Leader and Follower Psychological Capital: Direct and Crossover Effects towards Work Engagement: A Study of New Zealand Teams

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This study tested the relationships between leaders’ psychological capital (PsyCap) and followers PsyCap, towards each other’s engagement. We used crossover theory to explain why leaders PsyCap might transfer over and influence follower engagement, and similarly, followers influencing leaders. Using a 199 leaders-follower combinations (with a minimum 2 team members per team), we find support for PsyCap of team members positively influencing their own engagement, and then leaders PsyCap also influencing these outcomes, typically fully mediating the effects of teams PsyCap. Towards leaders’ engagement, their own PsyCap was positively related and follower PsyCap also influenced these outcomes, partially mediating the effects of leaders own PsyCap. Overall, we find support for crossover by leaders and followers, making unique contributions to the literature.

INTRODUCTION

Psychological capital (PsyCap) is an individual’s positive psychological state of development and is characterized by having confidence (self-efficacy); making a positive attribution (optimism); persevering toward goals and when necessary, redirecting paths to goals (hope); and bouncing back and even beyond from negative experiences (resilience) to attain success (Luthans, Youssef & Avolio, 2007). It is the synergistic and combined effects of all four dimensions that creates and enhances PsyCap. Research has demonstrated that employees with PsyCap are more satisfied in their jobs, are higher performers (Avey, Avolio, Luthans and Norman, 2007; Luthans, Avolio, Avey & Norman, 2007), demonstrate greater perceptions of support in organizations, are more open to organizational change (Avey, Wernsing, & Luthans, 2008), and have higher organizational commitment and less absenteeism (Avey, Patera, & West, 2006). In terms of leadership specifically, leaders with high psychological capital are rated as more trustworthy by employees as well as being more authentic (Walumbwa, Luthans, Avey, & Oke, 2011).

Simultaneously, research on work engagement has garnered a greater understanding of the benefits to organizations and individual (Bakker & Leiter, 2010). Engagement is defined as a positive,
fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Sonnentag, Dormann & Demerouti, 2010). Engagement is positively related to employee turnover, extra role behaviors and even financial success (Xanthopoulou, Bakker, Heuven, Demerouti & Schaufeli, 2008; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009a). With mounting research in the area, engagement is seen as a key resource for employee and organizational success (Bakker & Leiter, 2010).

PsyCap and engagement focus on the positive aspects of human functioning at work. However, they differ in that PsyCap is a psychological state of development, while engagement relates specifically to work states and activities. Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009b: 236) stated the personal resources component of their demands and resources model, as predictors of engagement, “parallels the concept of psychological capital”. Indeed, they tested and found support for the dimension of optimism as a component of personal resources predicting work engagement. Furthermore, while Bakker and Xanthopoulou (2009) found engagement had a crossover effect between partners, the present study is the first to test PsyCap as predictors of engagement and to test the potential crossover of these constructs between leaders and their followers. Overall, this research makes three major contributions: (1) For the first time we test and find support for team-level PsyCap influencing team-level engagement, as these constructs are typically tested at the individual level only. (2) The PsyCap of both leaders and followers is found to be related to their own engagement dimensions of absorption, dedication and vigor and in addition find strong support for the crossover influence of PsyCap on the others engagement. (3) Finally, leaders influencing follower outcomes supports the crossover approach where leaders’ factors can influence followers. Nonetheless, by testing and finding support for followers influencing leaders we extend the theory and find support the emerging theory of followership, and its benefits on leaders.

Overall, we add to the recent PsyCap meta-analysis (Avey, Reichard, Luthans & Mhatre, 2011) and build upon the positive organizational behavior perspective by testing positive psychological resources (PsyCap) on both employees and leaders’ attitudes, and provide new insights into the leader-to-follower effects and follower-to-leader effects.
PSYCHOLOGICAL CAPITAL

