



Components of Emotional Meaning: A sourcebook

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CHAPTER

11 Emotion is for doing: The Action tendency component

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Abstract

We explain the operationalization of the Action tendency component based on Frijda's action readiness theory. The action tendencies of approach, avoidance, being-with, attending, rejection, indifference, antagonism, interruption, dominance, submission, apathy, excitement, exuberance, passivity, inhibition, and helplessness were represented in the GRID instrument. Structural analyses on these action tendencies revealed a three-factor structure with a strong first factor representing DEFENSIVE VS APPETITIVE action tendencies, and two subsidiary factors representing DISENGAGEMENT VS INTERVENTION and SUBMIT VS ATTACK action tendencies. The first action tendency factor was strongly related to the overall VALENCE factor. The two subsidiary factors were both associated with the overall POWER factor. It was possible to correctly classify 46.1% of the emotion terms in the 34 samples on the basis of the three action tendency factors. The analyses confirm that action tendencies form a constitutive part of the meaning of emotion terms.

Keywords: [Action tendencies](#), [defensive action tendencies](#), [appetitive action tendencies](#)

Subject: [Developmental Psychology](#), [Social Psychology](#)

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The function of emotions is to prepare the organism for adaptive behavior in specific situations. Emotions are thus for doing. The functional approach to emotions has been especially elaborated in evolutionary perspectives on emotions (e.g., Plutchik, 2003). Evolutionarily, the preparation of behavioral reactions, in situations that are regularly experienced by the organism, increases its survival chances. The behavioral preparation system has been shaped gradually to be responsive to a more diverse set of situations that have survival value (e.g., Nesse, 2004). Across living organisms, the preparation of either appetitive (approach) or defensive (withdrawal) reactions can be observed (Frijda, 2010; Maxwell & Davidson, 2007; Schneirla, 1959). At a very rudimentary level, this is already present in single cell organisms that move toward or move away from an object depending on the situation. It is hypothesized that in higher organisms, this very rudimentary behavioral preparation has been gradually differentiated into more specific and complex behavioral preparation patterns, such as aggression, fleeing, apathy, or reparative behavior. Moreover, to increase its

adaptiveness an increasing flexibility has been brought into the system. An evolution is observed from a fixed behavioral reaction to a fixed stimulus constellation in reflexes to very variable behavioral reactions based on an ongoing evaluation of the situation in the emotion process – not only in terms of what is directly observed, but also in terms of what the situation entails for the needs, goals, and values of the person.

In all three major theoretical approaches to human emotions in psychology, namely in the dimensional, the basic, and the componential emotion tradition, it is assumed that the preparation of behavior can form a part of the emotion process. These approaches differ, however, in the role they ascribe to behavioral preparation in the emotion process, as well as in the differentiation between action tendencies they propose.

The role of action tendencies is the least elaborated in the dimensional tradition (e.g., Russell, 2003). Action preparation is seen as just one of the possible consequences of changes in core affect and these changes have been conceptualized in broad behavioral tendencies. Given the central role of the valence dimension in this tradition, special emphasis has been placed on the basic differentiation between appetitive and defensive tendencies (e.g., Nesse, 2004).

p. 171 In the basic emotion tradition, each basic emotion is characterized by the preparation of a specific behavioral pattern (e.g., Izard, 1977). For instance, the four basic emotions recognized by all basic emotion theories, namely joy, fear, anger, and sadness, are hypothesized to prepare approach (moving toward), fleeing (moving away), aggression (moving against), and apathy (ceasing of behavioral tendencies), respectively.

