

This article was downloaded by:[Fu Berlin]  
[Fu Berlin]

On: 12 July 2007

Access Details: [subscription number 768491894]

Publisher: Psychology Press

Informa Ltd Registered in England and Wales Registered Number: 1072954

Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## International Journal of Psychology

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713659663>

### Functional roles of social support within the stress and coping process: A theoretical and empirical overview

Online Publication Date: 01 August 2007

To cite this Article: Schwarzer, Ralf and Knoll, Nina , (2007) 'Functional roles of social support within the stress and coping process: A theoretical and empirical overview', International Journal of Psychology, 42:4, 243 - 252

To link to this article: DOI: 10.1080/00207590701396641

URL: <http://dx.doi.org/10.1080/00207590701396641>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

© Taylor and Francis 2007

# Functional roles of social support within the stress and coping process: A theoretical and empirical overview

Ralf Schwarzer

*Freie Universität Berlin, Germany*

Nina Knoll

*Charité - Universitätsmedizin Berlin, Germany*

This article reports four longitudinal field studies and one experimental study designed to shed light on the functional roles of social support within the stress and coping context. First, the enabling hypothesis is examined that assumes a facilitating effect of support on self-efficacy, which, in turn, promotes coping with the aftermath of cardiac surgery. Second, we discuss the support cultivation hypothesis that regards support as a mediator between self-efficacy and various outcomes, such as depressive mood, as illustrated by a finding on the experience of macrosocial stress during the East German transition. Third, support is highlighted as a coping resource by specifying provided partner support as a predictor of patients' coping with cancer. It was found that the direct effect of provided support on coping needs to be mediated by received support in order to become effective. Fourth, coping efforts of a target person are found to be predictive of support intentions of a potential provider. The better a victim appears to cope with various stigmas, the higher the likelihood that a significant other is willing to help. Fifth, in a dyadic study on coping with cancer, partners were found to provide high levels of support to patients, but received support was affected only at later points in time. Time-lagged partner effects may characterize resource transfer in asymmetric social situations in which only one element of the dyad is under severe stress.

Cet article fait état de quatre études longitudinales sur le terrain et une étude expérimentale qui avaient pour but de clarifier les rôles fonctionnels du soutien social au sein du contexte du stress et de l'adaptation. Premièrement, nous avons examiné l'hypothèse d'habilitation qui assume un effet facilitateur du soutien sur l'auto-efficacité. Celle-ci, en retour, promouvoit l'adaptation des patients en postopératoire de chirurgie cardiaque. Deuxièmement, nous discutons l'hypothèse d'une culture de soutien selon laquelle le soutien serait un médiateur entre l'auto-efficacité et les divers résultats, comme l'humeur dépressive, telle qu'illustrée par un résultat concernant l'expérience de stress macrosocial pendant la transition de l'Allemagne de l'Est. Troisièmement, le soutien est souligné comme une ressource d'adaptation en spécifiant le soutien donné par le conjoint comme prédicteur de l'adaptation des patients au cancer. Les résultats indiquent que l'effet direct du soutien donné sur l'adaptation a besoin d'être médié par le soutien reçu pour devenir efficace. Quatrièmement, on a trouvé que les efforts d'adaptation d'une personne-cible prédisent les intentions de soutien d'un donneur potentiel. Le mieux la victime paraît s'adapter aux divers stigmas, plus grande est la probabilité qu'une personne significative est disposée à l'aider. Cinquièmement, dans une étude dyadique sur l'adaptation au cancer, on a trouvé que les conjoints offrent des niveaux élevés de soutien aux patients mais le soutien reçu était affecté seulement à des moments ultérieurs. Les effets à retardement du soutien du conjoint peuvent caractériser le transfert de ressource dans des situations sociales asymétriques dans lesquelles seulement un élément de la dyade est sous stress sévère.

El artículo informa sobre cuatro estudios longitudinales de campo y un estudio experimental diseñados para arrojar luz sobre el rol funcional del apoyo social dentro del contexto de estrés y afrontamiento. Primero, se comprueba la hipótesis que asume el efecto facilitador del apoyo sobre la autoeficacia la cual promueve el afrontamiento de las consecuencias de cirugía cardíaca. Segundo, se discute la hipótesis de cultivación de apoyo que considera a éste como mediador entre autoeficacia y varios resultados como estado de ánimo depresivo tal como se vio en los descubrimientos sobre el estrés macrosocial experimentado durante la transición de Alemania de Este. Tercero, se enfatiza que el apoyo es un recurso para el afrontamiento especificando el apoyo proporcionando por la pareja como un predictor de afrontamiento del cáncer en los pacientes. Se encontró que el

Correspondence should be addressed to Prof. Dr. Ralf Schwarzer, Health Psychology (PF 10), Freie Universität Berlin, Habelschwerdter Allee 45, 14195 Berlin, Germany (E-mail: [health@zedat.fu-berlin.de](mailto:health@zedat.fu-berlin.de)).