Drawing from positive psychology and positive organizational behavior, PsyCap is an individual’s positive psychological state of development characterized by having confidence (efficacy); making positive attributions and having positive future expectations (optimism); persevering toward goals and, when necessary, redirecting paths to goals (hope); and bouncing back from adversity (resilience) (Luthans, et al., 2007). Research has clearly found that when the four psychological resources are combined, they form a higher order, core construct that is a stronger predictor of attitudes and performance than any one of the four components by itself (Luthans et al., 2007). PsyCap has been shown to provide additional variance to desired attitudinal and behavioral outcomes beyond the demographics and well known positively-oriented constructs such as core self-evaluations, personality traits and person-organization and person-job fit (Avey, Luthans & Youssef, 2010). A recent meta-analysis of 51 independent samples (e.g., Avey et al., 2011) found PsyCap not only has a strong positive relationship with desirable attitudes and performance, but also psychological wellbeing of employees (Avey, Luthans, Smith & Palmer, 2010) and negative relationships with cynicism, stress and anxiety (Avey, Luthans, & Jensen, 2009).

This growing body of knowledge on positivity in general and PsyCap in particular is now recognized in the theoretical understanding of effective positive global leadership (Youssef & Luthans, 2012). Besides leadership theory-building, there has also been research exploring the relationship between PsyCap and leadership such as the following: Jensen and Luthans (2006) found a relationship between entrepreneurs’ PsyCap and their authentic leadership (Jensen & Luthans, 2006); Avey et al. (2011) found that leaders’ PsyCap has an impact on their followers’ PsyCap; and Norman, Avolio and Luthans (2010) found that the PsyCap of leaders had an impact on their followers’ trust and perceived performance of them. Finally, based on empirical research, PsyCap has recently been found to have implications for the satisfaction with and objective measures of personal relationships, health and overall wellbeing (Luthans, Youssef, Sweetman, & Harms, 2013). We build on the notion by Xanthopoulou et al. (2009b) and extend PsyCap outcomes tested to include engagement. Furthermore, Avey et al. (2011: 132) stated
“PsyCap can be argued to be related to commitment to the organization, because the organization (as a referent) fulfills needs for efficacy and accomplishment for those high in PsyCap. In turn, they are more likely to embed themselves and be enthusiastic about their work (engagement)”.

**WORK ENGAGEMENT**

Bakker and Demerouti (2008) stated that workers who have higher engagement have higher levels of energy, greater enthusiasm about their work and more self-efficacy. Due to engaged workers having higher energy levels and positive attitude towards work, they create their own positive feedback and have greater appreciation, recognition and success (Bakker & Demerouti, 2008). Thus, engagement can be positive and constructive. Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002) defined engagement as a persistent, pervasive and positive affective-motivational state of employee fulfilment. Llorens, Schaufeli, Bakker, and Salanova (2007: 827) defined the three dimensions of engagement as follows:

*Vigor* “refers to high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, the ability to not be easily fatigued, and persistence in the face of difficulties”. *Dedication* is defined as a strong involvement in an employee’s work, which is “accompanied by feelings of enthusiasm and significance and by a sense of pride and inspiration”. Finally, Llorens et al. (2007) defined *absorption* as a state in which employees are “fully concentrated on and engrossed in their activities, whereby time passes quickly and they have difficulties in detaching themselves from work”. As noted above, work engagement has been well established in the job-demands and resources (JDR) model, and related to the present study, has been shown to be predicted by personal resources. As such, we expect PsyCap, as a form of personal psychological resource, to predict the three dimensions of engagement. This leads to our first set of hypotheses.

**Hypothesis 1:** *PsyCap will be positively related to (a) vigor, (b) dedication, and (c) absorption.*

**CROSSOVER EFFECTS**

The process whereby psychological well-being is transferred from one person to another is called a crossover process (Westman, 2001). Crossover is similar but distinct from to emotional contagion (Sy,
Côté, & Saavedra, 2005; Totterdell, Kellet, Teuchmann, & Briner, 1998), as the first concerns the transfer of more general states of well-being, including happiness and engagement (Bakker et al., 2007), while the latter specifically looks at how current states of emotions (i.e., mood) are transmitted from one person to the other (Barsade, 2002). Two possible mechanisms explaining crossover of well-being between close individuals are distinguished in the crossover literature (Demerouti et al., 2005; Westman, 2001). In the first mechanism, feelings of well-being are transferred from one person to the other because of empathy. Persons in a close relationship imagine the situation of the other and how they would feel, and in doing so, may experience the other person’s feelings (Bandura, 1977; Westman, 2001). For example, leaders and followers work together on a regular basis and may perceive each other’s mood. This perception can occur when the follower adopts the leaders’ psychological perspective (Bakker & Demerouti, 2007). When followers understand the leader’s point of view it’s referred to as “perspective taking” (Davis, 1983: 169).