The motivational aspect has received the most theoretical attention in componential emotion tradition, and more particularly in appraisal theories. The term “action tendencies” was coined by Magda Arnold (1960), who laid the foundations for the modern appraisal theories. In appraisal theories, an intimate relationship is postulated between the appraisal of the situation and the activation of action tendencies. It is assumed that a differentiated appraisal of the situation with respect to the needs, goals, and values of the individual is made in order to activate a differentiated adaptive response. Appraisal theorists differ with respect to their assumptions about the nature of the adaptive responses that are prepared. For instance, in 1987, Frijda proposed 18 modes of action readiness. Lazarus proposed specific action tendencies for 17 core relational themes (Lazarus, 1991a). A motivation to take revenge is, for instance, assumed in reaction to an appraisal of an offence against me or mine. Roseman (2001) proposed the elicitation of 17 emotional motivational goals (which he calls emotivational goals) such as “stop moving toward it” and “move toward other” in reaction to appraisals that can be represented on seven major appraisal dimensions. Scherer (2001, Chapter 1) proposed continuous effects of the unfolding appraisal process on the motivational component of emotion, assuming that the specific form and temporal unfolding of action tendencies depend on situational factors.

Despite the theoretical centrality of the Action tendency component in the emotion process, almost no empirical research has been done on this component from the vantage point of any of the three broad approaches to emotions. This probably has to be explained by the inherent difficulty of investigating action tendencies. Whether or not an action tendency is translated into observable behavior does not only depend on the preparation of that behavior, but also on the physical and cultural constraints of the situation as well as on the regulation mechanisms used by the person at a particular point in time. It is thus difficult to attribute observable behavior to an inner drive that is instigated by the emotion process. The behavior in question can also be accounted for by regulatory mechanisms or even general motivational processes (e.g., aggression does not necessarily point to the presence of anger, but can also be the result of an instrumental use to attain one’s goals). It is thus very difficult to empirically disentangle emotional from non-emotional accounts of observed behavior.

An exception to the rule that the preparation of behavior has only received scant empirical attention is the work of Frijda and colleagues. Frijda put action tendencies, and more generally *action readiness*, at the heart of the emotion concept in his landmark book *The Emotions* in 1986. He defines action readiness as “readiness to

engage in action for establishing, maintaining or breaking the relation with particular aspects of the environment (“action tendency”), or as readiness to engage in relational action generally (“activation mode”)” (Frijda, 1987, pp. 132). In 1986, he proposed 17 different modes of action readiness. In his very latest theorizing, Frijda postulated the existence of 18 modes of action readiness considered as “Ur-emotions” that are the basic building blocks of our emotional processes (Frijda & Parrott, 2011).

As Frijda and colleagues were some of the few to systematically conduct empirical research on the motivational component of emotion, we took Frijda’s approach as the basis for operationalizing the Action tendency component of the GRID instrument. Only the more narrowly defined action tendencies were used as a point of reference. Frijda’s action readiness concept also refers to emotion expressions and, to some extent, to bodily reactions. Frijda and colleagues have, for instance, investigated how facial expression patterns can be interpreted as modes of action readiness (Frijda & Tcherkassof, 1997). The GRID instrument, on the contrary, is based on a clear conceptual differentiation between action tendencies, expressions, and bodily reactions. From a psycholinguistic perspective, the differentiation between expressions, bodily reactions, and action tendencies is supported by the fact that they refer to different semantic primes (Goddard, 2002b; Wierzbicka, 1996). The Expression component refers to the semantic primes of “to see” and “to hear,” the Bodily reaction component refers to the semantic prime “to feel,” while the Action tendency component refers to the semantic prime “to want.” Thus, in language these three components seem to be universally encoded by different verbs.