© 2007 International Union of Psychological Science

<http://www.psypress.com/ijp>

DOI: 10.1080/00207590701396641

efecto directo del apoyo proporcionado en el afrontamiento tiene que ser mediado por el apoyo recibido para que pueda ser efectivo. Cuarto, se encontró que los esfuerzos de afrontamiento del destinatario predicen las intenciones de la persona que podría proporcionarlo. En cuanto mejor esta afrontando la víctima varios estigmas más alta la probabilidad de que una persona significativa quiera ayudar. Quinto, en un estudio de díadas sobre el afrontamiento del cáncer se encontró que las parejas proporcionaban altos niveles de apoyo a los pacientes pero el apoyo recibido se veía afectado sólo más tarde en el tiempo. Los retrasados efectos de pareja pueden ser una característica de un traslado de recursos en las situaciones sociales asimétricas en las cuales sólo un elemento de la díada sufre un estrés severo.

### BASIC CONCEPTUAL DISTINCTIONS

Social integration and social support are theoretical constructs that refer to the degree to which individuals are socially embedded and have a sense of belonging, obligation, and intimacy. *Social integration* pertains to the structure and quantity of social relationships, such as the size and density of networks and the frequency of interaction. *Social support*, on the other hand, refers to the function and quality of social relationships, such as perceived availability of help, or support actually received. Social support occurs through an interactive process and can be related to altruism, a sense of obligation, and the perception of reciprocity (Schwarzer & Leppin, 1991).

Social support has been defined in various ways (Schwarzer, Knoll, & Rieckmann, 2004). For example, it may be regarded as resources provided by others, as coping assistance, as an exchange of resources, or even as a personality trait. Several types of social support have been investigated, such as instrumental or tangible (assist with a problem, donate goods), informational (give advice), and emotional (offer reassurance, listen empathetically). A further distinction is made between provided support and received support. Both are self-reported accounts of social interactions within a given time period. These two constructs need not necessarily have much in common. They can be closely related, but they may also be unrelated, depending on the research context (Schwarzer, Dunkel-Schetter, & Kemeny, 1994a). Another distinction is between perceived available support and support actually received. The former doesn't happen because it pertains to anticipating help in time of need, whereas the latter refers to help provided within a given time period. The former is implicitly or explicitly prospective, the latter is always retrospective. This is an essential distinction because these two constructs need not necessarily have much in common. They are closely related in some studies, but unrelated in others, depending on wording and context. Expecting support in the future appears to

be a stable personality trait (Sarason, Levine, Basham, & Sarason, 1983) that is intertwined with optimism, whereas support provided in the past is based on actual circumstances. To which degree this distinction emerges empirically also depends on the amount of specificity in the item wordings. The more diffuse and general the questions are, the more the responses may be influenced by the respondents' personality characteristics.

### SOCIAL SUPPORT IN THE STRESS AND COPING CONTEXT

Social support plays a key role in the stress and coping process. For example, it has been studied in patients with severe health conditions, such as myocardial infarction and cancer, and during the recovery phase. According to the transactional stress theory (Lazarus & Folkman, 1984), social support represents one resource factor, among others, that influences the cognitive appraisal of stressful encounters. Coping, then, is a result of this cognitive appraisal. The more support is available, the better coping is facilitated. According to this theory, resources influence coping, and coping generates various adaptational outcomes. A host of findings have confirmed this three-step approach. In a study by Holahan, Holahan, Moos, and Brennan (1997) on psychosocial adjustment in cardiac patients, those who felt supported were more inclined to choose active, approach-oriented coping strategies, which led to fewer depressive symptoms. In another study (Luszczynska, Mohamed, & Schwarzer, 2005), support and self-efficacy were found to act as resources of coping among cancer surgery patients, resulting in higher levels of post-traumatic growth. Boehmer, Luszczynska, and Schwarzer (in press) found that support and self-efficacy predicted active coping, which led to a higher quality of life in tumour patients. In a study on medication adherence in HIV-positive patients (Weaver et al., 2005), social support was negatively associated with avoidant coping, which, in turn, was in line with lower adherence levels.

In terms of its functional value, social support can have a main effect on various outcomes, or it can interact with the experience of stress. It has been postulated that social support might reveal its beneficial effect on health and emotions only in times of distress, as it buffers the negative impact of stressful events. This moderating impact is known as the *stress-buffering effect*. Moreover, there are a number of mediator effects that characterize the mechanisms through which social support operates in the stress and coping process, or by which social support is established and maintained (Schwarzer & Leppin, 1991). An overview of such mediator effects is provided below and is discussed in terms of differing theoretical perspectives and empirical findings.

### THE ENABLING HYPOTHESIS: SOCIAL SUPPORT ENABLES SELF-EFFICACY

From a proactive agentic perspective, support is not seen as just a potential protective cushion against environmental demands (Benight & Bandura, 2004). Rather, support providers may facilitate an individual's self-regulation by enabling one's adaptive capabilities to face challenges and to overcome adversity. In that, social support may provide an opportunity to engage in vicarious experiences in dealing with a stressor at hand. This should be especially true when support is granted by persons who have to deal with the same stressor and demonstrate competency in doing so. On the other hand, social support may represent a symbolic experience in which members of the network provide verbal assurances of the support recipient's competency to deal with the problem. A third possible pathway connecting social support with increases in self-efficacy may place the reduction of negative affect in a mediator position. Negative affect and stress-related arousal may be used as a source of information concerning one's own competence to cope with a situation at hand. Social support may reduce stress-related arousal and thus provide another source of increased self-efficacy. This last pathway then combines the enabling hypothesis with the stress-reducing function of social support.

