In the field of psychiatry there is a debate about so-called “culture-bound syndromes” (see Simons & Hughes, 1985; Endicott & Welsch, 2001). These phenomena appear to be rather bizarre if seen from a Western perspective. The syndromes include, for example, koro, a panic disorder affecting males in the Far-East: Victims are terrified of a sudden death, for which a seemingly shrinking penis is taken as an omen. Another example is pa-leng, a marked fear of the consequences of cold and wind, which are believed to cause exhaustion, impotence, and death. Asian people, who are victims of this culture-bound syndrome, wear excessively warm and thick clothes to evade such dire consequences.

A third example is the malgrí syndrome of the Lardil peoples who inhabit Mornington Island (in the North of Australia). The Lardil make a clear distinction between things having to do with the sea and things having to do with the land. They exhibit intense anxiety about being assaulted by spirits called malgrí, who will attack if a person enters the sea with something on their bodies associated with land, for example, meat left-overs from a meal (Cawte, 1974; cited after Laughlin & Throop, 1999). Rather bizarre, isn’t it?
Sometimes, however, bizarre examples help to illustrate more general points. Let us imagine an old and wealthy Lardil on a sightseeing trip in California, accompanied by his young nephew, a somewhat sinister character, who nevertheless is designated the old Lardil’s heir. Suddenly the old Lardil died while bathing at Santa Monica beach. Inspector Columbo did not believe in a natural death and, of course, suspected the nephew to be the murderer. But: the old Lardil did not die because of poison or a gunshot wound, but obviously because of a heart attack after an extensive meal. The only clue to a criminal involvement of the suspect found by Inspector Columbo was the testimony of some witnesses who saw that, shortly before the sudden death, the nephew had shouted something at his uncle, which, however, could not be completely understood due to the loud sea. Inspector Columbo – after consulting two psychologists – visits the nephew a last time to tell him that the district attorney will close the file. While leaving, he pauses. “One final question, please. What did you shout to your uncle while he was bathing in the sea?” The nephew responds, lulled by Columbo’s apparent naivety into a false sense of security: “It wasn’t tuna! It was rabbit!”

What did the psychologists tell Columbo? And why did Columbo have to consult two of these species? One of them, who was somewhat familiar with culture-bound syndromes, explained to Columbo the intimate relationship between personal beliefs and emotions. If someone really and truly believes that malgris exist and that they are very vicious enemies and that they will attack if you enter the sea with something on your body associated with land then he will suffer from a panic attack if he recognizes that he has something on his body associated with land while bathing in the sea. You can always do the crosscheck, says the psychologist. If he didn’t panic after recognizing this fact, it must be the case that he didn’t really and truly believe in one of the propositions of the enumeration given above. It’s the same for you: If you really and truly believe that you are an excellent police inspector and it is important for you to be an excellent police inspector and you believe that excellent police inspectors never overlook blatant evidence then you will be deeply emotionally irritated if you have to recognize that exactly this has happened. Interesting!, says Columbo and murmurs to himself: But isn’t that playing with words? and goes to a second psychologist.

After being introduced to the case, the second psychologist, who is somewhat more concerned about the basic psycho-physiological mechanisms of emotions, says: “No idea about the tuna sentence. But if you ask me about an organism’s response to a threatening stimulus, I can tell you something about the physiological stress syndrome. Of course, heart attack as a consequence of stress is a rare event. However, a new study – Sheps et al., 2002 – found that mental stress-induced ischemia is associated with an increase in mortality rate in patients with coronary artery disease.”

Psychology is basically tied to two different perspectives, a point that has been emphasized by Brandstätter in several articles (e.g., 1982, 1984, 1998). The first one might be called the personal one: Psychologists try to reconstruct the system of personal beliefs and values to understand intentional behaviors. They adopt an “intentional stance” (Dennett, 1987) towards our objects of interest. Moreover, even
emotional responses are tied to this calculus (see Brandstätter, 1993; see also Epstein, 1973). The psychology of personal beliefs and values is indispensable for scientific psychology because we cannot adequately describe what is going on if we do not refer to personal beliefs and values.