Because of our narrower conceptualization of the Action tendency component, we based the operationalization of this component on the three empirical studies that had action tendencies as their main focus (Frijda, 1987; Frijda, Kuipers, & ter Schure, 1989; Frijda, Markam, Sato, & Wiers, 1995). In these studies, participants were asked to rate episodes from their own life in which they experienced a particular emotion on the presence of action tendencies or modes of action readiness. In a first study of Frijda in 1987, it was demonstrated that 57 different operationalizations of action readiness modes (of which most could be considered more narrowly as action tendencies) could both conceptually and empirically be well represented by 16 categories, namely approach, avoidance, being-with, attending, rejection, indifference, antagonism, interruption, dominance, submission, apathy, excitement, exuberance, passivity, inhibition, and helplessness. The two additional action readiness categories that were proposed, namely “blushing” and “rest,” are not included in the current study as they have other emotion components as their focus according to the GRID framework. “Blushing” is taken into account in the Bodily reaction component. “Rest” refers mainly to rest and relaxation, which is taken into account in the Bodily reaction component. In the subsequent studies of Frijda and colleagues (Frijda, Kuipers, & ter Schure, 1989; Frijda, Markam, Sato, & Wiers, 1995) the list of action readiness items was further elaborated (with up to 36 action readiness items), the list of emotion terms was extended (up to 32 emotion words), and the research was applied in very different cultural groups, such as in Japan and in Indonesia. Factor analyses on the action readiness items across the studies and the culturally diverse samples revealed, three recurrent factors and up to seven additional factors that either differed between the studies or between the cultural groups. The recurrent factors represented tendencies to move toward, to move away, and to move against.

For the operationalization of the Action tendency component in the GRID instrument, the 16 categories proposed by Frijda in 1987 were taken as a point of reference. The action readiness items of the three studies (Frijda, 1987; Frijda, Kuipers, & ter Schure, 1989; Frijda, Markam, Sato, & Wiers, 1995) were used as a source of inspiration for the construction of the action tendency features in the GRID instrument. For each category, at least one feature was formulated in such a way that the feature referred as close as possible to an action tendency, and was not confounded with the other components (especially the Bodily reaction and the Expression component). Moreover, as the action tendencies to move toward, to move away, and to move against were systematically recovered across studies and cultural groups, these three tendencies were operationalized more extensively. Furthermore, as it has been theorized in cross-cultural research that interpersonal aspects of emotions are more salient in non-Western cultural groups (e.g., Markus and Kitayama, 1991) compared to

Western cultural groups, explicitly interpersonal action tendencies were also well represented. The 16 action tendency categories were eventually operationalized by the following 40 action tendency features.

Approach:

- wanted to submit to the situation as it is
- wanted to get totally absorbed in the situation
- wanted the ongoing situation to last or be repeated
- wanted to go on with what he or she was doing.

p. 173 Avoidance:

- wanted to flee
- wanted to run away in whatever direction
- wanted to disappear or hide from others
- wanted to withdraw into her/himself
- wanted to be hurt as little as possible.

Being-with:

- wanted to be near or close to people or things
- wanted to be tender, sweet, and kind
- wanted to take care of another person or cause.

Attending:

- felt an urge to be attentive to what is going on.

Rejection:

- wanted to keep or push things away
- wanted to prevent or stop sensory contact
- wanted to break contact with others.

Indifference:

- lacked the motivation to pay attention to what was going on.

Antagonism:

- wanted to do damage, hit, or say something that hurt
- wanted to oppose
- wanted to destroy whatever was close
- wanted to tackle the situation
- wanted to overcome an obstacle

- wanted to take initiative her/himself.

Interruption:

- felt the urge to stop what he or she was doing
- wanted to undo what was happening.

Dominance:

- wanted to show off
- wanted to be seen, to be in the center of attention
- wanted to be in command of others
- wanted to be in control of the situation.

Submission:

- wanted to comply with someone else's wishes
- wanted to hand over the initiative to someone else
- wanted to make up for what she or he had done.

p. 174 Apathy:

- lacked the motivation to do anything.

Excitement:

- felt an urge to be active, to do something, anything
- wanted to move
- wanted to act, whatever action it might be.

Exuberance:

- wanted to sing and dance.

Passivity:

- wanted to do nothing.

Inhibition:

- felt inhibited or blocked.

Helplessness:

- wanted someone to be there to provide help or support.

