and children's intrinsic aspirations (but not their extrinsic aspirations) were moderated by child-perceived father autonomy support, we used hierarchical multiple regression in R. All variables were scaled prior to analysis.

*Intrinsic aspirations.* Fathers' intrinsic aspirations and child-perceived father autonomy-support were entered into the first model, accounting for a statistically significant

proportion of the variance in children's own intrinsic aspirations,  $R^2 = 0.35$ ,  $F(2, 307) = 83.04$ ,  $p < .001$ . Adding the interaction term between fathers' intrinsic aspirations and child- perceived father autonomy-support did not account for additional variance in children's intrinsic aspirations,  $\Delta R^2 = 0.00$ ,  $\Delta F(1, 306) = 0.05$ ,  $p = 0.82$ . As shown in Table 4, the interaction was not statistically significant.

*Extrinsic aspirations.* The first model included fathers' extrinsic aspirations and child- perceived father autonomy support. These two variables accounted for a statistically significant proportion of the variance in children's own extrinsic aspirations,  $R^2 = 0.26$ ,  $F(2, 307) = 54.72$ ,  $p < .001$ . The second model additionally included the interaction between fathers' extrinsic aspirations and child-perceived father autonomy support. The interaction term was not statistically significant (see Table 5) and including it did not account for any additional variance in children's own extrinsic aspirations,  $\Delta R^2 = 0.01$ ,  $\Delta F(1, 306) = 2.15$ ,  $p = 0.14$ .

**APIM of intrinsic aspirations and BPNS.** Finally, we conducted separate intrinsic and extrinsic APIMs using structural equation modelling with maximum likelihood estimation, manifest variables, and distinguishable dyads. Dyads are classed as distinguishable if there is a variable that reliably distinguishes dyad members across dyads, in this case those variables are "father" and "child". As described in the analytic strategy section above, because general aspiration engagement tends to predict indices of well-being

(regardless of intrinsic or extrinsic quality), we calculated relative intrinsic aspiring and relative extrinsic aspiring scores for use in the APIMs. The relative scores are calculated by subtracting the mean across all aspirations from the intrinsic mean and the extrinsic mean. The use of relative scores is typical in the GCT literature and is indispensable for understanding the link between basic psychological need satisfaction and the prioritization of intrinsic or extrinsic aspirations in the broader pattern of aspirations. However, the calculation of relative scores results in the relative intrinsic and relative extrinsic scores being associated with outcomes in mirror image ways. Thus, for clarity and to avoid repetition, we include the results for only relative intrinsic aspirations below, and the figure for relative extrinsic aspirations in Online Supplementary Materials S4.

The APIM for intrinsic aspirations is shown in Figure 1. The actor effect for fathers was statistically significant, demonstrating that, accounting for the interdependence in the model, fathers who emphasize intrinsic aspirations in the pattern of overall aspiring also have more basic psychological needs satisfaction,  $b = 0.17$ ,  $SE = 0.06$ , 95% CI [0.04, 0.29],  $p = .010$ . The actor effect for children was not statistically significant,  $b = 0.03$ ,  $SE = 0.06$ , 95% CI = [-0.09, 0.15],  $p = .673$ . Of the two partner effects, only the path from fathers to children was statistically significant,  $b = 0.17$ ,  $SE = 0.06$ , 95% CI [0.04, 0.29],  $p = .008$ , which suggests that higher (or lower) levels of fathers' relative intrinsic aspiring co-occur with higher (or lower) levels of the basic psychological need satisfaction of their children. The

partner effect for children was not statistically significant,  $b = -0.12$ ,  $SE = 0.06$ , 95% CI = [- 0.25, 0.01],  $p = .059$ . Finally, we assessed child gender as a between-dyads covariate, to see if the actor and partner effects varied depending on whether the father's child was a male or a female; they did not.

## **Discussion**

We examined the structure of aspirations in Japan, the associations between Japanese fathers' intrinsic and extrinsic aspirations and those of their children, and the links between aspirations and basic psychological needs satisfaction. Based on GCT, we expected to find support for the intrinsic and extrinsic aspirations distinction in our Japanese sample. We also predicted positive associations between fathers' own and children's own intrinsic and extrinsic aspirations, and that child-perceived father autonomy support would predict positive child outcomes and moderate the link between fathers' and children's intrinsic aspirations. In addition, we hypothesized that the relative intrinsic APIM would have significant actor and partner effects which, taken together, would suggest that intrinsic aspiring may have benefits for oneself and members of one's family. We found support for most of our hypotheses, albeit with some exceptions and caveats.