However, there would be several concerns if one tries to restrict scientific psychology solely to a psychology of beliefs and values. First, describing a certain behavior as intentional action implies the attribution of specific personal beliefs and values (see Greve, 2001). Thus, we do not have a causal but a conceptual relationship between beliefs, values, emotions, and actions. Brandstätter (1982, 1984, 1998) has lucidly explained these relationship as a priorisms in psychology, which, if not taken as such, lead to pseudo-empirical research (see also Smedslund, 1988). Dennett (1987) compares the intentional stance with a calculus, especially with the calculus of forces in the parallelogram of forces.

Second, the psychology of personal beliefs is not self-contained. We do not learn from this type of psychology which forces change personal belief and value systems. Of course, insofar as our cognitive apparatus mimics logical calculus, the power of a convincing argument is describable within a personal belief psychology. Processes of persuasion, however, are already outside this logic. The increase or decrease of values cannot be understood within a psycho-logic: We are not able to cancel a wish of ours intentionally just because we realize that it cannot be fulfilled (see, e.g., Brandstätter, 2000). What is needed here is a sub-personal perspective on psychology, that is, a psychology that heavily relies on models of mental representations and processes of encoding and retrieving that operate on those mental representations.

Today’s cognitive psychology with its elaborate theories on perception, attention, memory, thinking, and reasoning is a model case for this endeavor. Eventually, this sub-personal psychology will be the bridge between personal beliefs psychology and its material realization in the brain and body.

With regard to measurement, the personal perspective on psychology is intimately tied to interviews and questionnaires. In some sense, this is the most obvious and most face-valid way of obtaining insight into the inner world of a person (see Greve, 1996). What can be more direct to learn something about someone than to ask him or her? And we can add: What can be more indirect and less valid than to measure differences in, e.g., reaction times in response to some briefly flashed stimuli to get to know something about someone?

However, if we relate personal beliefs, evaluations, and values to a sub-personal level, it is easy to predict differences on behavioral measures like response times or error rates, given the cognitive-psychological theories of perception, attention, and memory. And we can add: From this perspective, what can be more indirect and less valid than to ask someone and interpret his or her answers? It is a long way to go from encoding a spoken or read sentence to the motor-responses of uttering a sentence.

At this point in time, we need studies that try to relate the personal and the sub-personal perspective for selected psychological phenomena. In fact, this endeavor is
flourishing in today’s psychology, dominantly associated with the label *social cognition* (for introductions see Bless, Fiedler, & Strack, 2003; Kunda, 1999).

BRIDGING PERSONAL AND SUB-PERSONAL PSYCHOLOGY

In the following, I want to exemplify how to relate the personal and the sub-personal perspective on psychology. The “bridge” is given by paradigms that are adapted from cognitive psychology. I will frame the following part of the manuscript in the form of answering four questions that are concerned with the automatisms of processing self-relevant information.

**Question Number 1:**

*Will positive self-related traits be immunized against threatening evidence?*

Our somewhat strange example of the old Ladril should have made clear that self-related propositions – even if they appear very idiosyncratic in a given context – might have a serious impact on life. Obviously, the example is fabricated. For answering our first question, I would like to turn to a more realistic situation. Take students for example; one can often observe that the emotional responses of two students who receive the same grade – let us assume grade B – are very different. Whereas one student is obviously satisfied with this feedback, the other is deeply disappointed. There might be several patterns of explanation in terms of personal psychology that are correct for a given case, for example, Grade A was needed as a precondition for applying at some college. However, I want to emphasize one potential explanation that heavily relies on Epstein’s (1973) description of the self-concept as a theory that individuals hold about themselves. The self-concept can be defined as a set of meaningfully interrelated propositions and evaluations that are related to the self (see also Linville & Carlston, 1994). The student who is deeply disappointed about receiving the B might have a self-concept that comprises the propositions “I am a good student,” “It is important for me to be a good student,” and “Good students will always get grade A.”

What will happen to him after receiving grade B? Of course, I already mentioned the deep disappointment, which is an inevitable consequence if one holds these propositions. But what will happen then as a consequence (assuming his physical condition is better than that of the old Ladril)?