Evidence for the enabling hypothesis of perceived social support comes from a number of studies on recovery from traumatic stress. Benight and Bandura (2004) have demonstrated that perceived social support generates favourable outcomes only to the extent that it is associated with higher perceived self-efficacy to overcome challenging demands. Further associations

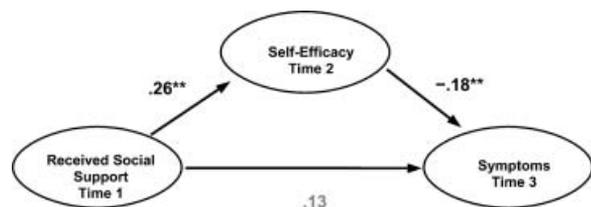
between perceived support and self-efficacy beliefs, as well as evidence for the latter serving as a mediator between support and various beneficial outcomes in different emotional and behavioural domains, were reported in earlier studies that investigated diverse populations (e.g., Cheung & Sun, 2000; Cutrona & Troutman, 1986; Duncan & McAuley, 1993).

Moreover, received support has also been shown to be associated with higher levels of self-efficacy. For example, Luszczynska, Sarkar, and Knoll (in press b) have examined predictors of adherence to highly active antiretroviral therapy in AIDS patients. Outcomes such as physical functioning, benefit finding, and adherence to therapy were related to received social support. However, these effects of received support were mediated by levels of perceived self-efficacy.

In a longitudinal study on 193 cardiac patients in the week after surgery, Schröder, Schwarzer, and Konertz (1998) found that received support delivered its beneficial effect on physical symptom experience only through perceived self-efficacy. Patients undergoing coronary artery bypass graft surgery were surveyed before the event (Time 1) and were interviewed one week afterwards (Time 2). Amount of self-reported physical symptoms (e.g., discomfort, pain) 1 week post-surgery was chosen as the indicator of recovery. It was found that social support was only an indirect predictor of recovery, while levels of self-efficacy operated as a full mediator of its effect (Sobel test of indirect effect,  $p < .05$ ; see Figure 1). Thus, even recovery from surgery might in part be based on personal enablement (Benight & Bandura, 2004).

### THE CULTIVATION HYPOTHESIS: SELF-EFFICACY MAINTAINS AND CULTIVATES SOCIAL SUPPORT

The enabling function of support represents only one possible mechanism within the stress and adaptation process. The reverse pathway is also

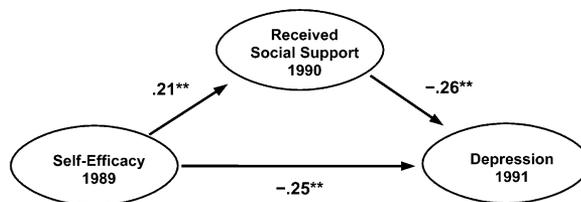


**Figure 1.** Self-efficacy mediates the effect of social support on physical symptoms after surgery in 193 cardiac patients. \*\*  $p < .01$ .

compatible with the proactive agentic perspective. Self-efficacy is not only a mediator of the support-recovery relationship, but it also operates as an establisher of support. This is accomplished by self-regulatory social activities. People take the initiative, they go out and make social contacts, they take action to maintain valuable social relationships, and they invest effort to improve, extend, and cultivate their networks. The better their self-efficacy, the better their supportive resources become. Various empirical findings can be reinterpreted with this perspective in mind.

One example is the research on work stress experienced by 535 factory employees in Costa Rica (Schwarzer & Gutiérrez-Doña, 2005). Self-efficacy was assessed at the beginning of the study, and received support and depressive mood were assessed half a year later. At the second measurement point, 6 months later, depressive mood was negatively associated with initial self-efficacy, ( $\beta = -.22$ ). However, this relationship was partially mediated by received support ( $r = .28$ ,  $\beta = -.17$ ; Sobel test of indirect effect,  $p < .01$ ). Thus, received support partially mediated the effect of self-efficacy on emotional state, pointing to the possibility that active establishment of supportive relationships was instrumental for the beneficial effect.

Further evidence for the importance of support as a mediator of self-efficacy and negative affect after a stressful life event originates from a study conducted when the Iron Curtain collapsed in central Europe. Received social support was examined among East Germans in a 2-year follow-up study initiated shortly before the fall of the Berlin Wall. Longitudinal data were collected, starting in September 1989 (Time 1). The second and third waves were conducted during the autumns of 1990 (Time 2) and 1991 (Time 3). The experience of macrosocial crisis and political ambiguity was clearly stressful for East Germans, who needed to draw upon all possible resources, including their social networks (Schwarzer, Hahn, & Schröder, 1994b). The nature of this experience made it likely that study participants would manifest an impaired quality of life. Time 2 received social support predicted Time 3 depressive mood ( $\beta = -.26$ ), and Time 1 self-efficacy also predicted Time 3 depressive mood ( $\beta = -.25$ ). Self-efficacy was positively related to received support ( $r = .21$ ). In the subsample of 265 women, received support partially mediated the effect of self-efficacy on depression (Sobel test of indirect effect,  $p < .01$ ; see Figure 2). There was no effect in the subsample of men, probably due to sample characteristics that have been discussed



**Figure 2.** Support partially mediates the effect of self-efficacy on depression, in 265 women from East Germany, observed over 2 years at a time of dramatic macrosocial change (1989–1991). \*\*  $p < .01$ .

elsewhere (Knoll & Schwarzer, 2002; Schwarzer et al., 1994b).