### **Primary Findings**

#### ***The Structure of Aspirations***

Given previous analyses of aspirations in Japan had questioned the intrinsic-extrinsic

structure of aspirations (Kitamura et al., 2014), we compared two models of aspirations using CFA. Consistent with prior findings derived from diverse nations, age groups, and professions, the GCT structure of intrinsic and extrinsic aspirations was largely supported for Japanese fathers and children (Research Question 1). Kitamura et al. (2014) used a brief 14- item version of the Aspiration Index, which suggests future studies emphasizing scale structure and validation should use the most comprehensive measures available to ensure robust results. The GCT structure of aspirations has garnered statistical support from many countries, and our study suggests that it holds even in an East Asian culture such as Japan (Hypothesis 1).

#### ***Father's and Children's Aspirations***

Past evidence has shown that Japanese fathers tend to be less involved with their children than fathers from other countries (Ishii-Kuntz et al., 2004). However, our study shows that, despite these cross-cultural differences in paternal involvement, the strivings of fathers are related to the strivings and psychological experiences of their children (Research Question 2). We demonstrated that, whether their aspirations were intrinsic or extrinsic, children had similar aspirations to their fathers (Hypotheses 2 and 3). Some trends suggest that Japanese fathers are trying to become more involved with their families. In 1978 only 23% of Japanese men said that family was most important to them, by 1989 the figure was 43% and growing (Ishii-Kuntz et al., 2004). Paternal engagement appears to be increasing,



which may account, in part, for the positive links between father's and children's aspirations in our study. However, we did not assess paternal closeness, so these are mere speculations, but this is a ripe opportunity for future research.

### ***Paternal Autonomy Support and Child Aspirations***

Based on SDT, we expected that child-perceived father autonomy-support would be both associated with children's aspirations and moderate the link between fathers' and children's intrinsic aspirations (Research Question 3). We expected a moderation effect such that the correlation between fathers' and children's intrinsic aspirations would be higher if fathers were perceived to be more autonomy-supportive (Hypothesis 4). Results did not support the moderation effect, instead showing that both fathers' intrinsic aspirations and child-perceived autonomy-support were both independently and positively associated with children's intrinsic aspirations. Indeed, father autonomy-support independently predicted both children's intrinsic and their extrinsic aspirations, but did not interact. Thus, although fathers' autonomy-support is positively linked with their children's reports of intrinsic aspirations, it is not associated with an increasing assimilation or similarity effect for intrinsic aspirations. It could be the case that, controlling for fathers' own aspirational orientation, autonomy-support may simply allow children to move toward their own chosen aspirations, regardless of domain. However, this claim is merely speculative. Future research is needed to further look at sources and processes in how Japanese children internalize aspirations, based

both on what is demonstrated to them and variations in paternal autonomy-support. In such studies the maternal role would be a meaningful additional variable to consider. In addition, developmental influences beyond autonomy-support should be explored including genetic influences and other socialization processes.

### ***The Link Between Own Aspirations and Others' Well-being***

The results of the APIM revealed that fathers' intrinsic aspirations are associated with higher levels of their own basic psychological need satisfaction, and that of their children (the reverse was true for extrinsic aspirations, Research Question 4). Children's relative intrinsic aspirations did not relate to their own need satisfaction, or that of their fathers, although the partner effect from children's intrinsic aspirations to father's basic psychological needs approached statistical significance. Interestingly, the direction of this non-significant effect trended negative, counterintuitively suggesting the relative intrinsic aspirations of children may negatively relate to their fathers' basic psychological need satisfaction. While we are reluctant to speculate about what was ultimately a non-significant effect, fathers could feel less capable of meeting their children's aspirations for personal growth and interpersonal closeness, when coupled with competing professional and familial demands, thus compromising the well-being of fathers. Of course, such a supposition is merely speculative and, at this stage, does not have statistical support.

The pattern of results from the APIMs suggests that paternal aspirations may be more

influential in familial psychological need satisfaction than that of their children. However, studies are needed to test this longitudinally, as the cross-sectional nature of these data preclude causal conclusions. That said, these results point to the importance of studying the paternal role and suggest that fathers' orientations towards intrinsic aspirations co-occur with benefits both for themselves and their children.

Our results thus achieve our overarching aim of demonstrating that, when it comes to the aspirations and wellness of children, fathers matter. Even in the Japanese context where fathers tend to be less involved, and autonomy-support is argued to be less essential, fathers' strivings and paternal autonomy-support are still associated with the goals and optimal functioning of their children.