The nexus of self-related propositions must change, but in which way? Taking the metaphor of a web literally, it can be assumed that according to the laws of statics the

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1 To keep the argument concise, I do not want to discuss the case of self-serving attributions (e.g., “the examiner was unfair”) that in the end discredit *this* exam as a case of testing the set of self-related propositions.
weakest link will break. It is no easy task to predict the “weakest link” in an individual self-concept because epistemic and motivational forces have to be taken into account. For example, will our student no longer hold the proposition that he is a “good student?” If so, a severe problem follows, which is no longer an epistemic one: He will suffer from the discrepancy between what is (“I’m not a good student”) and what should be (“It is important for me to be a good student”). Therefore, presumably, the “good student” proposition is typically not the first to be changed.

But what about “Good students will always get grade A?” Will our student hold on to this proposition in light of getting the B? We might speculate that the personal definitions of abstract traits are a rather malleable mental representation. In fact, we might hypothesize that in the long run the mental representation of abstract self-related traits adapt to individual strengths and weaknesses such that the strengths have at least more weight in defining a given trait compared to the weaknesses.

Greve (1990) as well as Brandstädter and Greve (1994) have termed this process self-immunization, thereby referring to a concept in the philosophy of science (Popper, 1934/1968; Lakatos, 1970): Immunizing a theory means to change non-central propositions of a theory (e.g., the link between a latent variable and its corresponding operations of measurement) to save central propositions (e.g., the relationship between two latent variables; see also Greve, this volume).

Evidence for an immunized self-concept has been revealed found in a series of questionnaire studies (Greve, 1990; Greve & Wentura, 2003), by using an idio- graphic approach (see, e.g., Pelham, 1993). For several traits (e.g., to be intelligent, to be helpful), lists of concrete skills that are potentially diagnostic for a given trait were compiled (e.g., “to comprehend complex problems easily” [intelligence]; “to donate money to charitable organizations” [helpfulness]). First, participants were asked to rate the diagnosticity of each skill for the respective trait by stating their level of agreement with propositions such as “Someone who is intelligent can comprehend complex problems easily.” Second, participants rated their current ability with respect to each skill (“How good are you with respect to the following skills?” e.g., “Being able to comprehend complex problems easily”). For a variety of traits and samples, the average within-participants correlation between diagnosticity and ability ratings was positive, indicating an immunized self-concept. Additionally, self-immunization was significantly higher for those traits that belonged to a self-schema of a given participant (see Markus, 1977; Bargh, 1982), that is, they were higher for traits that were more central for the participants.

These studies were based on self-report scales. However, as argued above, we have to go a step further by relating the personal psychology story of self-concept immunization to the sub-personal one. This should be evident if one submits the following counter argument against the self-report based studies on self-immunization: If participants are asked to rate the diagnosticity of (potentially) trait-related skills, they might adopt a stance of deducing the diagnosticity in a top down fashion: “Well, I consider myself to be intelligent, but I’m not particularly good at mental

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2 I owe this metaphor to Jochen Brandstädter (personal communication).
arithmetic. Thus, mental arithmetic cannot be highly diagnostic!” (see Brown, Dutton, & Cook, 2001, for related arguments and results). Therefore, it is important to use assessment techniques that are directly linked to the fact that self-immunization refers to the mental representation of self-related beliefs. In several studies, Werner Greve and I have tackled this problem (see Wentura & Greve, 1996, in press, 2004).

In accordance with several authors in the field (e.g., Bower & Gilligan, 1979; Markus, 1977; for an overview and empirical studies related to this hypothesis see Klein & Loftus, 1993), we assumed that (at least central) self-ascribed traits are represented in abstract form in memory. That is, if someone is asked whether he is an intelligent person, he will directly retrieve an answer (in contrast to on-line computation based on a retrieval of relevant behavioral episodes; see Klein & Loftus, 1993). This can be nicely illustrated by the frequently used metaphor of a propositional network with a “self node” in its center (Bower & Gilligan, 1979; Greenwald et al., 2002; Kihlstrom & Cantor, 1984; Linville & Carlston, 1994). The self node is related to abstract trait knowledge, for example, ‘to be intelligent,’ ‘to be honest’ etc. Insofar as those trait terms are not meaningless for the person, they must be somehow defined by observable skills. ‘To be intelligent’, for example, might be defined by ‘being good in math’ and/or by ‘being good in foreign languages.’ Of course, individuals have some knowledge of their own math and foreign languages skills as well. Then, self-immunization theory predicts that for a person with good math performance but a weakness with regard to foreign languages, the math skill is more strongly related to intelligence than the language skill.