In addition, followers may have empathic concern, which Davis (1983: 169) defined as “an individual’s tendency to experience feelings of warmth, compassion, and concern for others”. Whereas perspective taking is a more cognitive process, empathic concern implies that the follower is more emotionally responsive to the leader’s feelings. Both types of empathy means the follower can ‘catch’ the mood of their leader. As the key mechanism for empathy involves the sharing of another person’s affective state (Bakker & Demerouti, 2007), we label this process as affective crossover, and these affective states are transmitted between the leader and follower.

Leaders who are engaged about their work are more likely to radiate positive emotions (Bakker, 2009). Due to perspective taking and empathic concern, followers feel happy for their leaders, and consequently share their positive affect. These positive emotions, in turn, contribute to followers’ engagement because positive emotions trigger a constructive process whereby people have more thoughts, are more creative, and are more motivated to engage in activities (Fredrickson, 2001; Vallerand, 1997). We expect employees, who perceive the positive emotions from their leader via their greater psyCap, will be more motivated to work, feel more vigorous and are more likely to enjoy work (i.e., high engagement).
Westman’s conceptual model states the second mechanism explaining crossover consists of behaviors including social support and coping. As these mechanisms cover the actor’s behavior in response to well-being, we label this type as behavioral crossover. Although Westman (2001) originally developed her crossover model for feelings of strain (e.g., burnout, depression), others applied and found support for the crossover mechanisms to crossover of positive feelings, such as engagement (Bakker et al., 2009; Bakker & Demerouti, 2007). Engaged individuals are more likely to engage in social interactions and are more likely to support others around them (Bakker, 2009; Isen & Baron, 1991). Kotter (1990) noted that leaders supportive behavior is associated with being and effective leader, as their supportive behavior toward followers is the leader’s primary responsibility (Bennis & Nanus, 2003). We acknowledge, however, that leaders may also respond to engagement with more or less withdrawal behavior, representing a laissez-faire leadership style (Skogstad, Einarson, Torsheim, Schanke Aasland, & Hetland, 2007). However, these leadership styles and how they influence followers is beyond the scope of the present study.

In line with Westman’s model, we expect that leaders who have greater positive psychological resources (higher PsyCap) will be not only more personally engaged at work, but will provide more support to their followers, which in turn will enhance their followers engagement. This expectation is in line with research on positive emotions, suggesting that individuals who experience positive emotions are more willing to help others (Isen & Baron, 1991). Engaged employees have indeed been reported to score higher on extra-role performance, including helping behavior (Xanthopoulou et al., 2008). In turn, positive supervisor behaviors, such as listening to followers, helping them with tasks, and providing feedback, motivates followers and boosts their enthusiasm and vigor at work (Tims, Bakker & Xanthopoulou, 2011). As such, we expect that engaged leaders are more supportive to their followers, thereby increasing engagement in their followers. Beyond crossover from leader to follower, we also explore the opposite.

In recent years there has been increasing criticism of leadership research that concentrates solely on the leaders’ influence on followers. Increased calls have been made to develop a greater understanding
of the influence that followers have on leaders (Shamir, Pillai, Bligh, & Uhl-Bien, 2007). For example, Ehrhart and Klien (2001) found that followers’ values and personality influenced leaders’ ability to be charismatic, while Kellerman (2008) and Popper (2011) suggest that understanding the importance and centrality of followers’ influence in the leadership process, is central to developing future research in leadership. As such, in alignment with the crossover approach, we also test the ability of the followers PsyCap to influence the leaders’ engagement. We suggest a leader with team followers who exhibit strong positive psychological resources (high PsyCap) will be viewed as beneficial and positive, such they that similarly influence their leaders engagement. This leads to our crossover hypotheses.

Hypothesis 2: Leader PsyCap will be positively associated with follower (a) vigour (b) dedication, and (c) absorption.