### **Exploratory Findings**

#### ***The Difference Between Fathers' and Children's Aspirations***

Given the dearth of data regarding aspirations in samples of Japanese fathers and children, we also included some more descriptive and exploratory analyses. First, we found that the level of intrinsic and extrinsic aspirations differed between fathers and their children. Specifically, extrinsic aspirations were rated as more important by the adolescents than by their fathers. This is congruent with research suggesting that the relative importance of extrinsic aspirations decreases with age (Kasser & Ryan, 1996; Kasser et al., 2014). Also, the correlation between intrinsic and extrinsic aspirations was higher for children than for their

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fathers. Fathers seemed to differentiate between the two types of aspirations better than did children. Children may have recognized the two aspirations as more conceptually close, or alternatively they may have simply desired both types of aspirations. These differences point to further research questions: why does the importance of extrinsic aspirations decrease with age? How do adolescents come to differentiate between intrinsic and extrinsic aspirations at more advanced ages? Further studies are needed to address these questions for better understanding of value formation with developmental perspectives.

### **Limitations**

This study focused on fathers who were their family's primary income earner.

Selecting participants based on this criterion means that only families of a more traditional Japanese structure have been included, which limits the generalizability of the results to families of different structures (for example, single-parent families). In addition, the fathers represented families of moderate to high socioeconomic status, so these results may not extend to low income families. Moreover, as described above, these data are cross-sectional in nature. Thus, while the results shed light on the dyadic interplay of fathers' and children's aspirations and their well-being, the structure of the data precludes any causal conclusions. These limitations highlight a variety of reasons for further research into father-child dynamics in the socialization of life goals.

### **Conclusions**

Fathers and their children were found to have similar aspirations, and when fathers were relatively high in intrinsic life goals, both the fathers and their children experienced greater satisfaction of basic psychological needs. A parent may be more likely to heed recommendations to orient towards beneficial intrinsic goals, and away from materialistic, extrinsic goals, if they know that so doing will be of benefit to their children. While longitudinal studies are needed to assess the direction and causality of the links revealed in this research, our study provides initial evidence to suggest paternal aspirations and paternal autonomy support are associated the goals and well-being of their children in Japan.

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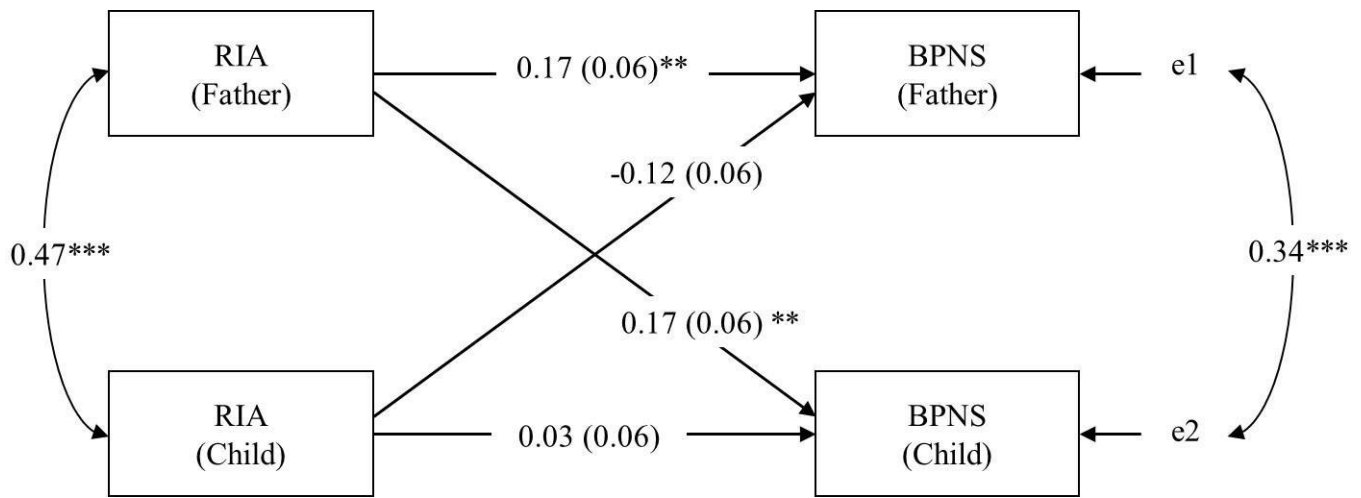


Figure 1. The result of actor-partner independence model of relative intrinsic aspirations. Note. RIA = relative intrinsic aspiration (the intrinsic mean minus the mean across all aspirations). BPNS = basic psychological needs satisfaction. Values in parentheses means standard error.  $p < .001$ \*\*\*,  $p < .01$ \*\*.



