

Chapter 9

Reciprocity in Interpersonal Relationships: An Evolutionary Perspective on Its Importance for Health and Well-being

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ABSTRACT

Based on an evolutionary analysis of reciprocal altruism, it is argued that humans have developed innate mechanisms to expect reciprocity in interpersonal relationships and that a lack of reciprocity is accompanied by negative affect. The authors present an overview of their own research programme documenting the importance of reciprocity in a wide variety of relationships, including marital relationships, lesbian relationships, extradyadic sexual relationships, friendships, professional and informal helping relationships, relationships with colleagues and supervisors at work, and relationships with the organization in which one is employed. In view of this broad range of relationships that seem to be governed by similar principles of reciprocity, it seems that a basic psychological mechanism is at work, and we suggest that this is rooted in evolution.

RECIPROCITY: A UBIQUITOUS PHENOMENON

The notion that reciprocity is a crucial feature of human social relationships is manifest in the work of large number of theorists with a wide variety

of backgrounds. Political scientists have shown that reciprocal behavioural strategies may lead in the long run to the highest level of outcomes (Axelrod, 1984). Marital therapists have developed programs aimed at increasing the awareness of reciprocity and at establishing reciprocal exchanges of rewarding behaviours (Liberman, Wheeler, deVisser, Kuehnel, & Kuehnel, 1980). Developmental psychologists have noted that throughout the life span, reciprocity and mutuality are central features of friendships (Hartup & Stevens, 1997). Sociologists have acknowledged the importance of reciprocity for human societies, particularly since the influential article by Gouldner (1960), and among anthropologists, "... reciprocity has long been recognized as a universal cornerstone of morality, rational choice, and group life" (Brown, 1991, p. 107–8).

Within social psychology, social exchange theorists documented decades ago how interpersonal relationships are governed by reciprocity concerns. For example, individuals who have supposedly hurt another by shocking him/her, appear to prefer a situation in which they can be shocked by the other; benefactors are liked more when their beneficiaries can be reciprocated than when they cannot (e.g., Hatfield & Sprecher, 1983); those who feel they have provided benefits to others without being adequately compensated experience frustration and anger (Walster, Walster, & Berscheid, 1978); and indebtedness is aversive because of feelings of obligation and owing, fear of being unable to repay the debt, and uncertainty about if, when, and how the debt could be repaid (Greenberg & Westcott, 1983). In this chapter we will first employ an evolutionary perspective to answer the question *why* reciprocity is apparently so important in human social life, and *why* individuals feel distressed in relationships that lack reciprocity. Next, we will present an overview, particularly of our own research documenting the importance of reciprocity in a wide variety of relationships, including marital relationships, lesbian relationships, friendships, professional–client relationships, relationships with colleagues and supervisors, and relationships with the organization in which one is employed. In doing so, we will show that a lack of reciprocity is associated with a variety of mental health outcomes, including burnout, loneliness, marital dissatisfaction and depression. In view of this broad range of relationships that seems to be governed by similar principles of reciprocity, and given the wide range of outcomes affected by a lack of reciprocity, we suggest that a basic psychological mechanism is at work that may be rooted in evolution.

THE EVOLUTION OF RECIPROCAL ALTRUISM

To understand the central role of reciprocity in human social life, we have to look for *ultimate* explanations, that is, we have to look for the possible reasons why a strong concern with reciprocity may have fostered survival and repro-

ductive success in our evolutionary past (e.g., Alexander, 1987; Buss, 1996). The clue to understanding the importance of reciprocity comes from neo-Darwinistic theories on altruism. Evolutionary biologists have for more than a century struggled with the many apparently altruistic behaviours that exist throughout the animal kingdom. Particularly challenging were the eusocial insects, such as ants and bees, where most individuals are sterile, spending their whole life helping and protecting other members of the community (e.g., Cronin, 1991; Dawkins, 1976). Among other animals, altruistic acts also seem widespread. For instance, ground squirrels may give warning calls in the case of danger, dolphins often react very empathically and supportively to others in distress, birds sometimes help their parents rather than reproduce themselves, and chimpanzees often show an altruistic concern for the suffering of others. From a classic Darwinian perspective, it does not make sense that individuals of a species would make sacrifices—and sometimes even risk their lives—for the good of others.

It was not until the 1960s and 1970s that potential answers to the question of altruism in evolution were offered by theoretical biologists such as Hamilton (1964), Williams (1966) and Trivers (1971). The first solution is *inclusive fitness* theory. The central assumption behind this theory is that, to put it succinctly, *individuals* have not been selected to survive but to guarantee the survival of their own *genes* in subsequent generations. According to this perspective, certain behaviours may seem altruistic on the individual level, but may be egocentric on the level of one's genes, a thesis elaborated in an outspoken way by Dawkins (1976). Inclusive fitness theory predicts that most cases of apparently altruistic behaviour are directed towards kin, such as children, siblings, and nieces and nephews, and that the willingness to engage in altruistic acts towards someone is linearly related to the degree of genetic relatedness. In some eusocial insects such as ants, due to specific biological anomalies, individuals share more genes with their siblings than they would with their offspring. From the perspective of reproductive success, it thus "pays" more to help one's sisters survive than to produce offspring of one's own (e.g., Cronin, 1991; Dawkins, 1976). There are numerous other pieces of evidence for inclusive fitness theory; these include rhesus monkeys helping their brothers more in fights than they do unrelated others; primates sharing food with offspring and mates; and the fact that humans have a universal concern with concepts of kin (Brown, 1991; De Waal, 1996; Trivers, 1985).

But how to explain prosocial and empathic behaviours in groups of *unrelated* individuals? For this purpose the theory of *reciprocal altruism* was developed. Using computer simulations as an illustration, Dawkins (1976) pointed out that in a population of "suckers", i.e. individuals exhibiting unconditional altruistic behaviour towards non-kin, for instance, by grooming anybody who needs it indiscriminately, "cheaters", i.e. individuals taking advantage of this altruistic behaviour by only accepting grooming and never

grooming anybody else, will rapidly increase in numbers, and will drive suckers to extinction. Cheaters will eventually not be very successful either, because they will receive no help from other cheaters. However, suppose a third type of individuals, called "grudgers" arises. Grudgers groom strangers and individuals who have groomed them, and will bear a grudge when someone cheats them, and will not groom such an individual in the future. According to Dawkins' computer model, after a critical proportion is reached, such a strategy will drive cheaters to extinction, will be more successful than the strategy adopted by suckers, and will be evolutionarily stable. This analysis illustrates how a tendency to altruistic and empathic behaviour towards non-kin may evolve and may be transmitted to future generations. Three conditions have been specified under which reciprocal altruism may arise (cf. Gould & Gould, 1989; Trivers, 1985).

(1) Favourable Cost-Benefit Ratio

Reciprocal altruism may develop when it costs little to provide favours to others, while one would considerably benefit when there is a chance that the favour is returned at a later point in time. A nice example of this is found among vampire bats, who live on the blood of other animals and starve if they go without feeding for more than two days. Such bats are often fed by regurgitation by well-fed roost mates, for whom it costs relatively little to contribute blood to the starving other, but who might benefit considerably from a similar reciprocal helping act in the future (Wilkinson, 1988).