Hypothesis 3: Follower PsyCap will be positively associated with leader (a) vigour (b) dedication, and (c) absorption.

Aligned with other crossover studies (e.g. Westman and colleagues), we test the crossover effect of one parties PsyCap towards the others engagement and its contribution over and above the target parties own PsyCap. In effect, we test whether the own parties (leaders or followers) PsyCap mediates the crossover influence. Such an approach allows us to understand the crossover effects, to determine whether the effects extend beyond a leaders or teams own PsyCap. This leads to the final set of hypotheses.

Hypothesis 4: Leader PsyCap will be positively associated with follower (a) vigour (b) dedication, and (c) absorption, over and above the influence of follower PsyCap.

Hypothesis 5: Follower PsyCap will be positively associated with leader (a) vigour (b) dedication, and (c) absorption, over and above the influence of leader PsyCap.

Figure 1 shows the overall hypothesized model.

<< Insert Figure 1 about here >>

METHOD

Sample and Procedure
Data were collected from over 250 organizations, spread across a wide regional location in New Zealand. Supervisors and managers were the target of this survey, and a question was included in the front of the survey to confirm they were in a position of authority (supervisor or manager who oversaw staff). Targeted organizations had the study explained to them in brief and were provided with the requirements for participation, which included leaders completing two surveys and then their teams also completing a single survey. From 750 surveys distributed (3 per firm), a total of 447 surveys were returned for a response rate of 59.6%. Survey one included the PsyCap measure. Two weeks later survey two was administrated to the same participants (e.g., the engagement measure). Overall, 386 matched survey one and two responses were received, representing an overall response rate of 51.5%.

At the time of survey two, the leaders were also presented with surveys for their teams, which typically ranged from 2-5 employees. A small number of leaders only supervised one employee and these were removed from the study analyses while teams which responded with only one employee survey were also removed from the study. From 261 team responses (from 386 potential teams), 62 were removed due to having only one team member respond. In total, 199 usable team surveys were collected with a minimum of 2 team members responding, representing a response rate of 51.6% of teams.

This present study’s analysis focuses on the 199 leaders and their matched team member data. On average, the leaders were 36.8 years old (SD=12.9), 54% were male, married (59%), parents (52%), and union members (13%). Respondents worked 39.8 hours per week (SD=14.4), had job tenure of 5.3 years (SD=6.6) and organizational tenure of 8.8 years (SD=8.8). Education was well spread: high school (32.6%), technical qualification (23.2%), bachelor’s degree (32%) and postgraduate qualification (12.2%). Ethnicity was also well spread: European (60.2%), Asian (25.5%), Maori (8.7%), and other (5.6%). Industry sectors included the private sector (62.2%), public sector (31.1%), and not-for-profit (6.7%). Team members had been with their leaders an average of 21.3 months (SD=19.5).

Measures

*Predictor Variables*
Leader PsyCap and Team PsyCap were each measured with the 24-item PsyCap Questionnaire (PCQ) by Luthans et al. (2007), coded 1=strongly disagree, 5= strongly agree. Sample items include “I feel confident helping to set targets/goals in my work area” (self-efficacy), “If I should find myself in a jam at work, I could think of many ways to get out of it” (hope), “When I have a setback at work, I have trouble recovering from it, moving on” (reverse scored resiliency) and “I always look on the bright side of things regarding my job” (optimism). While PsyCap is made up of four related dimensions, as with other studies we used the combined measure for our analysis (Avey et al., 2010). The measure had a strong Cronbach’s alpha for both leaders (.91) and followers (.92). We used the average score of team members to generate a team-level construct of PsyCap. This implies a direct consensus aggregation model (Chan, 1998) and as such, we calculated inter-rated agreement to determine if aggregating team members’ ratings of their teams’ role conflict was appropriate. This was supported, with a mean $r_{WG}$ of .87, which indicates good inter-rater agreement (LeBreton & Senter, 2008).