A technique to examine mental representations is the paradigm of semantic priming (for a review see Neely, 1991). It is known that short exposure to a prime stimulus will render those mental representations more accessible that are semantically related to the prime. For example, if participants are asked to make fast but accurate decisions whether letter strings presented one by one on a computer screen are words (e.g., ‘robin’) or non-words (e.g., ‘robon’), their decision concerning ‘robin’ will be facilitated by a short exposure of a related prime (e.g., ‘bird’ compared to, e.g., ‘fruit’).

In one study (Wentura & Greve, in press), we used a version with complete sentences as primes (e.g., ‘Lisa is good at mental arithmetics’) to capture the gist of propositions expressing abilities with regard to observable skills. Following the rapidly presented sentence, trait words were used as targets in a lexical decision task. Potentially related targets (e.g., intelligent) were expected to be facilitated if there is a strong link between the skill and the trait in the individual self-concept (for other studies using sentences as primes see, e.g., Conway & Bekerian, 1987; Sharkey & Mitchell, 1985; see also below the section on question 2).

Three months before the laboratory task, participants filled out a questionnaire for assessing beliefs in their own strengths and weaknesses with regard to skills that are potentially related to the traits intelligence, helpfulness, education, and attractiveness. Additionally, participants rated the centrality of these traits for their self-concept.

During the priming task no explicit reference to the self-concept of participants was made (i.e., the sentences referred to fictitious persons). The self-concept is not an
isolated structure within semantic memory. That is, it is implausible to assume that there is a definition A for, e.g., intelligence, that is part of the self-concept and that adapts to personal strengths and weaknesses and a definition B that will be applied to other persons. If so, the potential contradiction between definitions A and B within the belief system would strongly undermine the power of immunization processes. Insofar as a trait definition adapts to personal strengths and weaknesses, this definition should hold in any context, especially in the context of perceiving others (see, e.g., Markus, Smith, & Moreland, 1985, for related arguments with regard to the role of self-schemata in the perception of others).

![FIGURE 11.1 Semantic Priming Effects as a Function of Skill Ability and Trait Centrality.](image_url)

The pattern of results is depicted in Figure 11.1. Positive bars represent the relative facilitation in responding to a given trait after being primed by a (potentially) related sentence (for details of the calculations see Wentura & Greve, in press). As can be easily seen, if a trait was central for the self-concept (as measured three months before the priming study), a significant priming effect was found for those skills that participants believed themselves to be good at, but not for those skills that participants believed themselves to be poor at. For low centrality traits, however, we found a reversed result (i.e., a significant priming effect for those skills that participants believed themselves to be poor at, but not for those skills that participants believed
themselves to be good at). The 2 (centrality) x 2 (ability) interaction was significant as well. The pattern corresponds to our hypothesis that processes of self-immunization protect a self-serving definition of central traits. Interestingly, the pattern does not hold for participants with low values (i.e., first quartile) in self-esteem.

Of course, looking at the results for the non-central traits opens up the possibility for somewhat diverging interpretations. One is that self-immunization is a process that operates within the boundaries of ordinary language and folk psychology. That is, not any link between a trait and a skill can be sacrificed for stabilizing a given self-assignment of a trait. Comparable to a situation in which we have to admit that we can no longer attain a valuable goal, we sometimes have to admit that a trait is no longer self-descriptive. A student who was always best in mathematics at his local school but had severe problems during the math courses at the university might serve as an example. Accommodative processes that result in a decrease of centrality will be the ultimate response of our cognitive-affective apparatus to such situations (Brandstädter, 1989, 2001; see also Brandstädter, 1998; Brandstädter & Greve, 1994; Brandstädter & Renner, 1990, Brandstädter & Rothermund, 2002; Brandstädter, Wentura, & Rothermund, 1999).

However, there is a different interpretation. It might be that participants have had from the beginning a rather rigid and inflexible mental representation of a given trait. If, given this representation, the self-ascription of the trait is supported by one’s own strengths, it will have become central for the participant; if it is not supported it will not be central for the participant. Since the study of Wentura and Greve (in press) depicts only a “snapshot” of the self-concept, the question arises whether self-immunization can be observed in experimental studies.