According to de Waal (1996), among humans, as also for example among meat-eating social animals such as chimpanzees, wolves, and brown hyenas, reciprocal altruism evolved in part out of meat-sharing. The characteristics of meat make reciprocal exchanges quite adaptive. While it has a high nutritional value, *when* it becomes available (e.g., by killing prey), it is usually too much for a single individual to consume. Because in ancestral environments one could not preserve meat, it cost little to let others share in one's prey. As one might not catch a prey for weeks, it would benefit one considerably to have others around who "owe" one a share of meat. Indeed, chimpanzees seem to share meat more easily and in a much more co-operative way than they share, for example, bananas and leaves, which are usually more constantly available. Experiments have shown that chimpanzees and other apes understand the concept of exchange, and will give things in exchange for food (de Waal, 1996). Such sharing has been fostered by the development of coordinated hunting in groups, and de Waal (1996) even goes so far as to suggest that our concepts of reciprocity and morality are ultimately the result of the fact that our ancestors developed group hunting; "Human morality is steeped in animal blood" (de Waal, 1996, p. 146). However, this is probably only part of the story: particularly among males, reciprocity in supporting each other in fights against

predators, in conflicts within the group, and in conflicts with other groups, have probably contributed at least as much to the development of reciprocal altruism, as have cooperation between husbands and wives, and collaboration between females in gathering food, building shelters and raising young (Glantz & Pierce, 1989).

(2) Opportunity for Reciprocation

Reciprocal altruism can only develop when there are sufficient opportunities for help to be reciprocated, that is, when there is long-term contact with others who might eventually provide similar benefits in return (Gould & Gould, 1989). As noted by Hawkes (1992), "... it is not a past of mutual trust that makes friends and neighbours better candidates for reciprocity than strangers, but the greater likelihood that they will be around tomorrow" (p. 287). For instance, blood-sharing among vampire bats is related to the frequency of previous interaction: no individuals regurgitate to others unless they are seen together at least 60% of the time (Wilkinson, 1984). In general, according to Trivers (1985), reciprocal altruism would more likely evolve in species with a long life span, living in small, mutually dependent groups, with a long period of parental care, and with flexible dominance hierarchies. These requirements fit rather well what we know about ancestral humans, particularly as is apparent from descriptions of hunter-gatherer cultures. For example, the !Kung of Southern Africa live in small, egalitarian groups, and are highly dependent upon each other for survival. Moreover, women engage in breast-feeding for three or four years, and men and women collaborate in taking care of the young (Shostak, 1983). Indeed, in the lives of hunter-gatherers reciprocity is a matter of life and death, and sharing is ubiquitous (Glantz & Pierce, 1989).

(3) Mechanisms to Identify and Punish Cheaters

Reciprocal altruism can only develop by making it costly for individuals to cheat, thus with the co-evolution of mechanisms to identify and discriminate against individuals accepting but not giving help. Thus, it should be favoured in species capable of recognizing one another and remembering previous encounters (Cosmides & Tooby, 1992). Gould and Gould (1989) have emphasized that many animals engage in tit-for-tat strategies, i.e. being co-operative on the first move, and then always doing what the other does, thus rewarding cooperation, and punishing defection. This implies that particularly the last interaction determines one's behaviour towards the other, and indeed, from swallows to primates, animals place enormous weight on the last interaction they have had with each other. In general, animals engaging in sharing must be able to recognize those who have helped them in the past, and those who have not reciprocated favours. There is some evidence for this. For example,

a male baboon is more likely to help another unrelated individual in a fight who has helped him before (Trivers, 1985), and among chimpanzees in captivity, the number of food transfers from A to B is related to the number of transfers from B to A, and the tendency of A to support B in fights varies with the tendency of B to support A (de Waal, 1996).

To keep track of given and received favours, individuals need a memory capacity large enough to be able to identify all the members of their society, and to keep accurate social balance sheets (Gould & Gould, 1989). As shown by Dunbar (1993), there is across primates a high correlation between the ratio of the neocortex to the rest of the brain, and the size of the group in which a primate lives. Dunbar argues that the neocortex developed to an important extent to deal with the ever increasing complexity of social life. Cosmides and Tooby (1992) have developed an experimental program of research showing that individuals find it much easier to resolve a logical problem when it concerns the identification of cheaters than when it is merely a matter of logical thinking about a neutral problem (but see Holcomb, 1998 for a critique). The evolution of reciprocal altruism not only depends on the development of mechanisms for the identification of cheaters, but also on the development of responses that punish those who cheat, such as moralistic aggression found among chimpanzees (de Waal, 1996). In all cultures strong moral feelings are attached to reciprocity, and reciprocal behaviours are watched with a high degree of involvement (Brown, 1991). Many emotions that occupy such a central place in human life have as their basic function to monitor and regulate reciprocity in social interaction, such as moralistic standards against which the behaviour of other people is evaluated, gratitude and sympathy as responses to altruistic acts, acknowledging that one "owes" the other, feelings of guilt, and a widespread sensitivity to injustice (Trivers, 1985).

THE EXPLANATORY POWER OF THE EVOLUTIONARY PERSPECTIVE

Why would social psychology need the theory of reciprocal altruism? In the first place, this theory may have a heuristic value by generating new research questions and hypotheses, for instance about a special sensitivity for "cheaters", about the tendency to assess automatically when we meet someone we know whether we owe him/her something, about the conditions under which altruistic behaviour is more and less likely to occur, and about the benefits of behaving altruistically (e.g., Cosmides & Tooby, 1992). To give just one example, on the basis of the theory of reciprocal altruism, it was hypothesized and found that an altruistic attitude predicts the availability of social support a number of months later (Brown & Palameta, 1995). However, it must be emphasized that reciprocal altruism theory is a theory at a different

level of explanation than the typical social psychological theory. As noted by Buss (1996), just as astronomy was filled with important observations of planetary motions before they were successfully explained, social psychology is filled with a plethora of important empirically documented phenomena that lack a powerful explanatory framework. The evolutionary analysis of reciprocal altruism provides a metaperspective that may be able to integrate, clarify and reconcile divergent findings and theoretical perspectives on altruism and social exchange within social psychology.

An example of how the theory of reciprocal altruism may help in clarifying a controversy in social psychology concerns the discussion as to whether a "pure" form of altruism and empathy exists (see the most recent dispute between Batson *et al.*, 1997, and Cialdini, Brown, Lewis, Luce, & Neuberg, 1997). In line with de Waal (1996), we would like to suggest that as an *outcome* of the evolutionary *process* of benefiting from reciprocal altruism, humans and other animals have been endowed with a capacity for genuine love, empathy, sympathy and care, and seem to have an evolved capacity to engage spontaneously in helping others and to respond with empathy to others in need. This empathy may be intrinsic, that is, individuals usually will not feel they engage in empathic behaviour *because* they expect something in return. However, that does not contradict the notion that empathy is the result of the evolution of reciprocal altruism, neither does it contradict that humans do expect reciprocity in the long run.

A related discussion concerns the extent to which intimate relationships are governed by exchange principles. According to, for example, Mills and Clark (1982), exchange principles only apply to what they refer to as *exchange* relationships, such as business relationships and relationships between strangers, whereas in *communal* relationships, such as those between intimate partners, one is primarily concerned with the welfare of the other and is supposed to respond altruistically to the other partner's needs without an expectation of reciprocity. However, the evidence that Clark and Mills provide for this assertion is somewhat equivocal. For example, one of the experiments showed that male students who had helped an attractive, unattached woman, liked her most when she did not reciprocate this help *immediately*. However, these male students are probably not, as Clark and Mills assume, displeased when she returns the favour because they want a communal relationship, but probably for more mundane reasons: they want her to be in some debt, as in that way they can "cash in" later, for instance because the woman may find it harder to refuse to go out on a date. Indeed, if the woman *does* reciprocate, this reduces the male's power over her to claim a restoration of reciprocity.