**Criterion Variables**

Work engagement was measured using the 17-item Utrecht Work Engagement Scale (Schaufeli & Bakker, 2003), coded 1=never, 5=always. This measure has been well validated (Schaufeli et al., 2001). This measure has three dimensions: (1) vigour, (2) dedication and (3) absorption. Leader Vigour ($\alpha = .80$) and Team Vigour ($\alpha = .80$) were measured with 6-items; a sample item is “At my work, I feel bursting with energy”. Leader Dedication ($\alpha = .84$) and Team Dedication ($\alpha = .87$) were measured with 6-items; a sample item is “My job inspires me” and Leader Absorption ($\alpha = .78$) and Team Absorption ($\alpha = .86$) were measured with 5-items; a sample item is “I get carried away when I am working”. As with Team PsyCap above, we calculated the inter-rated agreement to determine if aggregating team members’ ratings of their teams’ role conflict was appropriate. This was supported, with a mean $r_{WG}$ cores between .75 and .79 for the three dimensions, indicating adequate inter-rater agreement (LeBreton & Senter, 2008).

**Control Variables**
For all analyses, we controlled for the length of time teams had worked with their supervisor (coded in months).

Levels of Analysis

We tested the direct effects relationship of PsyCap to engagement using correlation analysis to confirm hypotheses 1. Hypotheses two to five, which tested the crossover effects and potential mediating effects, were tested in SPSS version 20. We follow the approach of Bono and Judge (2003) relating to testing team effects at the individual level rather than multi-level through constructing a single (mean) level score for team PsyCap and team engagement. Three models were run with the three dimensions of leader engagement as the outcomes. In Step 1, the control variable was entered; Step 2 had follower PsyCap and Step 3 had leader PsyCap (to test for mediation). We also followed the Monte Carlo Method for assessing mediation as described by Bauer, Preacher, and Gil (2006). The last three models were run with follower engagement (vigor, dedication and absorption) as the outcomes. In Step 1, the control variable was entered; Step 2 had leader PsyCap and Step 3 had follower PsyCap (to test for mediation).

RESULTS

Descriptive statistics for all the study variables are shown in Table 1.

<< Insert Table 1 about here >>

Table 1 shows that follower team PsyCap is significantly related to team engagement dimensions, as well as leader engagement dimensions (all p< .01). Similarly, leader PsyCap is significantly related to all the leader engagement dimensions, as well as follower team work engagement dimensions (all p< .01). This provides strong support for Hypothesis 1, with PsyCap being positively related to engagement and this was supported for both leaders and followers. Overall, all variables of interest are significantly related (all p< .01) except team absorption which was not significantly related to any leader engagement dimensions.

Results of the hierarchical regressions for Hypotheses 2 to 5 are shown in Tables 2 and 3.

<< Insert Tables 2 and 3 about here >>
Table 2 focuses upon leader engagement, and time with supervisor is positively related to all three dimensions. Table 2 also shows that follower team PsyCap is positively related to leader vigor, accounting for 14% of the variance (p< .001). Team PsyCap is also positively related to dedication (accounting for 8% variance) and similarly so for absorption (8% variance). This supports hypotheses 3a, 3b, and 3c. Step 3 tested the mediating effect of the targets own PsyCap, and leader PsyCap was positively related to all three engagement dimensions: vigor (accounting for an additional 11% variance); dedication (accounting for an additional 7% variance) and absorption (3% variance). Furthermore, leader PsyCap partially mediated the influence of team PsyCap on all engagement dimensions. Towards vigor, there was a drop in beta weight from .38 to .21; towards dedication with a drop in beta weight from .29 to .16 and towards absorption with a drop in beta weight from .28 to .20. This provides strong support for Hypothesis 5, with team PsyCap influencing leader engagement over and above the leaders’ own PsyCap.

Table 3 focuses upon follower team engagement, and time with supervisor is positively related to all three dimensions. Table 2 also shows that leader PsyCap is positively related to follower team vigor (accounting for 15% of the variance). Leader PsyCap is also positively related to dedication (6% variance) and similarly for absorption (2% variance). This supports hypotheses 2a, 2b, and 2c. Step 3 tested the mediating effect of the targets own PsyCap, and team PsyCap was positively related to all three engagement dimensions: vigor (accounting for an additional 29% variance); dedication (25% variance); and absorption (20% variance). Furthermore, team PsyCap partially mediated the influence of leader PsyCap on vigor, with a drop in beta weight from .39 to .12. However, there were full mediation effects towards dedication with a drop in beta weight from .25 to .03 and absorption with a drop in beta weight from .15 to -.08. We confirmed this by Monte Carlo tests and support was found by the Monte Carlo test toward all outcomes (e.g. towards leader vigour LL = .1511, UL = .4283, p < .05). Overall, there is only partial support for Hypothesis 4, with leader PsyCap only influencing follower team vigor over and above the followers own team PsyCap. As such, one’s own PsyCap appears to almost universally mediate the others PsyCap influence.
DISCUSSION, LIMITATIONS & CONCLUSIONS