In fact, we were able to show that self-immunization is a response to failure feedback (Greve & Wentura, 2003, Study 2). In a contest of general knowledge, participants competed with an alleged second participant, who, however, was a confederate. The confederate was instructed to be very good in two domains of general knowledge (e.g., politics, fine arts), but poor in two other domains (e.g., history and natural sciences). Given this frame of reference, participants were made to believe that they are poor at some domains of general knowledge, but good at others. Following the quiz task, participants worked through a questionnaire that comprised questions related to each of the knowledge domains, with one directly querying the diagnosticity of the domain for the trait of eruditeness (i.e., “Someone with good general knowledge knows a lot in the domain of _____?”). As expected, failure-related knowledge domains were rated as less diagnostic for the trait of having good general knowledge than success-related domains.

In further experiments, we corroborated this result by using semantic priming tasks as introduced above. Wentura and Greve (2004) again used the cover story of a quiz task. The hypothesis was that confronting (student) participants with gaps in their general knowledge will result in a pattern of self-immunization that defines the trait to be educated in terms of those pieces of knowledge that the participant has successfully demonstrated. However, it is unlikely that a question whose answer appears to be known by everyone will fulfill this function. Everything else being equal,
responding correctly to a question that appeared more difficult would count as better evidence for *being educated*. Therefore, we combined the quasi-experimental factor success (i.e., whether participants responded to general knowledge questions either correctly or incorrectly) with an experimental factor of difficulty. That is, a given question was presented with either a difficult or an easy multiple choice set of answers. In a subsequent priming task, prime sentences described those pieces of knowledge (e.g., *Dostoyevsky wrote 'Crime and Punishment'*) that were asked before in the quiz task. The relevant target was the word *educated*. Priming effects were then calculated for a Success x Difficulty design. We expected the most pronounced priming effects for difficult, but solved tasks. Figure 11.2 depicts the priming effects for conditions of interest.

![Figure 11.2 Semantic Priming Effects as a Function of Difficulty of Quiz Task and Response of Participant.](image)

In fact, we found a significant priming effect only for those pieces of knowledge that referred to difficult, but solved quiz tasks. (The interaction effect was significant as well). This result was replicated in a further experiment that additionally secured the

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3 Additionally, the use of easy tasks ensured that the participants had the impression of an overall good performance. Thus, participants were not faced with an overall negative feedback regarding their education, which would have made self-immunization unlikely.
result against some alternative interpretations (see Wentura & Greve, 2004, for details). That is, participants related being educated only to those propositions that represent – subjectively – noteworthy knowledge.

In conclusion, the priming paradigm proved to be a useful tool for studying the mental representation of the self in a rather unobtrusive way. I will continue with a section that broadens the applicability of this technique to a related, but somewhat different question.

**Question Number 2:**
If negatively connoted traits become self-related – will they become more positive?

During the life-span, it might happen that negatively connoted traits become self-related. For example, the fatal triad of no sports, too many calories, and perhaps age-related changes in the biochemistry of the body increases pads of fat for a countless number of people. What will happen? Of course, with reference to the foregoing section, we can assume that the personal definition of overweight increases by some points on the body-mass-index scale. For many individuals, however, it will be rather inevitable to acknowledge their own overweightness. How will fatness affect their self view?

One remarkable example of a negative trait that rather inevitably becomes self-related during the life course is the trait of being old. It is known that there exists a negative age stereotype and prejudice against the elderly (e.g., Kite & Johnson, 1988; Wentura & Rothermund, in press; see also Rothermund, this volume). Of course, there is a kernel of truth to this stereotype insofar as aging is associated with more losses than gains (e.g., Heckhausen, Dixon, & Baltes, 1989). The essential point is that contrary to most other stereotypes which refer to fixed assignments of groups (e.g., ethnic or gender stereotypes), we all cross the border to old age. Thus, a negative aging stereotype acquired in younger years will then be a burden. The representation of aging and old people that is negatively connotated becomes more or less part of the self concept during the life course (Brandstädter & Greve, 1994).