Despite the ambiguity of these findings, those who expect something immediately in return for what they have given, or feel guilty when the other does things for them, may not develop particularly happy relationships. From an

evolutionary point of view, this is precisely what we would expect, as an expectation of *immediate* reciprocity is not the most successful strategy among individuals who have a long-term association. Because helping others will usually occur when oneself is not in need, a directly returned favour from the other will often add little to one's survival, whereas one would be helped greatly by receiving benefits at the moment that one needs it most. Thus, in stable cooperative relationships such as those between friends and mates, individuals may exhibit altruistic acts without wanting direct reciprocity, and may even refuse an immediate return of benefits. This does not exclude that, in a longer time perspective, individuals will expect reciprocity in terms of having their needs met roughly to the extent that they meet the other person's needs. Nevertheless, as Alexander (1982) has pointed out, in relationships between mates, potential mates, and relatives, reciprocity may not be a major concern, as altruistic acts in such bonds pay off in terms of genes, not in terms of returned goods or services. Indeed, the prototype of a communal relationship given by Mills and Clark (1982) is the mother-child relationship—an example that is evidently in line with inclusive fitness theory.

Finally, the theory of reciprocal altruism would suggest that well-adjusted individuals are characterized by an involvement in reciprocal relationships, and that a typical feature of individuals with psychological problems would be that they have a variety of problems with developing and maintaining such relationships. Indeed, there is evidence that psychiatric patients tend to maintain asymmetrical helping relationships, failing to reciprocate the support they receive from others (Gottlieb, 1985). As Gottlieb has noted, such an imbalance "... makes interaction less satisfying for both parties, because the helper is drained and the recipient feels uncomfortably indebted, suffering also a decline in good feelings about him/herself" (p. 430). In an evolutionary analysis of mental disturbance, Glantz and Pearce (1989) argued that most problems of people who come in for psychotherapy can best be understood as pathologies of reciprocity. Such people are not correctly weighing their emotional rights and duties. According to Glantz and Pearce, when clients begin to talk freely to their therapists, two types of events emerge: a list of grievances and injuries, and another list of failures to meet expectations and obligations. These two types of events reflect two broad categories of pathologies of reciprocity: *guilt*, characterized by giving too little or receiving too much, and a feeling of being on trial all the time, a pattern particularly characteristic of neurotics and the chronically depressed, and *entitlement*, a constant feeling that others give one too little, and a systematic and gross overvaluing of one's own contributions in relationships, a pattern particularly characteristic of psychopaths and sociopaths (see also, Nesse, 1991). We will now turn to the association between reciprocity and psychological well-being in a variety of relationships.

PAIR RELATIONSHIPS: THE EXCEPTIONAL PAIR BONDING AMONG HUMANS

Marital relationships are collaborative relationships between males and females that must have evolved because it was adaptive for ancestral humans to collaborate closely with the other sex in the raising of fit offspring. Humans are an exception among the great apes in that they have a strong tendency to engage in pair bonding, including a considerable investment of males in the offspring (Buss, 1994; Wright, 1994). In many ways men and women find similar characteristics important for a marital partner, such as being committed to the relationship, and being sociable and pleasant to be with (Van Yperen & Buunk, 1990). Nevertheless, it may be noted that, evolutionarily speaking, the basis for pair relationships was in part a sex-specific social exchange in which the female benefited from the provision of meat and protection by the male against higher-ranking males, while the male benefited from exclusive sexual access to the female and her investment in gathering food and raising their joint offspring (Glantz & Pearce, 1989).

Most studies on reciprocity in marital relationships have been guided by equity theory (Walster, Walster, & Berscheid, 1978), and in many of these studies, the Hatfield Global Measure, a simple, one-item measure, has been used to assess reciprocity (or equity, as it is usually referred to). This measure requests participants to indicate what kind of "deal" they are getting in their relationship, taking into account what they get out of it and put into it, compared to what their partner gets out of it and puts into it. Usually either five or seven possible answers are used, varying from "I am getting a *much better* deal than my partner", via "We are both getting an *equally good or bad* deal", to "My partner is getting a *much better* deal than I am". In answering this question, individuals seem to think in particular about socio-emotional contributions, such as companionship, liking and loving, acceptance and commitment (Smith & Schroeder, 1984; Van Yperen & Buunk, 1990). On the basis of this question, individuals are usually divided into three groups, i.e. a group perceiving reciprocity, a group feeling overbenefited and a group feeling underbenefited (see Table 9.1). In about 60% of cases, the answers of both spouses on this question appear to be in agreement (Van Yperen & Buunk, 1990).

Many studies have provided evidence that those perceiving reciprocity are the most happy in their relationships, and that underbenefited individuals report more dissatisfaction than overbenefited individuals (e.g., Buunk & Van Yperen, 1991; Van Yperen & Buunk, 1990, 1991b; for reviews see Hatfield *et al.*, 1985; Sprecher & Schwartz, 1994; Van Yperen & Buunk, 1994; see also Table 9.1). Although the absolute level of rewards seems a stronger predictor of satisfaction than reciprocity (Cate, Lloyd, Henton,

Table 9.1 Reciprocity and well-being

Type of relationship	Sample	Well-being measure	Underbenefit	Reciprocity	Overbenefit	Significance
Marital relationships	Married men (<i>n</i> = 294) (Van Yperen & Buunk, 1990)	Marital satisfaction	3.79 (13%)	4.38 (62%)	4.27 (25%)	**
	Married women (<i>n</i> = 415) (Van Yperen & Buunk, 1990)	Marital satisfaction	3.70 (25%)	4.33 (59%)	3.99 (16%)	**
Marital relationships	Married women (<i>n</i> = 126) (Prins, Buunk, & Van Yperen, 1993)	Desire for extramarital sex	2.28 (34%)	1.86 (47%)	2.46 (19%)	*
Marital relationships	Cancer patients (<i>n</i> = 106) (Kuijer, Ybema, & Buunk, 1998)	Relationship improvement	3.40 (5%)	4.07 (46%)	4.01 (49%)	†
	Spouses Cancer patients (<i>n</i> = 106) (Kuijer, Ybema, & Buunk, 1998)	Relationship improvement	3.55 (20%)	4.08 (64%)	3.98 (13%)	**
Marital relationships	Remarried individuals (<i>n</i> = 290) (Buunk & Mutsaers, 1999)	Marital satisfaction	3.80 (10%)	4.48 (72%)	4.33 (18%)	**
Relationships with best friend	Students (<i>n</i> = 185) (Buunk & Prins, 1998)	Loneliness	22.21 (15%)	16.93 (74%)	21.65 (11%)	**
Relationships with superior	Employees of Psychiatric hospital (<i>n</i> = 181) (Buunk <i>et al.</i> , 1993)	Negative affect	19.12 (22%)	16.89 (58%)	17.89 (20%)	*
Relationships with colleagues	Employees of Psychiatric hospital (<i>n</i> = 181) (Buunk <i>et al.</i> , 1993)	Negative affect	19.36 (15%)	17.12 (78%)	17.75 (7%)	*
Caregiver relationship	Therapists (<i>n</i> = 114) (Van Dierendonck, Schaufeli, & Buunk, 1996)	Emotional exhaustion	14.8 (84%)	8.5 (11%)	16.7 (5%)	**
Caregiver relationship	Mental retardation workers (<i>n</i> = 189) (Van Dierendonck, Schaufeli, & Buunk, 1996)	Emotional exhaustion	11.6 (79%)	11.1 (18%)	16.6 (3%)	**
Relationship with organization	Mental health staff (<i>n</i> = 189) (Van Dierendonck, Schaufeli, & Buunk, 1996)	Emotional exhaustion	12.7 (79%)	9.7 (20%)	5.5 (1%)	*

† $p < 0.10$.* $p < 0.05$.** $p < 0.01$.