11.1 Results

The internal structure of the Action tendency component

The scree plot in a factor analysis (Principal Component Analysis, see Chapter 5 for a more detailed explanation) on the action tendency features across all emotion words and all samples pointed to three factors (see Figure SM 1²). The three-factor solution, which was stable across the four language groups (see Table SM 1), accounted for 76.36% of the total variance. The stability analysis also showed the four-factorial solution to be stable across the four language groups. The fourth factor accounted for an additional 3.08% of the total variance. As the fourth factor could not be well interpreted, we decided to select the three-factor solution.

We first investigated the internal structure using VARIMAX rotation (see Table 11.1). On the first factor, aggression and opposition were contrasted with tendencies to be with and submit to others. We labeled this factor ATTACK VS AFFILIATION. The second factor was labeled WITHDRAW VS SHOW OFF as it opposed tendencies to flee, to withdraw, and to want help from others with tendencies to show off and be in the center of attention. The third factor contrasted tendencies to actively change the event with tendencies towards apathy and was therefore called APATHY VS ACTION. While the three-factorial VARIMAX rotated structure was well interpretable, the structure was not fully satisfactory. Most of the items that had a high loading on the first factor, had a substantial cross-loading on the second factor, and vice versa. Also, cross-loadings were observed with the third factor, although to a lesser extent. The three factors seem not to be well differentiated empirically.

Table 11.1 Loadings of the action tendency features in a three-factorial VARIMAX rotated structure

Action tendency features	ATTACK VS AFFILIATE	WITHDRAW VS SHOW OFF	APATHY VS ACTION
wanted to do damage, hit, or say something that hurts	-0.94	-0.03	-0.01
wanted to destroy whatever was close	-0.91	-0.14	-0.09
wanted to oppose	-0.91	-0.15	0.08
wanted to break contact with others	-0.81	-0.40	-0.28
wanted to prevent or stop sensory contact	-0.73	-0.53	-0.31
felt the urge to stop what he or she was doing	-0.71	-0.58	-0.20
wanted to keep or push things away	-0.71	-0.48	-0.27
felt inhibited or blocked	-0.66	-0.61	-0.23
wanted to run away in whatever direction	-0.64	-0.58	-0.35
wanted to go on with what he or she was doing	0.68	0.58	0.22
wanted to get totally absorbed in the situation	0.71	0.54	0.15
wanted to sing and dance	0.76	0.59	0.10
wanted to submit to the situation as it is	0.76	0.29	-0.13
wanted the ongoing situation to last or be repeated	0.76	0.58	0.14
wanted to comply to someone else's wishes	0.83	-0.08	0.12
wanted to take care of another person or cause	0.83	0.06	0.32
wanted to be near or close to people or things	0.86	0.24	0.23
wanted to be tender, sweet, and kind	0.93	0.22	0.13
wanted someone to be there to provide help or support	-0.14	-0.84	-0.11
wanted to make up for what she or he had done	0.06	-0.80	-0.15
wanted to undo what was happening	-0.61	-0.68	-0.10
wanted to withdraw into her/himself	-0.52	-0.67	-0.42
wanted to be hurt as little as possible	-0.42	-0.67	-0.18
wanted to disappear or hide from others	-0.57	-0.67	-0.40
wanted to hand over the initiative to someone else	0.16	-0.66	-0.32
wanted to flee	-0.63	-0.64	-0.33
wanted to show off	0.44	0.70	0.30
wanted to be seen, to be the center of attention	0.49	0.72	0.34
wanted to do nothing	-0.36	-0.39	-0.69

lacked the motivation to pay attention to what was going on	-0.43	-0.30	-0.62
lacked the motivation to do anything	-0.44	-0.49	-0.59
wanted to be in command of others	-0.42	0.32	0.48
felt an urge to be attentive to what was going on	0.51	0.21	0.55
wanted to move	0.20	0.38	0.56
wanted to take initiative her/himself	0.30	0.47	0.63
wanted to be in control of the situation	-0.29	0.12	0.65
felt an urge to be active, to do something, anything	0.40	0.31	0.69
wanted to act, whatever action it might be	-0.08	0.21	0.70
wanted to overcome an obstacle	0.10	-0.18	0.72
wanted to tackle the situation	0.15	0.14	0.72