However, even a young person who dwells heavily on the negative aspects of being old will acknowledge that there are positive elements associated with being old: composure, experience, and, perhaps, wisdom. Thus, the prevalence of negative age stereotypes might be more a matter of accessibility than availability.

Given this background, Wentura and Brandstädter (2003; see also Wentura, Dräger, & Brandstädter 1997; Rothermund, Wentura, & Brandstädter, 1995) used a sentence-priming procedure to assess the accessibility of age stereotypes in younger (mean age = 23.5 years; N = 35) and older women (mean age = 68.3 years; N = 39). Sentences such as “Martha K. (74) was sitting on a park bench” were presented on the computer screen. Following the sentence, the target stimulus – either a word or a non-word – was presented on the center of the screen. As in the self-immunization experiments reported earlier, participants were instructed to press as quickly as pos-
sible – without neglecting accuracy – a “Yes (it is a word)” or a “No (it is not a word)” key.

Three within-subjects variables were manipulated. First, the subject of the sentence was either an old person (e.g., “Martha K. (74) was sitting on a park bench.”) or a young person (e.g., “Nina K. (25) ...”). Second, the target word following the prime sentence was either semantically related to the “old” sentence (with regard to age stereotypes; for example, *lonely*) or not (*embarrassing*). Third, the valence of the materials was manipulated: The sentence-word pairs related either to a positive or negative aspect of being old. Priming effects were calculated separately for positive and negative materials as the difference in median response time to the related word following the young person’s sentence minus median response time to the related word following the old person’s sentence. Since this difference might be biased by a differential processing of sentences referring to old or young persons, we subtracted the corresponding difference for the unrelated target word from the first one. The main result is presented in Figure 11.3

Not unexpectedly, the negative stereotype was prevalent in both old and young women. (The overall negatively signed priming effect was significant with no moderation by age of participant. The effect for younger women just missed the conven-
tional criterion of significance; however, this effect was corroborated in a further experiment; see Wentura & Brandstätter, 2003, for details). Older women did not deny the negative aspects of becoming older. A significant positive stereotype, however, was found only for older women. (The moderation by age of participant was significant as well.)

Additionally, the use of unrelated positive and negative target words allows for a further test. It is known from affective priming research (Fazio, Sanbonmatsu, Powell, & Kardes, 1986; Wentura, 2000) that evaluatively connoted prime stimuli might facilitate responding to congruent targets. Testing the hypothesis that for older women a sentence with an older subject is more positively connoted than a sentence with a younger subject and will therefore decrease response times to (semantically unrelated) positive target words and increase those to negative target words, yielded a significant effect for older women of 49 ms that was missing for younger participants.

Taken together, the results are compatible with the hypothesis of an accommodative shift in the concept of aging in older age. Given this backdrop, the older women seem to protect their self by means of two processes. First, the negative stereotype is countered by a positive one: Older participants show priming effects not only for the negative but also for the positive materials. Second, there is evidence that the information about older people are connoted with a general positive “halo” by their peers: Following an “old” sentence, a marked discrepancy was observed in the responses to positive and negative target words that were not semantically related to the prime sentences. This affective priming effect is in line with other research on ingroup-outgroup differences (see below section on Question 4).

We might see this accommodation of the age stereotype as a process which serves the maintenance of life-satisfaction and well-being, as well as maintaining self-esteem. In recent years the question of whether self-esteem is also assessable on a sub-personal level has gained increasing importance in research on the self-concept. Therefore, my third question is concerned with this endeavor.

Question Number 3:
Is self-esteem assessable on a sub-personal level?

Self-esteem is a highly prominent and important concept in the psychology of the self (see Baumeister, 1998, Leary & MacDonald, 2003, for reviews). At first sight, the assessment of self-esteem is intimately tied to questionnaire scales. Recently, however, several researchers have introduced new methods to indirectly assess self-esteem (e.g., Bosson, Swann, & Pennebaker, 2000; Greenwald & Farnham, 2000; De Houwer, 2003; Farnham, Greenwald, & Banaji, 1999; Hetts, Sakuma, & Pelham, 1999; Karpinski, 2004; Spalding & Hardin, 1999) with, however, mixed results.