& Latson, 1982; Michaels, Edwards, & Acock, 1984), the link between reciprocity and relationship satisfaction seems nevertheless rather robust in that it is independent of the length and status (dating, engaged, married) of the relationship (e.g., Davidson, 1984; Hatfield *et al.*, 1985). Moreover, this link is also found with measures assessing reciprocity in specific domains such as household chores, relationship inputs, and power, and with more elaborate measures (e.g., Buunk & VanYperen, 1989, 1991; Steil & Turetsky, 1987; VanYperen & Buunk, 1990). The consistent finding that the underbenefited are more dissatisfied than the overbenefited, has not been given much attention in equity theory. One possible explanation might be offered by reciprocal altruism theory: those who are underbenefited will always feel some uncertainty as to whether they will be "repaid" in the future, whereas those "overbenefited" may have some hope that they may not have to "repay" in the future.

A potential challenge to the importance of reciprocity constitutes the fact that in longitudinal research reciprocity indices are poor predictors of the quality of the relationship a few months or a year later (e.g., Berg & McQuinn, 1986; Lujansky & Mikula, 1983; VanYperen & Buunk, 1990). However, such findings do not necessarily indicate that a lack of reciprocity is unimportant in intimate relationships. For example, in non-reciprocal relationships, reciprocity may have been restored, as is suggested by the fact that reciprocity is not a very stable characteristic of relationships (VanYperen & Buunk, 1990). In addition, individuals may have a long-term time perspective on reciprocity restoration, thus tolerating temporary "debts". There is no theoretical reason to assume why, over a period of, say, a year, a lack of reciprocity would affect satisfaction. Nevertheless, the findings discussed here show that much is still unknown about reciprocal altruism in pair relationships, and in particular about the time perspective that individuals apply when evaluating reciprocity.

Divorce and Remarriage

Although there is no evidence that non-reciprocal relationships end sooner than reciprocal relationships, we assumed that if the degree of reciprocity is a central criterion for individuals to evaluate the state of their relationship, individuals would in particular *emphasize* that their former marriage was less reciprocal than their current one (aside from, of course perceiving themselves as more underbenefited in their previous marriage). An increasing percentage of the adult population in Western countries enters a second marriage, and remarriage after divorce has become a widespread phenomenon (Ganong & Coleman, 1994). Most remarried individuals report that their current marriage is better than their former marriage (e.g., Benson-Von der Rohe, 1987), and although it has been suggested that second marriages may be perceived as

more reciprocal than first marriages (Ganong & Coleman, 1994), as far as we know, no study has addressed this issue.

In a study among 290 remarried individuals, we assessed to what extent remarried individuals perceived their previous marriage as less reciprocal than their current marriage (Buunk & Mutsaers, 1999). Individuals were asked to answer the Hatfield Global Measure for their current marriage, and for their previous marriage *during the time it was still satisfying*. This was done because, of course, one might expect that the current marriage would always be perceived as more reciprocal than when the previous marriage had gone sour. In general, both men and women, but women more so than men, perceived much less reciprocity—especially underbenefit—in their former than in their current marriage. Men felt on average overbenefited in their current marriage, and particularly among men marital satisfaction was higher the more overbenefited they felt. In contrast, women were in their current marriage close to perceiving reciprocity, and, particularly among women, reciprocity was related to satisfaction. This is not typical for second marriages: in general, when differences are found, reciprocity seems more important for the marital satisfaction of women than for men (e.g., Buunk & VanYperen, 1989, 1991; Davidson, 1984), especially among egalitarian women (VanYperen & Buunk, 1991a). A possible evolutionary explanation for the stronger importance of reciprocity in marriage for women may be that women's reproductive interests are more at stake here than men's.

Couples Facing a Serious Disease

If, as Glantz and Pierce (1989) have suggested, the human brain tends to keep track of what we owe others and what others owe us, and that most humans cannot avoid such calculations even if they try, then reciprocity concerns would surface and would be associated with well-being, even in situations when such concerns are considered inappropriate, such as when one's spouse becomes seriously ill. There is indeed some evidence that this is the case. As noted by Thompson and Pitts (1992), a serious disease of one of the spouses influences the relationship to a considerable extent, because the investments and outcomes of both partners change. The patient can invest less in the relationship, and usually obtains more than before, whereas for the healthy partner the opposite may be the case. In a study by Thompson, Medvene, and Freedman (1995), healthy partners of cardiac patients experienced more resentment and anger as they felt more disadvantaged in the relationship with their partner. Coyne, Wortman, and Lehman (1988) pointed out that because healthy partners of cancer patients usually have to carry out more tasks than before, they may feel burdened by the patient's increased dependency, and may gradually become frustrated as they have to restrict their social life and outside activities. Moreover, while healthy partners will usually experience many anxieties

and uncertainties about the prognosis of their spouse, they may at the same time feel reluctant to share these with their spouse. Patients may feel increasingly uncomfortable in the role of the individual who needs help and is dependent upon the other. They may feel guilty and ashamed and may have the feeling of being a burden. In addition, because of mutilations caused by the illness, patients may experience a lowered self-esteem and perceived attractiveness, and may not feel worthy of the partner any longer.

In our study including 106 cancer patients and their partners and a control group of 80 couples (Kuijer, Ybema, & Buunk, 1997), we employed a slightly modified version of the Hatfield Global Measure that asked for the give-and-take in the relationship in terms of, among others, doing things for each other, listening to each other, and having attention for each other's problems. As expected, cancer patients felt on average overbenefited, and significantly more so than the control group and than their partners. Among patients as well as partners, reciprocity was related to perceived positive changes in the relationship since the beginning of the illness, although the association for patients was only marginally significant (see Table 9.1). Other data from this project showed that patients who felt overbenefited experienced more depression than patients who perceived reciprocity or underbenefit. To assess a lack of reciprocity in a more specific and straightforward manner, two seven-item scales were developed, one for *underinvestment*, assessing the perception that one does not give enough to one's partner (e.g., "I feel that I pay too little attention to my partner", and "I sometimes feel I am unworthy of my partner"), and a measure for *underbenefit*, assessing the perception that one does not get enough from one's partner (e.g., "I think my partner considers me too little", and "I cannot do any good in my partner's view"). Both patients and partners felt more depressed as they experienced more underinvestment. Moreover, partners felt more depressed and burned out the more underbenefit they perceived, i.e. the more they felt they were getting too little in return from their partner.

Extradyadic Sex

Reciprocity also plays a role in marital relationships when it concerns extradyadic sex. Males, more so than females, could in ancestral times enhance their reproductive success by a single sexual act. Thus, from an evolutionary perspective, men would have evolved a stronger tendency than women to be open to casual extradyadic sex, more or less independent of the state of their marital relationship. In contrast, women would more likely have evolved a tendency to engage in extradyadic sex when their marital relationship was no longer satisfying and reciprocal, looking for a new partner who could offer more support and protection. Thus, although there are other evolutionary reasons for women's desire for extradyadic sex, such as getting enhanced

genetic quality in their offspring (Buss, 1994), among women, extramarital desires should be more sensitive to the state of their current primary relationship than among men. It has indeed been found that, particularly among women, marital dissatisfaction is related to extramarital sexual desires and behaviours (for review, see Buunk & van Driel, 1989), but the impact of a lack of reciprocity in marriage upon such behaviours and desires had thus far not been examined.