### CULTIVATING AND ENABLING: BRIEF SUMMARY AND OUTLOOK

In sum, evidence points to associations of social support with agency beliefs, with the latter likely to explain a considerable part of the former's potential positive outcomes (enabling hypothesis of support). Moreover, findings from further correlational studies suggest that the relationship among self-efficacy and social support may go both ways, in that self-efficacy may also enhance social resources (cultivation hypothesis). There is, however, a lack of studies directly demonstrating that different forms of social support may indeed affect *changes* in recipients' self-efficacy, and vice versa. Because more conclusive evidence is still missing, future studies might begin to fill this gap by testing both predictive directions among social support indicators and self-efficacy beliefs, for example, by employing cross-lagged longitudinal designs. Moreover, future research should test competing effects of different but overlapping support constructs, such as received versus perceived support, to further clarify "active agents" within these associations.

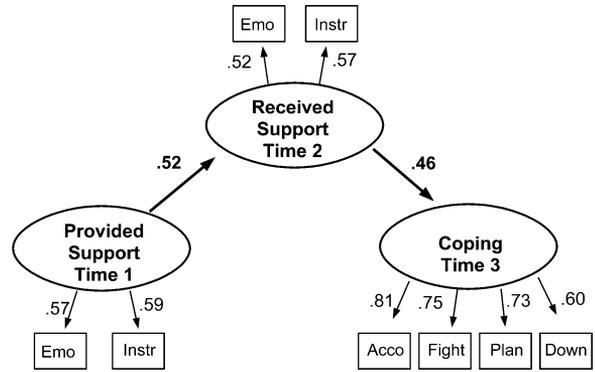
### SUPPORT AND COPING: PROVIDED SUPPORT FACILITATES COPING

Social support theories are intertwined with the concepts of *stress* and *coping*. The cognitive appraisal of stress, for example, depends partly on the perceived availability of social resources. Moreover, coping is also supposed to depend on such resources. Although the relationships in the stress and coping process are complex and multivariate, we will constrain the research question here to the bivariate support/coping relationship, examining both predictive directions separately. It is obvious that coping can generate more or less

support, and that support, on the other hand, can facilitate coping, depending on the situation. Most research has focused on the patient's self-reported perceived or received support. A different picture may emerge for the partner's self-reported provided support. The question is whether provided support facilitates coping for the patient. Our research on 108 cancer surgery patients and their partners illustrates the bivariate facilitating effect (Schulz & Schwarzer, 2004). We had measured support from partners 1 month after surgery and used this measure to predict coping of patients 5 months later. Considerable direct effects of provided support on coping emerged.

However, this association did not reveal anything about the possible mechanism through which the provision of partner support delivered its beneficial effect on coping. It is most likely that provided support has to be actually received before it can unfold its potential positive effect. Thus, received support needs to be specified as a mediator between provision and coping, which we have done in an extension of the previous study, to be reported here for the first time. This analysis included 173 couples. The Berlin Social Support Scales (BSSS; Schulz & Schwarzer, 2003) were used to assess various dimensions of social support.

A structural equation model was specified, examining the provided support effect on coping, with received support as a mediator. The provided support factor was composed of the emotional and instrumental support subscales of the BSSS, and the received support factor was specified correspondingly. The coping factor was composed of four scales designed to measure *Accommodation*, *Fighting Spirit*, *Planning*, and *Downward Social Comparison* (Luszczynska et al., 2005; Schulz & Schwarzer, 2004). Partner-provided support was assessed 1 month after cancer surgery; patient-received support and patient coping were assessed 6 months after surgery. The analysis generated a very good fit between model and data,  $\chi^2(16) = 21.5$ ,  $p < .16$ , NFI = .94, TLI = .96, CFI = .98, RMSEA = .045. Adding a direct path from provided support to coping resulted in a less satisfactory fit. Figure 3 displays the findings. Provided support was moderately associated with received support across the 5-month interval. At Time 2, received support and coping were also moderately interrelated. There was full mediation by the factor received support, with a standardized indirect effect of .24. Twenty-one per cent of the coping variance has been accounted for. This attests to the mechanism of how partner behaviour can make its effect on patient coping (see also Manne, Winkel, Ostroff, Grana, & Fox, 2005). In



**Figure 3.** Provided spousal support affects coping of cancer surgery patients indirectly via received support over a 5-month observation period, based on 173 couples. Emo = emotional support, Instr = instrumental support, Acco = Accommodation, Fight = Fighting spirit, Plan = Planning, Down = Downward comparison.

this sense, provided social support constitutes “coping assistance” (Cutrona, 1996), or it serves as a facilitator of adaptation in a life crisis.

### COPING AND SUPPORT: COPING EFFORTS MOBILIZE SUPPORT PROVISION

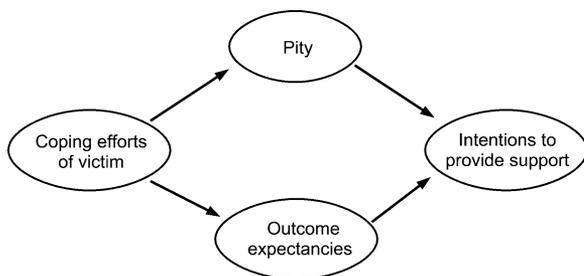
In the opposite predictive direction, coping, especially via mobilization of support, may generate different levels of support provision. The mobilization of support can be understood as a coping strategy. It pertains to an individual's preference to request help from others in times of need. Empirically, it is associated with the amount of support received in a subsequent stage of a stress episode.