We investigated the cause of this substantial overlap by inspecting the unrotated factor solution. The first unrotated factor revealed a strong contrast between appetitive and defensive action tendencies, with positive emotion terms being characterized by appetitive and negative emotion terms by defensive action tendencies. The first factor showed high loadings for rather diverse action tendencies. These shared either an appetitive (e.g., *wanting to show off* and *wanting to be tender, sweet, and kind*) or a defensive (e.g., *wanting to*

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to flee and *wanting to oppose*) nature, respectively. This first factor accounted on its own for 57.78% of the total variance, which is three-quarters of the 76.36% of variance accounted for by the full three-factorial solution.

As the first factor was very salient and theoretically well interpretable, we further explored the residual internal structure after controlling for the overall appetitive versus defensive action tendencies in three steps. In a first step, we identified those features that most generally captured the appetitive versus defensive tendencies. These were *wanted to go on with what he or she was doing*, *wanted the ongoing situation to last or be repeated*, *felt an urge to stop what he or she was doing*, and *wanted to undo what was happening*. These four features were mutually highly correlated. In a factor analysis a single factor accounted on its own for 91.56% of the total variance in these four features. In a second step, we controlled for this appetitive vs defensive action tendency factor and computed residual feature scores for the remaining 36 action tendency features. A new factor analysis was then executed on these 36 residual feature scores. The scree plot pointed to a two-factor solution that accounted for 45.23% of the total residual variance (see Figure SM 2). A VARIMAX rotation of these two residual factors revealed two well interpretable factors (see Table SM 2). On the first residual factor, apathy, withdrawal, and fleeing tendencies were opposed to features that implied taking initiative to change the situation. We labeled this factor **DISENGAGEMENT VS INTERVENTION**. On the second residual factor aggressive and opposition tendencies were contrasted with tendencies to be with others and submit oneself to others. This factor is labeled **SUBMIT VS ATTACK**. In the third step, the original three-factor solution was orthogonally Procrustes rotated toward a structure with a **DEFENSIVE VS APPETITIVE** factor, a **DISENGAGEMENT VS INTERVENTION** factor, and a **SUBMIT VS ATTACK** factor. There was a very high convergence with the target solution (see Table 11.2). The congruence measures (Tucker's phi) were 0.99, 0.93, and 0.96 for the three factors, respectively. Thus, the Action tendency component could also be represented by a general action tendency factor on which almost all action tendencies had a substantial loading and two subsidiary action tendency

factors. Because the general action tendency factor corresponded to the evolutionarily basic appetitive versus defensive action tendencies, and because there were very few cross-loadings between the two subsidiary factors, this Procrustes rotation was finally selected to represent the factorial structure of the Action tendency component.

Table 11.2 Loadings of the action tendency features in a three-factorial Procrustes rotated structure