In a study among mostly married and some cohabiting individuals, Prins, Buunk, and Van Yperen (1993) showed that a lack of reciprocity, as assessed with the Hatfield Global Measure (as well as with a measure based upon separately assessed outcomes of oneself and the partner), was related to the desire to engage in extramarital sex ("How often did you want to have sex with another (wo)man, during your marriage or cohabitation?") and with the number of extramarital sexual relationships. Moreover, these effects held up while controlling for relationship satisfaction, sexual satisfaction, and norms towards extramarital sex. Women who felt overbenefited or underbenefited were relatively strongly inclined to engage in sexual relationships outside their marriage (see Table 9.1). In contrast, among men, a lack of reciprocity was unrelated to extramarital desires and behaviours and, as predicted on the basis of evolutionary theory, this desire was in general higher among men than among women.

Reciprocity seems also in a more direct way an important consideration concerning involvement in extradyadic sex, in that individuals seem to be less upset in respond to infidelity of their spouse when they have been unfaithful themselves (Buunk, 1995). The threat of the acquired immune deficiency syndrome (AIDS) has added a new dimension to the impact of extradyadic sexual relationships upon the primary relationship, making unsafe extradyadic sex of the other partner also a potential threat to one's life. In a recent study among 251 Dutch adults, many of whom had been involved in extradyadic sex, we found that those who had a strong intention to use condoms with a new sexual partner focused in particular upon the unsafe sex aspect of the partner's behaviour, and not so much on the unfaithfulness *per se*, by demanding condom use within the relationship, requiring that the partner would take an HIV-antibody test, and by demanding that the partner would in the future refrain from unprotected extradyadic sex (Buunk & Bakker, 1997). Thus, these findings suggest that the response to the partner's unprotected extradyadic sex is strongly affected by reciprocity considerations, i.e., by what one feels one would or would not do in a similar situation.

Lesbian Relationships

Additional evidence for the pervasiveness of reciprocity concerns comes from a study on lesbian relationships. The potential importance of reciprocity in

these relationships was already indirectly apparent from writers on lesbian relationships, who emphasized the importance of egalitarianism and equality in the sharing of power (e.g., Reilly & Lynch, 1990), and from studies showing that shared decision-making among lesbian couples is related to a higher relationship satisfaction (Kurdek & Schmitt, 1986; Peplau *et al.*, 1983). Nevertheless, as far as we know, our study among 119 lesbian couples (Schreurs & Buunk, 1996), was the first to examine directly to what extent reciprocity is an important, independent predictor of satisfaction. Reciprocity among both partners was assessed with the Hatfield Global Measure. We tried to conduct a particularly stringent test of the importance of reciprocity by first entering in the regression on relationship satisfaction a number of strong predictors of satisfaction, some of which might even be considered to overlap conceptually with satisfaction, i.e., intimacy, emotional dependency, and autonomy of oneself and the partner. Even after all these variables were entered, reciprocity as perceived by the respondent as well as reciprocity as perceived by her partner were independent predictors of satisfaction. These findings are especially important because they go beyond self-report by showing that reciprocity as perceived by the partner is independently related to satisfaction with the relationship.

RECIPROCITY AND SOCIAL SUPPORT

The notion that a concern with reciprocity pervades human social interaction also has important implications for understanding the effects of social support. The general assumption in early social support research was that the availability of supportive others and the provision of actual support by others would in general contribute to health and well-being among individuals facing a threat. Several authors have since suggested that the beneficial effects of social support may occur only in relationships that are characterized by equitable patterns of resource exchange (e.g., Buunk & Hoorens, 1992; Rook, 1987). For instance, Antonucci and Jackson (1990) found that individuals with disabilities attempted to maintain reciprocal supportive relationships, and found some evidence that the perception of reciprocity was related to well-being. A study on support provided and received by persons with spinal cord injury (Rintala, Young, Hart, & Fuhrer, 1994), showed that a lack of reciprocity was characteristic of those with more serious handicaps, less integration and less self-sufficiency, probably because those with lower levels of handicap were better able to develop and maintain reciprocal relationships. Within our own research program, we have examined the role of reciprocity in giving and receiving support, not only, as we discussed above, in marital relationships of

cancer patients, but also in relationships with colleagues and superiors at work, and in best friendships.

Colleagues and Superiors at Work

Nearly a decade ago, Buunk (1990) noted a number of contradictory findings in the literature on social support and occupational stress, and suggested that this might be caused by the fact that reciprocity is a particularly important, though neglected, issue in work relationships. Not only giving more support than one receives, but also receiving more support than one is able or willing to return, may evoke quite negative feelings, such as the feeling of being unable to reciprocate, and the concern that something is expected in return that one is unwilling to provide. From an evolutionary perspective, one would expect that reciprocity concerns would particularly play a role in relationships between individuals of equal status, hence in relationships between colleagues. In relationships with superiors, i.e., those with a higher status, a certain degree of asymmetry might be expected because the provision of help and support would be important to maintain one's higher status. As noted by a number of authors, the altruistic provision of help may be an important way of building status in a group (e.g., Alexander, 1987).

In two studies—one among employees of a psychiatric hospital and one among employees of the Dutch railway company—we asked participants to fill out an adapted version of the Hatfield Global Measure assessing perceived reciprocity in the giving and receiving of social support (on a five-point scale ranging, for example, from, "My superior is providing much more help and support to me than I provide in return" to "I am providing much more help and support to my superior than I receive in return") (Buunk, Doosje, Jans, & Hopstaken, 1993). These studies showed that relationships with colleagues were more often perceived as reciprocal than relationships with superiors, and that in relationships with superiors, individuals more often felt overbenefited. In the psychiatric hospital study, lack of perceived reciprocity—being underbenefited or being overbenefited—was in general associated with negative affect. These effects were independent of the effect of perceived job stress, and some evidence was found that perceived reciprocity in relationships with colleagues and perceived reciprocity in relationships with superiors had independent effects (cf. Table 9.1). In a related vein, in a study by Peeters, Buunk, and Schaufeli (1995) among university secretaries, respondents were asked to register all social interactions that lasted 10 minutes or more during five consecutive working-days. Receiving social support was most positive in a relationship in which the recipient felt underbenefited, followed by a relationship which is perceived as reciprocal, and finally in a relationship in which the recipients feel overbenefited.

Friendships

Although friendships are considered different from relationships at work, because they are in the first place personal relationships that are entered into voluntarily and on the basis of personal feelings, in our ancestral past there was probably no distinction between personal friendships and collaborative relationships. Nevertheless, it is noteworthy that in a number of endemic cultures, among males the relationship with the best friend has a special, nearly kinlike quality, which is initiated in a ritual way, and comes with a number of well-defined and socially sanctioned rights and duties (Eisenstadt, 1956). Such relationships are characterized by a long-term reciprocity perspective, and may have helped men in ancestral times with survival and the maintenance of status in the group, and may thus have enhanced fitness beyond merely engaging in collaborative relationships with other males in the band. In present-day Western society, particularly among women, the relationship with the best same-sex friend often constitutes an important personal relationship characterized by voluntary interdependence, intimacy, common interests and trust, that is quite important for well-being (Hays, 1988). The importance of reciprocity in friendships is already recognized by children, and throughout the life span reciprocity is a central characteristic of friendships (Hartup & Stevens, 1997). For example, older adults who perceive their relationship with their best friend as reciprocal experience less distress (Roberto & Scott, 1986), and the relationships between older women and their confidants are characterized by reciprocity in the exchange of various resources (Blieszner, 1993). Although there is some evidence that a lack of reciprocity in exchanges with members of the social network is associated with loneliness (Rook, 1987; Van Tilburg, Van Sonderen, & Ormel, 1991), little is known about the association between reciprocity in the relationship with the best friend and loneliness.