In the context of dyadic coping, studies investigate which stimuli from the future recipient trigger supportive responses in the partner. For example, mobilization can take place by a direct request for help, by nonverbal cues, or by ostentatious withdrawal (Klauer & Winkler, 2002). Moreover, a person's coping behaviour can make an impression on the provider that lets him or her form an intention to help (Silver, Wortman, & Crofton, 1990). Willingness to help a significant other in an adverse life situation depends, among other factors, on the victim's own contribution to solving the problem. If the victim remains passive and does not take instrumental action to improve the situation, the inclination of a potential helper also remains low. In contrast, if the victim makes an active contribution to overcome adversity, the helper develops a higher intention to add support on top of these efforts (Schwarzer & Weiner, 1991).

Experimental studies have explored how an intention to help arises from observing a target person in distress. In one such study, we have described scenarios of eight target persons ("roommates") suffering from Aids, cancer, heart disease, drug abuse, anorexia, obesity, depression, or child abuse, who all differed in their levels of onset controllability and coping efforts (Schwarzer, Dunkel-Schetter, Weiner, & Woo, 1992). Participants were asked to report their emotions, expectancies, and intention to help, depending on these two experimental factors. We found, in general, that onset controllability was a much weaker predictor than coping efforts. How the patient or victim coped with the condition was crucial for the amount of intended support provision. Active patients were more likely to receive support than passive ones.

Moreover, the possible causal pathways were explored separately for the eight conditions, resulting in eight path diagrams that specified emotions (pity) and outcome expectancies as mediators between experimental factors and support. Outcome expectancies were simply measured by asking, "How likely is it that the condition will improve?" Both mediators turned out to be of substantial value, depending on each of the eight conditions. Figure 4 represents the general mechanism across all eight scenarios that translates the perceived coping efforts into support intentions (omitting the dispensable onset controllability factor). In order to become willing to help, the helper should perceive the victim as actively coping, should feel pity, and should believe that the condition will improve (Schwarzer et al., 1992).

Thus, from a provider perspective, a judgment of appropriateness and usefulness should accompany one's emotions before investing supportive efforts. From a patient perspective, it makes sense to cope in a problem-focused manner because such an adaptive behaviour may trigger



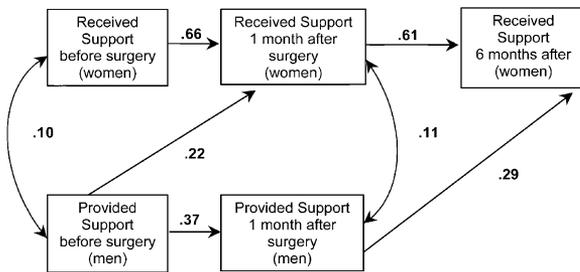
**Figure 4.** Outcome expectancies and pity as mediators between recipient characteristics (victim's coping) and social support intentions of the potential provider.

one's social network to join in. In other words, in a dyadic situation, coping efforts are likely to be rewarded.

### HOW MUCH PROVIDED SUPPORT BECOMES RECEIVED SUPPORT? THE RESOURCE TRANSFER HYPOTHESIS

In times of need, partners play an important role in patients' adjustment to illness. Support from a partner has been shown to influence how patients adjust to life stress. Several studies have documented that emotional spousal support is associated with adaptation to and recovery from cancer, with immune parameters, and with positive mood. For instance, greater quality of support was associated with healthier neuroendocrine functioning in breast cancer patients (Coyne & Smith, 1991, 1994; DeLongis, Capreol, Holtzman, O'Brien, & Campbell, 2004; Revenson, Kayser, & Bodenmann, 2005).

As shown above (Figure 3), there is not a one-to-one relationship between provided and received support. It is assumed that partners' reports of support provided are to some degree reflected in patients' reports of support received (Luszczynska, Boehmer, Knoll, Schulz, & Schwarzer, in press a). However, an accurate match between the level of support reported by the partner and the level reported by the patient is not expected. Partners might misperceive the amount of support they extend, in line with a "self-serving bias," seeing themselves as empathetic and caring, whereas the recipient might harbour a different impression of the provider's behaviour or intentions. In a study by Coriell and Cohen (1995), there was only moderate agreement within dyads about the occurrence of supportive behaviours. Dyad intimacy was associated with greater concordance. Partners may also try to protect the support recipient by buffering bad news or negative events, thus shielding the patient from adverse circumstances (Coyne & Smith, 1991). In a similar vein, "invisible support" is considered important, for example when partners provide instrumental support without letting the target person know. Recipients cannot report this type of support because they are unaware of it (Bolger, Zuckerman, & Kessler, 2000). Recipients might also misperceive or underreport the amount of support they believe they receive. Negative affect, such as depression, could cloud perception of helpful acts or undermine beliefs about how much others care (Cutrona, Hessling, & Suhr, 1997). In sum, a moderate relationship between partner's



**Figure 5.** Path analysis model describing the relationship between received and provided support over time in 65 female cancer patients and their male partners.

report of provided support and recipient's report of received support can be expected.