Table 1

## Demographic Characteristics

	<i>n</i>	%
Fathers' annual average income		
< 5,000,000 (Japanese yen)	55	17.7
5,000,000 to 9,999,999	196	63.2
10,000,000 $\leq$	59	19.0
Fathers' subjective SES (range:1 ~ 10)		
Below average level ( $3 \leq$ )	44	14.2
Around average level (4~7)	240	77.4
Above average level ( $\leq 8$ )	26	8.4
Fathers' marital status		
Married	304	98.1
Divorced	6	1.9
Fathers' education		
Primary school	4	1.3
High school	74	23.9
Vocational school & junior college	40	12.9
University	171	55.2
Graduate school	21	6.8
Children's birth order		
First	158	51.0
Second	123	39.7
Third or others	29	9.4
Children's school achievement		
Yes	306	98.7
No	4	1.3

Table 2

Means, Standard Deviations, Standard Errors, and 95% Confidence Intervals among Variables

	<i>M</i>	<i>SD</i>	<i>SE</i>	95%CI	Range
Fathers' variables					
Intrinsic aspirations	3.23	0.73	0.04	[ 3.15, 3.31 ]	1 — 5
Extrinsic aspirations	2.07	0.70	0.04	[ 1.99, 2.15 ]	1 — 5
Relative intrinsic aspiring	1.16	0.82	0.05	[ 1.07, 1.25 ]	-4 — 4
Satisfaction of basic psychological needs	4.15	0.86	0.05	[ 4.05, 4.25 ]	1 — 7
Children's variables					
Intrinsic aspirations	3.20	0.75	0.04	[ 3.12, 3.28 ]	1 — 5
Extrinsic aspirations	2.59	0.83	0.05	[ 2.50, 2.68 ]	1 — 5
Relative intrinsic aspiring	0.61	0.66	0.04	[ 0.54, 0.68 ]	-4 — 4
Satisfaction of basic psychological needs	4.29	0.84	0.05	[ 4.20, 4.38 ]	1 — 7
Perceived autonomy support from father	4.66	0.85	0.05	[ 4.56, 4.75 ]	1 — 7

*Note* . *M* = mean, *SD* = standard deviation, *SE* = standard error, *CI* = confidence interval. Range means theoretical values

Table 3

## Correlation Coefficients among Fathers' and Children's Variables

	2	3	4	5	6	7	8	9
Fathers' variables								
1. Intrinsic aspirations	.35	.59	.25	.57	.34	.21	.25	.41
2. Extrinsic aspirations		-.55	.13	.27	.50	-.32	.05	-.06
3. Relative intrinsic aspiring			.10	.28	-.12	.47	.18	.42
4. Satisfaction of basic psychological needs				.24	.25	-.04	.36	.41
Children's variables								
5. Intrinsic aspirations					.65	.32	.45	.38
6. Extrinsic aspirations						-.51	.32	.09
7. Relative intrinsic aspiring							.11	.32
8. Satisfaction of basic psychological needs								.38
9. Perceived autonomy support from father								

*Note* . Critical values of p value are .114 and .149 for .05 and .01 significance level, respectively.

Table 4

Results of Multiple Hierarchical Regression for Predicting Children's Own Intrinsic Aspirations

	$\beta$	<i>SE</i>	<i>p</i>	95%CI
Step 1				
Fathers' intrinsic aspirations	0.50	0.04	<.001	[ 0.40, 0.59 ]
Children's perceived autonomy support from father	0.18	0.05	<.001	[ 0.08, 0.28 ]
Step 2				
Fathers' Intrinsic aspirations (a)	0.50	0.05	<.001	[ 0.40, 0.60 ]
Children's perceived autonomy support from father (b)	0.18	0.05	<.001	[ 0.07, 0.28 ]
Interaction (a) $\times$ (b)	0.01	0.05	.820	[ -0.08, 0.10 ]

*Note* . SE = standard error, CI = confidence interval

Table 5

## Results of Multiple Hierarchical Regression for Predicting Children's Own Extrinsic Aspirations

	$\beta$	<i>SE</i> 95%CI	<i>p</i>	
Step 1				
Fathers' extrinsic aspirations	0.51	0.05	<.001	[ 0.41, 0.60 ]
Children's perceived autonomy support from father	0.12	0.05	.001	[ 0.03, 0.22 ]
Step 2				
Fathers' extrinsic aspirations (a)	0.51	0.05	<.001	[ 0.41, 0.61 ]
Children's perceived autonomy support from father (b)	0.13	0.05	.001	[ 0.03, 0.22 ]
Interaction (a) $\times$ (b)	0.08	0.05	.140	[ -0.03, 0.18 ]

*Note* . SE = standard error, CI = confidence interval