In our study among undergraduate students (Buunk & Prins, 1998), we again asked participants to fill out an adapted version of the Hatfield Global Measure. In this case we asked participants to consider the relationship with their best friend from the perspective of giving and receiving with respect to, among others, doing things for each other, listening to each other, and helping each other with their problems (on a five-point scale ranging from "My best friend does *more* for me than I do for him/her" to "My best friend does *less* for me than I do for him/her"). In addition, we employed the well-validated loneliness scale developed by de Jong-Gierveld and Kamphuis (1985). The findings showed that those who perceived a lack of reciprocity in the relationship with their best friend—either in the sense of being underbenefited or in the sense of being overbenefited—were more lonely than those perceiving reciprocity. Moreover, this effect of reciprocity upon loneliness was independent of self-esteem.

RELATIONSHIPS BETWEEN PROFESSIONAL CAREGIVERS AND THEIR RECIPIENTS

The various types of relationships discussed thus far—from marital relationships to relationships with a superior—will have existed in some form in ancestral times. One might therefore argue that humans have, in the course of evolution, developed mental mechanisms to conduct such relationships. However, the human mind has not evolved to deal with professional relationships as they are typically found in the human services in present-day society (e.g. health care, teaching, and social work), and may thus apply cognitive algorithms which evolved to deal with other types of relationships. We reasoned therefore that, even though in such relationships humans are not supposed to expect reciprocity as one receives financial compensation for one's care, it would be very difficult for professionals *not* to think in terms of reciprocity in the relationship with the recipients of one's care. Such relationships are complementary by their very nature—the caregiver gives, whereas the recipient receives—which makes these relationships inherently emotionally demanding. As a result, caregivers are in danger of continuously putting much more into relationships with their recipients than they receive in return, so that over time a lack of reciprocity is likely to develop. Indeed, as can be seen from Table 9.1, on average more than half of caregivers feel underbenefited, whereas about one-quarter experience reciprocity and a small minority feel overbenefited. In all studies on burnout (emotional exhaustion) listed in this table, Hatfield's Global Measure (Walster, Walster, & Berscheid, 1978) was used, except in the teacher's study where we—following Adams (1965)—calculated the ratio between teacher's perceived investments ("How much do you put into the relationship with your students?") and outcomes ("How much do you get back in return from your students?"). Scoring categories ranged from "very little" (0 points) to "very much" (5 points).

We assumed that caregiver-client relationships that are emotionally demanding because of lack of reciprocity might eventually lead to professional burnout. This syndrome includes *emotional exhaustion* (i.e. the depletion or draining of emotional resources that may result from working with "difficult" people), *depersonalization* (i.e. psychological withdrawal characterized by negative, callous, and cynical attitudes towards recipients), and *reduced personal accomplishment* (i.e. the tendency to evaluate oneself negatively with regard to one's accomplishments at work) (for recent reviews, see Schaufeli & Buunk, 1996; Schaufeli & Enzmann, 1998). Levels of burnout are usually assessed by the Maslach Burnout Inventory (MBI: Maslach, Jackson, & Leiter, 1996), a reliable and well-validated self-report instrument. We reasoned that lack of reciprocity in caregiver-recipient relationships drains the professionals' emo-

tional resources and eventually leads to emotional exhaustion (Buunk & Schaufeli, 1993). The resulting emotional exhaustion is typically dealt with by decreasing one's investments in the relationships with recipients, i.e., by responding to recipients in a depersonalized (i.e., derogating, negative, callous, and cynical) way instead of expressing genuine empathic concern. However, this way of coping is dysfunctional, since it worsens the helping relationship, increases failures and thus fosters a sense of diminished personal accomplishment.

As shown in Table 9.2, perceived lack of reciprocity in the caregiver-recipient relationship was positively associated with all three dimensions of burnout in various samples of professionals, also when reciprocity was assessed with multi-item rating scales with internal consistencies ranging from 0.64 to 0.85 (median Cronbach's α , 0.75). These scales included items such as: "How often do you feel you invest more in the relationships with recipients than you receive in return?"; "I spend much time and consideration with my recipients but they give me little appreciation back in return". Median correlations across studies between lack of reciprocity and emotional exhaustion, depersonalization, and reduced personal accomplishment are 0.26 (range, 0.06–0.51), 0.21

Table 9.2 Perceived lack of reciprocity with recipients and burnout (Pearson's r)

Sample	Emotional exhaustion	Depersonalization	Reduced personal accomplishment	Study
Intensive care unit nurses ($n = 2090$) ^a	0.18	0.11	0.05	Schaufeli & Le Blanc (1997)
Psychiatric nurses ($n = 142$) ^b	0.40	0.25	0.28	Van Gorp, Schaufeli, & Hopstaken (1993)
General practitioners ($n = 567$) ^b	0.47	0.33	0.22	Van Dierendonck, Schaufeli, & Sixma (1994)
Correctional officers ($n = 79$) ^b	0.51	0.45	0.51	Schaufeli, van den Eynden, & Brouwers (1994)
Maternity nurses ($n = 114$) ^b	0.50	–	0.31	Van Yperen (1998)
Hospice nurses ($n = 170$) ^b	0.18	0.13	0.27	Van Yperen (1996)
Mental retardation staff ($n = 149$) ^{a,c}	0.06	0.05	0.09	Van Dierendonck, Schaufeli, & Buunk (1998)
Teachers ($n = 249$) ^a	0.26	0.15	0.24	Van Horn, Schaufeli, & Enzmann (1999)
Average	0.32	0.21	0.25	

^aEquity formula of Adams (1965). ^bMulti-item questionnaire. ^cMean value across three waves.

(range, 0.09–0.45), and 0.21 (range, 0.05–0.51), respectively. Furthermore, two studies that controlled for other common job stressors such as work overload and role conflict (Schaufeli, Van den Eynden, & Bronwers, 1994), uncertainty and lack of control (Schaufeli & Janczur, 1994) made an independent contribution in explaining variance in *all three* burnout dimensions. The latter study found a similar pattern among Polish and Dutch nurses, thus illustrating the cross-national validity of the findings. However, two recent studies among teachers yielded mixed results, perhaps because they used different operationalization of reciprocity. Peeters, Geurts and Van Horn (1998), who employed a three-item scale, found that lack of reciprocity with pupils was significantly related to each burnout dimension after controlling for demographic (age, gender) and work-related factors (school type, teaching experience, and number of hours employed). On the other hand, Van Horn, Schaufeli, and Enzmann (1999), who used Adams's (1965) equity formula, did not confirm this positive result, although high investment in students was positively related to emotional exhaustion, and poor outcomes were related to all three burnout dimensions. Multi-item questionnaires usually showed higher correlations with burnout compared to measures based on Adams's (1965) equity formula.