Moreover, the mechanism should be mostly unidirectional. Provided support should result in received support, but not the opposite. This "resource transfer hypothesis" assumes a unidirectional effect of help on the patient, in particular for situations where one element of the dyad is in severe distress, while the other one may be only indirectly affected. We have studied this hypothesis in research on coping with cancer surgery (Schwarzer, Boehmer, Luszczynska, Mohamed, & Knoll, 2005).

The analysis was based on 65 female patients who were observed at three points in time, half a year apart. Their intimate partner completed the questionnaire at two time points (before surgery and 1 month after surgery). A structural equation model was designed to allow for an examination of effects leading from partner provided support before surgery as well as 1 month after surgery to patient received support at 1 month after surgery and 6 months after surgery. The data-model fit was satisfactory,  $\chi^2(3) = 7.9$ ,  $p = .05$ ,  $\chi^2/df = 2.6$ ,  $RMR = .01$ ,  $GFI = .96$ . Received support was stable over time, with  $r = .66$  and  $r = .61$ , whereas support provided by partners was unstable, with  $r = .37$ . The initial relationship between provided and received support was  $r = .10$ , increasing to  $r = .22$  and  $r = .29$  when partner effects were considered to operate in a time-lagged fashion. Thus, partners' support that was provided before surgery covaried with support received 1 month later, and support provided 1 month after surgery covaried with support received 5 months later. This is remarkable because there were no substantial cross-sectional correlations (see Figure 5).

## DISCUSSION

This research programme attempts to contribute to a better understanding of some functional

mechanisms of social support within the stress and coping process. First, support can be regarded as a resource factor that facilitates the target person's own coping capabilities. This has been called the enabling function of support (Benight & Bandura, 2004). This model assumes that support does not have a direct effect on coping and adaptational outcomes, but that its effect is mediated by perceived self-efficacy. Evidence from studies on medication adherence and on physical symptoms after cardiac surgery has been presented to illustrate the enabling model. Second, the opposite effect has been found in other studies, with self-efficacy being instrumental in improving social networks and in recruiting social support from such networks. This has been called the "support cultivation hypothesis." Empirical evidence from two studies (work stress in Costa Rican factory workers and macrosocial stress in East Germans) has been cited. The two opposing predictive directions do not exclude each other. Both effects may be present at the same time, depending on the context. Future research might examine both directions, using longitudinal designs and predicting change in support and efficacy beliefs for a more rigorous approach.

Similarly, the support-coping relationship can be described as two opposing predictive directions, both of them being meaningful in certain circumstances. Many studies have shown that perceived and received social support facilitate coping, but only few have data from such support sources as spouses. Thus, more research is needed on actually provided support and its effect on coping. Evidence shows that provided support might be unrelated to coping when specified only as a direct effect. Only when received support is specified as a mediator between provided support and coping does an effect emerge (see also Manne et al., 2005).

The opposite direction, namely the effect of coping on support, is not well understood as yet. Experimental work using the scenario technique has demonstrated that target persons who cope poorly do not trigger the motivation of bystanders to extend support. If victims of adversity do not make an attempt to help themselves, they cannot expect others to invest much effort in supporting them. In contrast, victims who try hard to overcome adversity make others more inclined to assist. This evidence is based on social-psychological work on the motivation of providers. What is lacking is longitudinal research in natural settings to obtain a clear picture of such mechanisms in the stress and health domain. The intention to provide support might be different in long-lasting relationships and in casual acquaintances.

Even when a great deal of support is extended, as reported by the provider, it does not mean that an equivalent amount of support is actually received. Support transfer from provider to recipient may depend on various characteristics on both sides of the dyad. For instance, Coriell and Cohen (1995) found that dyad intimacy was associated with greater concordance in recipient and provider reports of support.

Our study on 173 couples attempts to contribute to a better understanding of support provided and support received during times of crisis. Previous research on this topic has not always been longitudinal, and it has often failed to include actual data of significant others, thus relying only on recipients' self-reports about their partners' behaviour. In the context of dyadic coping with a critical life event, our study provides evidence for dyadic patterns in social support. There is some agreement on the support transaction between men and women (i.e., correlations between provided and received support). The amount of support received, as reported by target persons, however, is not the same as the amount of support provided that is reported by their partners. Provider effects emerged in a time-lagged manner (i.e., earlier provision was still associated with received support after some time had passed) because the extension of support may need time to be recognized and valued by the recipient.

Evidence for the resource transfer hypothesis was also demonstrated by the analysis of 65 women who had to undergo cancer surgery. Women who reported receipt of support 6 months after surgery had partners who had reported support provision 5 months earlier. We conclude that support may be understood as a time-lagged phenomenon (i.e., support provided at one point in time may be noticed by the recipient at a later point in time). The variation in support provided is reflected by a variation in support received at later points in time. This result can also be interpreted as an indication of a good functioning relationship (Cutrona, 1996; Knoll, Burkert, & Schwarzer, 2006a; Knoll, Schulz, Schwarzer, & Rosemeier, 2006b; Schröder & Schwarzer, 2001; Schröder, Schwarzer, & Endler, 1997).

The social support processes found in our studies mostly represent a situation of asymmetry, where one element of the dyad is much more affected than the other. In dealing with everyday life stress, in contrast, it is expected that bidirectional dyadic coping prevails. In such situations, one would expect joint partner and actor effects, which constitutes the reciprocal or symmetric model (Kenny, 1996; Ledermann & Bodenmann,

2006). Also, the inter-measurement time lags were long and did not allow investigating day-to-day trajectories. Ideally, within-couple support processes should be studied with diary designs, including repeated measurements per day (Laurenceau & Bolger, 2005).