The present study found support for positive psychological resources influencing the engagement of both leaders and teams, supporting both the JDR model (Bakker and colleagues) and the PsyCap literature (Luthans and colleagues). Importantly, we find support towards engagement not only at the individual level (leaders), but also at the team level, supporting the calculation of a global team constructs (Bono & Judge, 2003). As such, we extend both these literatures through testing unique relationships and at a unique level (teams). Furthermore, we found support for the crossover literature (Westerman and colleagues) and show that PsyCap can crossover from the leader to followers’ team engagement, another unique contribution. Finally, our analysis also supports the burgeoning field of followership (Shamir et al., 2007), where followers PsyCap had beneficial influence on leaders, encouraging them to be more engaged.

Finally, our mediation tests showed that followers PsyCap was more influential on leaders’ engagement than vice versa. Indeed, followers own PsyCap fully mediated the influence of leaders PsyCap on two of the three engagement dimensions, while leaders PsyCap only partially mediated the influence of followers PsyCap, showing it to still influence substantially the leaders own engagement.

While self-reported, the team constructs provide greater confidence as they support a consensus aggregation model (Chan, 1998), and further the crossover process between leaders and followers negates the issue of common method variance (CMV). Given the large number of teams and broad range of organizations, we suggest the findings are likely to be generalizable. Furthermore, the high correlation between Team PsyCap and Team Vigour suggests further analysis might be warranted, especially around the components of PsyCap, for example, the resilience dimension. In conclusion, the present study provides useful insights into understanding how personal psychological resources can influence engagement, not only of the self, but between working partners, whether leaders-to-followers, and followers-to-leaders. Clearly, personal psychological resources like PsyCap appear to have strong benefits, not only for the individual but others who work around them, including upwards from followers to leaders.
REFERENCES


Table 1. Correlations and Descriptive Statistics of Study Variables

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N=199, *p<.05, **p<.01
Table 2. Hierarchical Regression Analysis for PsyCap towards Leader Work Engagement.

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† p<.1, * p<.05, ** p<.01, *** p<.001, Standardized regression coefficients. All significance tests were two-tailed.
Table 3. Hierarchical Regression Analysis for PsyCap towards Follower Work Engagement.

| Variables | Follower Work Engagement | | | |
|-----------|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
|           | Vigour | Dedication | Absorption |
|           | Model 1 | Model 2 | Model 3 | Model 1 | Model 2 | Model 3 | Model 1 | Model 2 | Model 3 |
| Step 1: Control Variable | | | | | | | | | |
| Team Time with Leader | .31*** | .30*** | .22* | .25** | .23** | .14* | .22* | .21* | .12 |
| Step 2: Leader Predictor | | | | | | | | | |
| Leader PsyCap | .39*** | .12* | .25** | .03 | .15* | -.08 |
| Step 3: Team Predictor | | | | | | | | | |
| Team PsyCap | | | | | | | | | |
| R² change | .11*** | .15*** | .29*** | .06** | .06** | .25*** | .05* | .02† | .20*** |
| Total R² | .11 | .26 | .55 | .06 | .12 | .38 | .05 | .07 | .27 |
| Adjusted R² | .10 | .25 | .54 | .06 | .11 | .36 | .04 | .06 | .25 |

† p<.1, * p<.05, ** p<.01, *** p<.001, Standardized regression coefficients. All significance tests were single-tailed.
Figure 1. Study Model

LEADER PSYCAP

LEADER VIGOUR

LEADER DEDICATION

LEADER ABSORPTION

FOLLOWER PSYCAP

FOLLOWER VIGOUR

FOLLOWER DEDICATION

FOLLOWER ABSORPTION