The relationship between lack of reciprocity and burnout becomes somewhat more complicated when not only feeling underbenefited but also feeling overbenefited is taken into account. One would expect a curvilinear relationship between burnout and lack of reciprocity with the strongest negative effect for feeling underbenefited, a somewhat less strong but still negative effect for feeling overbenefited, and a positive effect when the relationship with recipients is balanced. We tested this assumption in two independent samples, of therapists working in a forensic psychiatric setting and mental retardation workers, and indeed found (see also Table 9.1) a significant multivariate quadratic effect, indicating that those who experienced a balanced relationship exhibited the lowest burnout levels compared to both other groups (van Dierendonck, Schaufeli, & Buunk, 1996). However, contrary to expectations, those who felt *overbenefited* reported more emotional exhaustion (both samples), more depersonalization (mental retardation workers), and more reduced personal accomplishment (mental retardation workers). A possible explanation for this result is that among care-givers, an underbenefited relationship with recipients is expected from the outset—it is the default, so to speak. Therefore, lack of reciprocity might evoke less distress—it was expected, after all. As Austin and Walster (1974) suggested: "Expectancy ameliorates distress, even when a person clearly realizes that the expected event is inequitable" (p. 208). Moreover, an overbenefited relationship runs counter to the professional's attitude—which is directed at giving, not at receiving—in such a strong and fundamental way that it might become stressful in itself.

Finally, some indications have been found for the role that lack of reciprocity plays across time. In a cross-sectional study among general practitioners (van Dierendonck, Schaufeli, & Sixma, 1994) we tested a LISREL model that assumed that harassment by patients would lead to lack of reciprocity, which in turn would provoke emotional exhaustion, followed by the development of negative attitudes (i.e. depersonalization and lack of personal accomplishment). Most importantly, we reasoned that these negative attitudes would worsen the doctor-patient relationship and foster harassment by patients. In other words, we predicted a circular process: harassment → lack of reciprocity → emotional exhaustion → negative attitudes → harassment. It appeared that the data fitted quite well to the model, indicating that: (a) a lack of reciprocity mediates the relationship between harassment by patients and burnout; (b) negative attitudes towards patients worsen the helping relationship. Since this was initially a cross-sectional study, we conducted a follow-up after 5 years and found, indeed, that negative attitudes towards patients increase the likelihood of feeling harassed by them 5 years later, which, as we noted before, fosters a lack of reciprocity and eventually leads to burnout (Bakker, Schaufeli, Sixma, Bosveld, & van Dierendonck, in press). Thus, a lack of reciprocity in the caregiver-recipient relationship seems to play an important role across time in the development of burnout in the human services.

RELATIONSHIP BETWEEN EMPLOYEES AND THE ORGANIZATION

Because humans evolved as a species living in groups, it seems quite plausible that human individuals not only have cognitive mechanisms to evaluate reciprocity in dyadic relationships, but also to assess whether they are treated fairly by the group they belong to. As has long been noted (e.g., Adams, 1965), employees agree to make specific contributions to an organization (e.g. with their skills, their experience, their time and effort) and they expect the organization to provide benefits in return (e.g. payment, promotion prospects, job security, and a supportive climate). In what has been referred to as the *psychological contract* (Rousseau, 1995) with the organization, employees have certain reciprocity expectations about concrete or explicit issues (e.g. payment and workload), as well as about less tangible or implicit matters (e.g. esteem and dignity). When this psychological contract is violated, absenteeism may serve the purpose of restoring reciprocity, as employees reduce their investments and at the same time increase their rewards (i.e., they have an extra day off). Moreover, burnout may occur as a dysfunctional psychological withdrawal reaction in response to unmet expectations about the organizational environment (Schaufeli & Enzmann, 1998).

Our research programme has provided evidence for the hypothesis that a lack of reciprocity in the relationship with the organization may lead to absenteeism. In a number of studies employing a prospective design, we first assessed perceived lack of reciprocity with the organization with a multi-item scale of reciprocity (e.g., "I work too hard, considering what I get in return"; "For the efforts I put into the organization, I get much in return"—reverse scored). In the following 12 months we assessed, on the basis of organizational records, the frequency of relatively short absences up to a maximum of 14 calendar days. In The Netherlands, such brief spells are not medically certified, and therefore represent to a large extent voluntary absences, that is, absences in which the employee has some choice of freedom in deciding whether or not to stay away from work (Chadwick-Jones, Nicholson, & Brown, 1982). Correlations between experienced lack of reciprocity and future absenteeism in various samples including bus drivers (Geurts, Schaufeli, & Buunk, 1993), blue collar workers (Geurts, Buunk, & Schaufeli, 1994a, b), and community mental health workers (Geurts, Schaufeli, & Rutte, 1998) ranged between 0.13 and 0.32 (median: 0.23).

Furthermore, we found that a lack of reciprocity may directly or indirectly influence the frequency of absenteeism. Using LISREL modelling we found among blue collar workers that lack of reciprocity with the organization had a direct effect upon absenteeism that was not mediated by resentment (Geurts, Buunk, & Schaufeli, 1994a; Geurts, Schaufeli, & Rutte, 1998), suggesting that absenteeism is primarily a way to restore reciprocity, rather than to alleviate negative feelings. In other studies, however, indirect effects have been established (Geurts, Buunk, & Schaufeli, 1994b; Geurts, Schaufeli, & Rutte, 1998; Geurts, Schaufeli, & Buunk, 1993). The nature of the effect of reciprocity seems in part to depend on the type of profession. For instance, in mental health workers a *direct* effect of lack of reciprocity on absenteeism was observed, whereas in bus drivers this relationship was *mediated* by conflicts with superiors (Geurts, Schaufeli, & Rutte, 1998). Bus drivers seemed to first use a so-called "voice" strategy by speaking up to their superiors when they felt underbenefited, thus provoking conflicts, which in turn produced absenteeism as a "protest" against superiors. Speaking up may be likely to occur in mental health care settings, since superiors are usually also direct and close colleagues with little formal authority.

A lack of reciprocity at the organizational level is also positively related to burnout: median correlations for emotional exhaustion, depersonalization, and reduced personal accomplishment are as follows: 0.32 (range: 0.12–0.54), 0.13 (range: 0.07–0.31), and 0.12 (range: 0.02–0.30). Generally speaking, correlations are somewhat lower compared to Table 9.2, especially for depersonalization and reduced personal accomplishment. This is not very surprising, since these two burnout dimensions are closely related to working with recipients, that is, to the interpersonal domain. In contrast, emotional exhaustion

seems a rather general negative emotional response that is also sensitive to lack of reciprocity at the organizational level. Nevertheless, a LISREL model that was tested successfully in two samples of student nurses confirmed that, in addition to a lack of reciprocity at the interpersonal level, a lack of reciprocity at the organizational level is somewhat less strongly, but independently and significantly, related to burnout, i.e. the latent variable consisting of all three dimensions (Schaufeli, van Dierendonck, & van Gorp, 1996). A somewhat similar LISREL model—which included the same composite, latent burnout variable—was tested among mental health professionals and suggests that lack of reciprocity at the organizational level is independently related to burnout and to the intention to leave the organization (Geurts, Schaufeli, & de Jonge, in press). Finally, we examined the effect of an intervention program among mental retardation workers that was aimed at the cognitive restoration of perceived reciprocity at the organizational level (van Dierendonck, Schaufeli, & Buunk, 1998). The perception of reciprocity with the organization appeared to increase continuously in the intervention group 6 and 12 months after the intervention had started, whereas it remained stable in two control groups—one from the same organization and one from another similar organization. In addition, emotional exhaustion and absence duration decreased sharply after 6 months in the intervention group, whereas both control groups reported an increase or levelling off in emotional exhaustion as well as in absenteeism.