Moreover, the cited findings and models refer to effective social support transactions, in the sense that social support processes were mostly related to indicators of successful adaptation. However, numerous findings have shown that predominantly receiving support is often associated with negative outcomes, particularly with increases in distress (e.g., Bolger et al., 2000; Coyne, Wortman, & Lehman, 1988; Dunbar, Ford, & Hunt, 1998; Revenson, Schiaffino, Majerovitz, & Gibofsky, 1991). Our assumptions about the functional roles of enacted social support as enabling, facilitating coping, or a transfer of resources cannot account for evidence that indicates that being provided with and receiving support may at times harm recipients' well-being instead of being supportive. Future model expansions and research thus need to focus on moderators that further qualify the relationships between support transactions and both positive and negative outcomes thereof.

## REFERENCES

- Benight, C., & Bandura, A. (2004). Social cognitive theory of posttraumatic recovery: The role of perceived self-efficacy. *Behaviour Research and Therapy*, *42*, 1129–1148.
- Boehmer, S., Luszczynska, A., & Schwarzer, R. (in press). Coping and quality of life after tumor surgery: Personal and social resources promote different domains of quality of life. *Anxiety, Stress, and Coping*.
- Bolger, N., Zuckerman, A., & Kessler, R. C. (2000). Invisible support and adjustment to stress. *Journal of Personality and Social Psychology*, *79*, 953–961.
- Cheung, S., & Sun, S. Y. K. (2000). Effects of self-efficacy and social support on the mental health conditions of mutual-aid organization members. *Social Behavior and Personality*, *28*, 413–422.
- Coriell, M., & Cohen, S. (1995). Concordance in the face of a stressful event: When do members of a dyad agree that one person supported the other? *Journal of Personality and Social Psychology*, *69*, 289–299.
- Coyne, J. C., & Smith, D. A. F. (1991). Couples coping with a myocardial infarction: A contextual perspective on wives' distress. *Journal of Personality and Social Psychology*, *61*, 404–412.
- Coyne, J. C., & Smith, D. A. F. (1994). Couples coping with myocardial infarction: Contextual perspective on patient self-efficacy. *Journal of Family Psychology*, *8*, 1–13.
- Coyne, J. C., Wortman, C. B., & Lehman, D. R. (1988). The other side of social support: Emotional over-involvement and miscarried help. In B. G. Gottlieb