Action tendency features	DEFENSIVE VS APPETITIVE	DISENGAGEMENT VS INTERVENTION	SUBMIT VS ATTACK
wanted to undo what was happening	−0.92	−0.08	0.01
felt the urge to stop what he or she was doing	−0.91	−0.19	0.15
wanted to flee	−0.90	−0.31	0.05
felt inhibited or blocked	−0.90	−0.21	0.09
wanted to prevent or stop sensory contact	−0.88	−0.29	0.20
wanted to disappear or hide from others	−0.88	−0.39	−0.01
wanted to run away in whatever direction	−0.86	−0.33	0.10
wanted to withdraw into her/himself	−0.85	−0.41	−0.05
wanted to break contact with others	−0.85	−0.26	0.35
wanted to keep or push things away	−0.83	−0.26	0.22
wanted to be hurt as little as possible	−0.78	−0.17	−0.13
wanted someone to be there to provide help or support	−0.72	−0.11	−0.45
wanted to submit to the situation as it is	0.72	−0.15	−0.37
wanted to be near or close to people or things	0.75	0.21	−0.49
wanted to show off	0.82	0.29	0.13
wanted to be seen, to be the center of attention	0.87	0.33	0.11
wanted to get totally absorbed in the situation	0.87	0.14	−0.17
wanted to go on with what he or she was doing	0.89	0.20	−0.12
wanted to sing and dance	0.94	0.09	−0.18
wanted the ongoing situation to last or be repeated	0.94	0.13	−0.19
wanted to do nothing	−0.54	−0.69	0.02
lacked the motivation to pay attention to what was going on	−0.52	−0.61	0.13
lacked the motivation to do anything	−0.67	−0.58	0.01
felt an urge to be attentive to what was going on	0.50	0.54	−0.26
wanted to move	0.42	0.56	0.09
wanted to take initiative her/himself	0.56	0.63	0.08
wanted to be in control of the situation	−0.09	0.66	0.29

felt an urge to be active, to do something, anything	0.50	0.68	-0.11
wanted to act, whatever action it might be	0.11	0.71	0.19
wanted to overcome an obstacle	-0.06	0.72	-0.21
wanted to tackle the situation	0.22	0.72	-0.03
wanted to comply to someone else's wishes	0.49	0.10	-0.67
wanted to take care of another person or cause	0.60	0.31	-0.59
wanted to make up for what she or he had done	-0.56	-0.15	-0.57
wanted to hand over the initiative to someone else	-0.40	-0.32	-0.55
wanted to be tender, sweet, and kind	0.78	0.11	-0.55
wanted to be in command of others	-0.04	0.49	0.52
wanted to oppose	-0.71	0.10	0.58
wanted to destroy whatever was close	-0.71	-0.07	0.59
wanted to do damage, hit, or say something that hurts	-0.65	0.01	0.68

A plot of the 24 emotion terms shows that negatively valenced emotion terms are opposed to positively valenced terms on the first factor (see Figure 11.1). On the second factor, sadness emotion terms are opposed to anger and fear terms for the negatively valenced emotion terms (see Figure 11.1). For the positively valenced terms, it is especially *interest* that scores high on this factor. The third factor opposes anger terms to *guilt* and *shame* in particular (with fear and sadness

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terms in-between) for the negatively valenced terms, and opposes *pride* to *love* for the positively valenced terms (see Figure 11.2).

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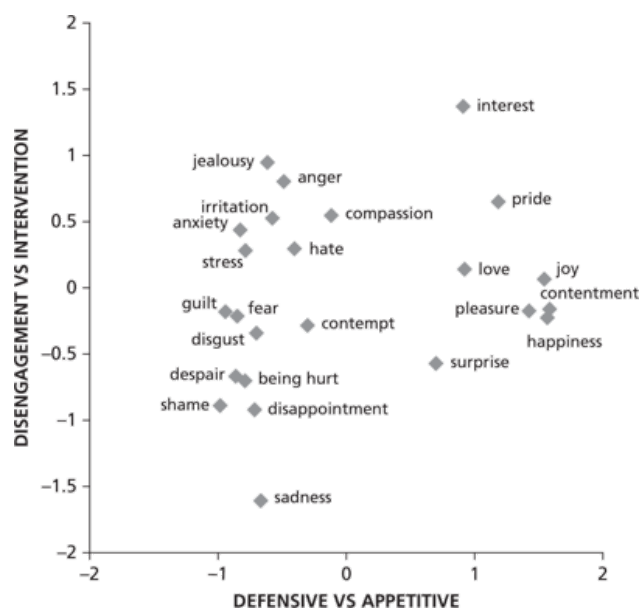


Figure 11.1 Plot of the average factor scores for the 24 emotion words on DEFENSIVE VS APPETITIVE and DISENGAGEMENT VS INTERVENTION.