Most attractive seems to be a version of the affective priming paradigm. In the original paradigm (Fazio et al., 1986), participants have to classify clearly positive or negative target words, which are presented trial by trial on a computer screen accord-
ing to their valence. Shortly before each target, a prime word is presented. In cases of affective congruence (i.e., prime and target sharing the same valence), response times (and/or number of errors) are expected to be lower than in cases of affective incongruence (i.e., prime and target are of different valence; for overviews see Fazio, 2001; Klauer, 1998; Klauer & Musch, 2003; Wentura & Rothermund, 2003). What makes this technique a highly attractive candidate paradigm for the indirect assessment of attitudes is the fact that the effect can even be observed if the prime stimulus is presented very briefly (e.g., 43 ms) and is embedded into masks that render the stimulus unavailable to conscious perception (i.e., letter strings of consonants or rows of @; Draine & Greenwald, 1998).

In a masked affective priming experiment, Wentura, Kuljan, and Greve (in press) used participants’ initials as primes. There were two hypotheses associated with this study. First, following research on the name-letter effect (Nuttin, 1985; see also Koole, & Pelham, 2003; Pelham, Mirenberg, & Jones, 2002), for the average participant, their own initials should have a positive valence. Thus, priming with personal initials should facilitate responses to positive targets and inhibit responses to negative targets compared to an adequate control. Second, this effect should be dependent on interindividual differences in self-esteem.

Each experimental session was run with two participants such that priming with personal initials can be compared to priming with the yoked partner’s initials. Additionally, we used the response window technique introduced by Draine and Greenwald (1998). In a nutshell, with this procedure participants are forced to give categorization responses to target stimuli within a time span that is too short to achieve high levels of accuracy. Thus, priming processes show up predominantly in the error rates: Error rates are lower in affectively congruent than in affectively incongruent conditions. Draine and Greenwald (1998) found larger effect sizes with this technique compared to standard procedures. This technique was successfully used for the implicit measurement of self-related attitudes (Otten & Wentura, 1999; see below) and consumer attitudes (Frings & Wentura, 2003).

The main result is depicted in Figure 11.4. Each bar represents an affective priming effect: Mean error rates for congruent prime-target pairings – i.e., personal initials followed by positive targets and, as a control, the yoked participant’s initials followed by negative targets – are subtracted from mean error rates for incongruent prime-target pairings – i.e., personal initials followed by negative targets and, as a control, the yoked participant’s initials followed by positive targets. First, I will focus on the two right bars (the difference between other- and possessor-relevant targets will be explained soon).

On the right side of Figure 11.4, a result can be seen that was expected on the basis of the interindividual differences hypotheses: Participants with high explicit self-esteem show a positivity effect of personal initials whereas participants with low explicit self-esteem show a negativity effect. (The latter effect is significant; the former one just missed the conventional criterion of significance; the difference is clearly significant. Additionally, it shows up in a significant correlation of the priming difference with the continuous measure of explicit self-esteem).
On the left side of Figure 11.4, however, a result can be seen that was expected on the basis of the hypothesis that the average participant has a positive self esteem: Given that the two bars do not significantly differ, they represent a positivity effect for personal initials. So, what is behind the distinction of other- vs. possessor-relevance?

Target words in our experiment were clearly positive and negative adjectives. However, Wentura, Rothermund, and Bak (2000) have shown that automatic evaluation might be dependent on a second factor, which is orthogonal to valence. That is, the trait adjectives can be subtyped according to the kind of positivity or negativity, which can be termed possessor- vs. other-relevance (Peeters, 1983; Peeters & Czapisinski, 1990). The evaluation of a given trait depends on the perspective of the evaluators – whether they evaluate the trait from the perspective of someone who has to interact with the trait-holder or from the perspective of the trait-holder him/herself.

For example, being brutal is primarily bad for the social environment of the brutal person, but not necessarily for the one who is brutal. On the contrary, being depressive is primarily bad for those who are depressive, but not necessarily for their social environment. The same applies to positive adjectives: To be honest is primarily good...
for those who interact with the honest person but not necessarily for the honest person himself (the honesty might be abused), whereas intelligence is primarily good for intelligent persons themselves but not necessarily for the social environment (she or he might be a “bad guy”). Adjectives like brutal or honest are called other-relevant, whereas words like depressive or intelligent are called possessor-relevant. In a series of experiments (Wentura & Degner, 2004), it was shown that masked affective priming effects are affected by the match of type of valence.