- (Ed.), *Marshaling social support: Formats, processes, and effects* (pp. 305–330). Newbury Park, CA: Sage.
- Cutrona, C. E. (1996). *Social support in couples*. Thousand Oaks, CA: Sage.
- Cutrona, C. E., Hessling, R. M., & Suhr, J. A. (1997). The influence of husband and wife personality on marital social support interactions. *Personal Relationships, 4*, 379–393.
- Cutrona, C. E., & Troutman, B. R. (1986). Social support, infant temperament, and parenting self-efficacy: A mediational model of post-partum depression. *Child Development, 57*, 1507–1518.
- DeLongis, A., Capreol, M. J., Holtzman, S., O'Brien, T. B., & Campbell, J. (2004). Social support and social strain among husbands and wives: A multilevel analysis. *Journal of Family Psychology, 1*, 470–479.
- Dunbar, M., Ford, G., & Hunt, K. (1998). Why is the receipt of social support associated with increased psychological distress? An examination of three hypotheses. *Psychology & Health, 13*, 527–544.
- Duncan, T. E., & McAuley, E. (1993). Social support and efficacy cognitions in exercise adherence: A latent growth curve analysis. *Journal of Behavioral Medicine, 16*, 199–218.
- Holahan, C. J., Holahan, C. K., Moos, R. H., & Brennan, P. L. (1997). Psychosocial adjustment in patients reporting cardiac illness. *Psychology and Health, 12*, 345–360.
- Kenny, D. (1996). Models of non-independence in dyadic research. *Journal of Social and Personal Relationships, 13*, 279–294.
- Klauer, T., & Winkler, M. (2002). Gender, mental health status, and social support during a stressful event. In G. Weidner, M. Kopp, & M. Kristenson (Eds.), *Heart disease: Environment, stress, and gender. NATO Science Series, Series I: Life and Behavioural Sciences, Vol. 327* (pp. 223–236). Amsterdam: IOS Press.
- Knoll, N., Burkert, S., & Schwarzer, R. (2006a). Reciprocal support provision: Personality as a moderator? *European Journal of Personality, 20*, 217–236.
- Knoll, N., Schulz, U., Schwarzer, R., & Rosemeier, H. P. (2006b). Provider's appraisal detection bias and the efficacy of received support in medical students preparing for an exam. *British Journal of Social Psychology, 45*, 599–615.
- Knoll, N., & Schwarzer, R. (2002). Gender and age differences in social support: A study of East German refugees. In G. Weidner, M. S. Kopp, & M. Kristenson (Eds.), *Heart disease: Environment, stress, and gender. NATO Science Series I: Life and behavioural sciences, Vol. 327* (pp. 198–210). Amsterdam: IOS Press.
- Laurenceau, J. P., & Bolger, N. (2005). Using diary methods to study marital and family processes. *Journal of Family Psychology, 19*, 86–97.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Ledermann, T., & Bodenmann, G. (2006). Moderator- und Mediatoreffekte bei dyadischen Daten: Zwei Erweiterungen des Akteur-Partner-Interdependenz-Modells [Moderator and mediator effects in dyad data: Two extensions of the Actor-Partner-Interdependence Model]. *Zeitschrift für Sozialpsychologie, 37*, 27–40.
- Luszczynska, A., Boehmer, S., Knoll, N., Schulz, U., & Schwarzer, R. (in press a). Emotional support for men and women with cancer: Do patients receive what their partners provide? *International Journal of Behavioral Medicine*.
- Luszczynska, A., Mohamed, N. E., & Schwarzer, R. (2005). Self-efficacy and social support predict benefit finding 12 months after cancer surgery: The mediating role of coping strategies. *Psychology, Health & Medicine, 10*, 365–375.
- Luszczynska, A., Sarkar, Y., & Knoll, N. (in press b). Predictors of adherence to highly active antiretroviral therapy. *Patient Education and Counseling*.
- Manne, S. L., Winkel, G., Ostroff, J., Grana, G., & Fox, K. (2005). Partner unsupportive responses, avoidant coping, and distress among women with early stage breast cancer: Patient and partner perspectives. *Health Psychology, 24*, 635–641.
- Revenson, T. A., Kayser, K., & Bodenmann, G. (Eds.) (2005). *Couples coping with stress: Emerging perspectives on dyadic coping*. Washington, DC: American Psychological Association.
- Revenson, T. A., Schiaffino, K. M., Majerovitz, S. D., & Gibofsky, A. (1991). Social support as a double-edged sword: The relation of positive and problematic support to depression among rheumatoid arthritis patients. *Social Science and Medicine, 33*, 807–13.
- Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The Social Support Questionnaire. *Journal of Personality and Social Psychology, 44*, 127–138.
- Schröder, K. E. E., & Schwarzer, R. (2001). Do partners' personality resources add to the prediction of patients' coping and quality of life? *Psychology & Health, 16*, 139–159.
- Schröder, K. E. E., Schwarzer, R., & Endler, N. S. (1997). Predicting cardiac patients' quality of life from the characteristics of their spouses. *Journal of Health Psychology, 2*, 231–244.
- Schröder, K. E. E., Schwarzer, R., & Konertz, W. (1998). Coping as a mediator in recovery from heart surgery: A longitudinal study. *Psychology & Health, 13*, 83–97.
- Schulz, U., & Schwarzer, R. (2003). Soziale Unterstützung bei der Krankheitsbewältigung: Die Berliner Social Support Skalen (BSSS) [Social support and coping with illness: The Berlin Social Support Scales (BSSS)]. *Diagnostica, 49*, 73–82.
- Schulz, U., & Schwarzer, R. (2004). Long-term effects of spousal support on coping with cancer after surgery. *Journal of Social and Clinical Psychology, 23*, 716–732.
- Schwarzer, R., Boehmer, S., Luszczynska, A., Mohamed, N. E., & Knoll, N. (2005). Dispositional self-efficacy as a personal resource factor in coping after surgery. *Personality and Individual Differences, 39*, 807–818.
- Schwarzer, R., Dunkel-Schetter, C., & Kemeny, M. (1994a). The multidimensional nature of received social support in gay men at risk of HIV infections and AIDS. *American Journal of Community Psychology, 22*, 319–339.
- Schwarzer, R., Dunkel-Schetter, C., Weiner, B., & Woo, G. (1992). Expectancies as mediators between recipient characteristics and social support intentions. In R. Schwarzer (Ed.), *Self-efficacy: Thought*

- control of action* (pp.65–87). Washington, DC: Hemisphere.
- Schwarzer, R., & Gutiérrez-Doña, B. (2005). More spousal support for men than for women: A comparison of sources and types of support in Costa Rican factory workers. *Sex Roles, 52*, 523–532.
- Schwarzer, R., Hahn, A., & Schröder, H. (1994b). Social integration and social support in a life crisis: Effects of macrosocial change in East Germany. *American Journal of Community Psychology, 22*, 685–706.
- Schwarzer, R., Knoll, N., & Rieckmann, N. (2004). Social support. In A. Kaptein & J. Weinman (Eds.), *Health psychology* (pp.158–182). Oxford, UK: Blackwell.
- Schwarzer, R., & Leppin, A. (1991). Social support and health: A theoretical and empirical overview. *Journal of Social and Personal Relationships, 8*, 99–127.
- Schwarzer, R., & Weiner, B. (1991). Stigma controllability and coping as predictors of emotions and social support. *Journal of Personal and Social Relationships, 8*, 133–140.
- Silver, R. C., Wortman, C. B., & Crofton, C. (1990). The role of coping in support provision: The self-presentational dilemma of victims of life crises. In B. R. Sarason, I. G. Sarason, & G. R. Pierce (Eds.), *Social support: An interactional view. Wiley series on personality processes* (pp. 397–426). Chichester, UK: Wiley.
- Weaver, K. E., Llabre, M. M., Dura'n, R. E., Antoni, M. H., Ironson, G., Penedo, F. J., & Schneiderman, N. (2005). A stress and coping model of medication adherence and viral load in HIV-positive men and women on Highly Active Antiretroviral Therapy (HAART). *Health Psychology, 24*, 385–392.