INDIVIDUAL DIFFERENCES IN THE IMPORTANCE OF RECIPROCITY

Although a global perception of reciprocity is related to a wide variety of outcome measures in many different types of relationships, there is some evidence that such a perception is not important for all individuals to a similar degree. In the first place, in a number of studies we have found that the association between reciprocity and well-being is dependent upon *exchange orientation*, an attitude characterized by the seeking of direct reciprocity from one's partner in services, privileges, and demonstrations of affection (Murstein, Cerreto, & MacDonald, 1977). Employing a modified version of Murstein's exchange orientation scale, Buunk and Van Yperen (1991) found that only among individuals high in such an orientation was the perception of reciprocity related to marital satisfaction, whereas for individuals low in exchange orientation, it did not seem to matter how their own input–outcome ratio compared to that of their spouse. A similar moderating effect of exchange orientation, this time measured with a scale developed by Clark (personal communication, 1989), was found in a study among railway employees: particularly for those railway employees high in exchange orientation, lack of

reciprocity in the relationship with the supervisor was related to negative affect (Buunk *et al.*, 1993). In a similar vein, using scales developed by Sprecher (1992), Buunk and Prins (1998) found that the association between reciprocity and loneliness was especially pronounced among those high in overbenefiting exchange orientation (a sensitivity to being overbenefited), but not among those high in underbenefiting exchange orientation (a sensitivity to being underbenefited). Maybe responding negatively to being overbenefited was more adaptive in ancestral times, given the risk of revenge and punishment, making individual differences in overbenefiting exchange orientation more discriminating among individuals.

In addition, some evidence has been found for a moderating role of *communal orientation*, an individual difference characteristic referring to the desire to give and receive benefits in response to the needs of, and out of concern for, others (Clark, Ouellette, Powell, & Milberg, 1987). In a study among American and Dutch college students, Van Yperen and Buunk (1991b) found that only among individuals low in communal orientation was a lack of reciprocity related to relationship satisfaction. In the study among railway employees, particularly for those low in communal orientation, reciprocity in the relationship with the supervisor was related to negative affect, while for those high in communal orientation the *level* of support, and not reciprocity in giving and receiving support, was important (Buunk *et al.*, 1993). Moreover, in a study among nurses, only those low in communal orientation were higher in burnout when they perceived an imbalance in their relationships with patients (Van Yperen, Buunk, & Schaufeli, 1992), a finding that was recently replicated by Van Yperen (1996).

Despite the evidence for moderating effects of communal and exchange orientation, it must be noted that these effects do not seem very robust. First, in a number of studies, no moderating effects of either communal or exchange orientation could be established. Second, for no apparent reason, there is variation across studies in *which* individual difference variable moderates. The Buunk *et al.* (1993) study among railway company employees was the only one thus far in which both communal and exchange orientation had a moderating effect, but, for example, in the Van Yperen, Buunk, & Schaufeli (1992) study, in which communal orientation had a moderating effect, exchange orientation did not, and in the Buunk and Prins (1998) study, in which overbenefiting exchange orientation, according to Sprecher (1992), had a moderating effect, both the communal and exchange orientation scales developed by Clark did not. It may be that there is an underlying dimension reflecting individual differences in sensitivity to perceived reciprocity that is sometimes “tapped” by one, sometimes by another measure. Nevertheless, although it is often assumed that exchange and communal orientation are opposite constructs, across the various studies we conducted, we have found that they are *not* consistently negatively correlated. The correlation varies from -0.01 to -0.42 .

Why, from an evolutionary point of view, would individuals differ in their orientation towards exchange in relationships? First, there will be random variation in any human trait that is important for survival; in fact, the existence of individual differences constitutes the basis for natural selection (e.g., Barasch, 1997; Buss, 1993). A communal orientation may, as suggested by Batson (1993), be primarily a strategy oriented towards reciprocity in the long run, that is, the typical strategy of reciprocal altruism. The communal orientation scale includes not only items referring to sensitivity to the needs of others, but also items referring to the expectation that others will respond to one's needs (Batson, 1993). Second, individual differences may reflect what in neo-Darwinism are referred to as *frequency-dependent strategies* (e.g., Cronin, 1991). That is, some strategies are only, or particularly, successful when a certain percentage of the population adopts a different strategy. For example, being a "cheater" is very successful in a population consisting mainly of "suckers", but very unsuccessful in a population consisting mainly of "cheaters" (Dawkins, 1976). In a similar vein, it might be that an exchange orientation is an evolutionarily successful strategy when, for example, most other individuals exhibit exploitative, aggressive strategies, thus making it necessary to want something in return immediately when providing a benefit, and to return something immediately when receiving a benefit. A third, and similar, explanation is the assumption that reciprocal altruism is only adaptive when individuals have long-term associations, and that an exchange orientation is the evolutionary residue of a strategy that is particularly adaptive under conditions where relationships between individuals are not stable, and when one does not know if, or when, one will encounter another individual again (e.g., Hawkes, 1992).

CONCLUSIONS

We have shown that in a wide variety of interpersonal relationships, varying from marital relationships to relationships between professional caregivers and their clients, and from friendships to relationships with the organization, a global sense of reciprocity seems to be related to mental health and well-being. This association is independent of other factors, such as reward level, self-esteem, perceived job stressors, length of the relationship, and type of relationship. Moreover, this phenomenon seems to occur even in those contexts where cultural norms would seem to foster a mitigation of reciprocity concerns, such as the situation in which one spouse develops a serious disease. In addition, lack of reciprocity is related to a wide variety of indices of mental health, including depression, marital dissatisfaction, burnout, and loneliness, and to divergent "exit" behaviours, including extradyadic sex, divorce, and absenteeism. It must be noted that a potential limitation of many of the studies

we discussed is that only a one-item measure was used. However, when multi-item measures were employed, the results were in general even stronger, and indeed, in general, one-item measures would provide an underestimation rather than an overestimation of the association between reciprocity and well-being. Although these findings are in line with the theory of reciprocal altruism, so far evolutionary theory has rarely been employed to develop and test hypotheses on the role of reciprocity in interpersonal relationships. Particularly the cognitive mechanisms involved in building and maintaining balanced exchanges would constitute an important avenue for future research. Twenty years ago, Alexander (1979) pointed out that "... it is already obvious to anyone familiar with exchange theory in the social sciences that its findings have begun to converge dramatically with the predictions that derive from an evolutionary view of social exchange." (pp. 207-8). However, most social psychologists and other social and behavioural scientists writing on reciprocity and social exchange have neglected the evolutionary background of the value humans attach to fair and reciprocal relationships. Even more so, in line with Deutsch (1975 p. 149) it has often been assumed that, given "... the nature of Western society, whose characteristics predispose it to have an economic orientation . . . , it has been natural for social psychologists to focus on equity as the central principle of distributive justice". The evolutionary perspective suggests that the emphasis on equity in justice research is not just an incidental product of our society, but reflects the fact that equity represents a central element in human social life. We hope that the present chapter may contribute to a better insight into the evolutionary background of reciprocity, and may stimulate new research directly testing hypotheses derived from an evolutionary perspective among humans. In this way, social psychology may become a more integrated part of the currently rapidly evolving evolutionary psychology. That seems imperative for a discipline that studies precisely those aspects of behaviour that probably have been, more than anything else, the major force and result of the evolution of the human species.

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