From a self-esteem perspective, it seems evident that interindividual differences in explicit self-esteem are more closely linked to possessor-relevant valence than to other-relevant traits. Whereas the evaluation of the self for high self-esteem participants is rather unambiguously positive in the light of this distinction, the valence of self for low self-esteem participants is clearly ambiguous: On the other-relevant valence dimension, even persons with low self-esteem will see themselves as positive, because they are no threat to others and they do no harm to others. But on the possessor-relevant valence dimension, persons with low self-esteem have a negative self, because they see themselves as unsuccessful and worthless. Thus, it can be hypothesized that especially priming effects with initials as primes and possessor-relevant adjectives as targets will be linked to explicit self-esteem.

**Question Number 4:**
**Does positive self-esteem spread to newly acquired self-related traits?**

Sometimes you learn something new about yourself during the life-course (hopefully you do!). And sometimes this new information is not blatantly positive or negative. What will happen to this new piece of information in terms of evaluation? Does the positive self-esteem (of the average person) spread over to this newly acquired trait?

The reader might ask whether this situation is a rather rare one, turning the question into an academic one. However, many studies have been done on this topic without framing it this way. Rabbie and Horwitz (1969) and Tajfel, Billig, Bundy, and Flament (1971) were the first to establish a social psychological phenomenon that has inspired many studies since then: the minimal group paradigm with its associated ingroup favoritism effect (see also Brewer, 1979; Brown, 2000; Messick & Mackie, 1989). Splitting a sample with regard to some arbitrary feature (e.g., whether one’s birthday is odd or even) spontaneously yielded a more positive rating of one’s own “group.” Social psychologists have wondered whether this might be the nucleus of social discrimination.

Maybe the answer is somewhat simpler. It might be that the newly acquired “group” label is regarded as a new feature of the self. Will positive self-regard spontaneously spread to this newly acquired trait? To test this hypothesis, we (Otten & Wentura, 1999) told our participants that they would perform a task assessing perceptual style in perceiving and structuring pictorial information. The task was said to identify differences in perception and information processing. Typically, two categories could be distinguished: One group, labeled “figure group,” was said to com-
prise people who firstly focus on salient features of a stimulus. The other group, labeled “ground group,” was said to comprise people who firstly focus on global impressions. Thus, this task categorized people on a dimension that (a) had no prior meaning to them and (b) had no expectations or content attached to it prior to the group assignment. Perceptual style was said to be measured by a test comprising eight ambiguous pictures (mostly taken from Escher, 1992). Each picture was shown on the computer monitor and was followed by the presentation of two alternative interpretations. Participants indicated which of the two alternative images they saw first. After the eight judgments were given, a feedback about the participant’s category membership appeared on the screen. Of course, in fact participants were randomly assigned to either the “figure” or “ground” group.

FIGURE 11.5 Masked Affective Priming Effects (Positive Values Denote Implicit Positivity of the Word Ground Relative to the Word Figure) as a Function of Minimal Group Assignment.

Directly following this “test,” participants worked through a masked affective priming task comparable to the one described in the section above. The words figure and ground were used as primes. Figure 11.5 shows the result. Depicted is the positivity of the word ground relative to the word figure for the two samples. As can be seen, whereas the ground sample had a significant positive value of the masked affective priming effect, the figure sample had a negative mean (thereby denoting relative positivity of the word “figure”); the difference is significant.
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This experiment shows that participants spontaneously connoted the newly acquired “trait” as a positive one. In a further study using more traditional questionnaire measures it was additionally shown that it is the transfer of positive self-regard that seems to be the cause for this process (Otten & Wentura, 2001).

FINAL REMARKS

The experiments and results that I have reported in this chapter are illustrations of the endeavor to build bridges between the personal and the sub-personal perspective on psychology. Personal psychology identifies the network of individual beliefs in order to understand the meaning of individual actions and emotions. To overcome its limitation of being more a description than an explanation, one has to relate its terms to the sub-personal level of mental representations and processes. It is the hope that paradigms of cognitive psychology such as those presented here will be of benefit in this endeavor.

REFERENCES