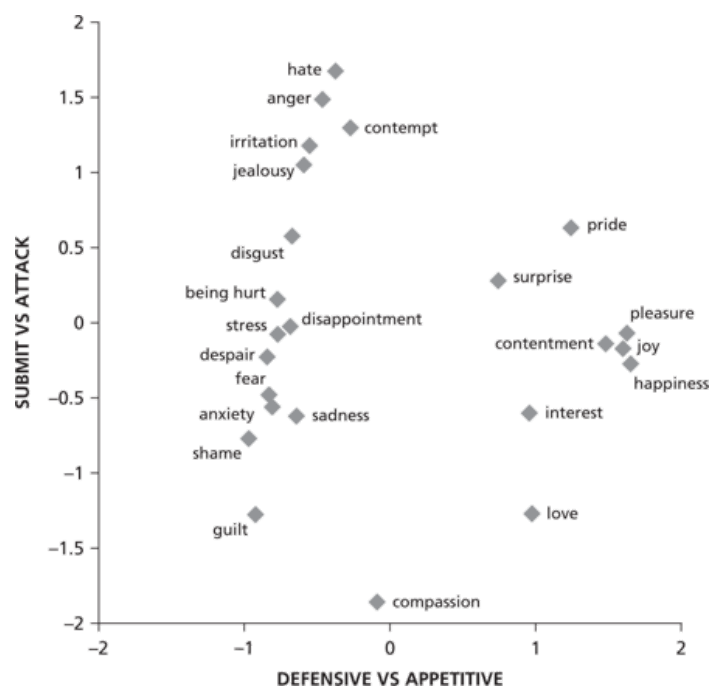


Figure 11.2 Plot of the average factor scores for the 24 emotion words on DEFENSIVE VS APPETITIVE and SUBMIT VS ATTACK.

Mapping the action tendency structure onto the overall structure

To further explore the relationships between the overall factorial structure and the internal structure of the Action tendency component, we regressed the three action tendency factors on the four overall factors (after omitting all action tendency features). Table 11.3 shows the standardized regression weights and R^2 of the action tendency factors regressed on the four overall factors. The R^2 values show that VALENCE and POWER are very well predicted, while AROUSAL and NOVELTY factors are not at all well predicted by the action tendency factors. The most important predictor of VALENCE is the DEFENSIVE VS APPETITIVE factor, but also the SUBMIT VS ATTACK factor predicted VALENCE. The more submissive action tendencies related to a higher valence. POWER was best predicted by the two subsidiary factors, but also the first DEFENSIVE VS APPETITIVE factor contributed to the prediction of POWER: more attacking action tendencies, more intervention action tendencies, and more appetitive action tendencies related to a higher score on POWER.

Table 11.3 Standardized regression weights and R^2 of the action tendency factors regressed on the four overall factors

Overall factors	β DEFENSIVE VS APPETITIVE	β DISENGAGEMENT VS INTERVENTION	β SUBMIT VS ATTACK	R^2
VALENCE	0.89***	0.07***	-0.35***	0.91
POWER	0.32***	0.51***	0.61***	0.73
AROUSAL	-0.09**	0.24***	0.09**	0.07
NOVELTY	0.13***	-0.11**	0.01	0.03

Note: * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. The action tendency features were removed from the four overall factors.

Differentiating the 24 emotion terms on the basis of the Action tendency component

The action tendencies allow for a greater than chance classification of the emotion words into one of the a priori defined 24 emotion categories (at random, a correct classification of 4.2% can be expected) (see Table 11.4). On the basis of the factor scores on the three action tendency factors, 46.1% of the cross-validated terms could be correctly classified in one of the 24 categories. This percentage rose to 67.6% when the classification was executed on the basis of the 40 action tendency features. In the latter case, confusions occurred between (1) *disappointment, despair, and being hurt*; (2) *pleasure, joy, happiness, and contentment*, (3) *stress and anxiety*, and (4) *anger, hate, and irritation*.

Table 11.4 Classification accuracy (in percent) for the 24 emotion words in discriminant analyses based on the action tendency factors and the action tendency features

Emotion words	Classification based on <i>action tendency factors</i>	Classification based on <i>action tendency features</i>	
	Accuracy	Accuracy	Confusion > 15% with
being hurt	35.3	67.6	
sadness	52.9	70.6	
shame	47.1	85.3	
guilt	76.5	91.2	
compassion	85.3	91.2	
disappointment	29.4	52.9	being hurt
love	76.5	85.3	
contentment	17.7	50.0	pleasure
happiness	35.3	26.5	pleasure, joy
pride	70.9	91.2	
pleasure	14.7	47.1	contentment
joy	20.6	29.4	happiness, pleasure
interest	85.3	91.2	
surprise	94.1	94.1	
despair	17.7	58.8	disappointment
stress	41.2	70.6	
anxiety	44.1	41.2	stress
fear	29.4	85.3	
jealousy	35.3	76.5	
hate	38.2	61.8	anger
irritation	11.8	44.1	anger
anger	41.2	52.9	hate, irritation
disgust	67.7	82.4	
contempt	38.2	76.5	
Total	46.1	67.6	

11.2 Discussion

The internal structure of the action tendency domain

The internal structure analysis revealed a first general factor on which most action tendency features loaded substantially, either in a positive or a negative direction. The opposition between negatively and positively loading action tendencies could be interpreted in terms of the evolutionarily basic distinction between appetitive and defensive action tendencies (e.g., Frijda & Parrott, 2011; Nesse, 2004). The appetitive action tendencies imply that one wants to be in the ongoing event and wants it to continue. The defensive action tendencies imply an urge to stop what is happening and a tendency to withdraw or, to whatever extent possible, change the ongoing event. These two clusters of action tendencies are the motivational consequence to the evaluation of whether the event is intrinsically pleasant and/or goal-conducive or intrinsically unpleasant and/or goal-obstructive.

While the distinction between appetitive and defensive action tendencies is conceptually straightforward, the concrete action tendencies that either have positive or negative loadings on the first dimension lead to incompatible behavior. For instance, *showing off* and *complying with somebody else's wishes* both imply that one wants the event to continue, but it is difficult to do both at the same time. This is even clearer for the defensive action tendencies. For instance, *running away in whatever direction* or *hitting and saying something that hurts* both imply a motivation to change the ongoing situation, but one cannot run away and attack at the same time. The fact that very different action tendencies that imply very diverse and ultimately incompatible behaviors emerge at the same pole of a single factor calls for an explanation. The question is whether this observation only applies to meaning of emotion words, or reveals something about the actual functioning of the motivational component during an emotion process (e.g., the presence of decision conflict).

A first alternative is a pure linguistic explanation. It could be that emotional information in language is systematically organized in terms of the valence it entails, rather than in terms of its actual occurrence in specific emotion processes. Running away and aggressive action tendencies would then share the same highly negative loading on the first dimension because they both refer to a negatively valenced emotional process, and not because they actually co-occur during actual emotion processes. Although this linguistic explanation cannot be ruled out on the basis of mere linguistic data, the fact that such a dominant general factor is not observed for the Bodily reaction and the Expression components renders this account less plausible (see Chapters 9 and 10 respectively).

The second alternative is based on the lexical sedimentation hypothesis. The overall action tendency factor is thought to reveal a genuine property of the emotion processes, namely that action tendencies that imply incompatible behavior (such as fleeing or attacking) are activated jointly when they share either an appetitive or a defensive motivation. This account would make sense from an evolutionary perspective, and fits the conflicting freeze-flight-fight reactions in prey. While freezing, fleeing, and fighting are incompatible behaviors that lead to a very different relationship between prey and predator, they are all activated in a situation where the prey perceives the predator as a threat to its physical integrity (even though they cannot be carried out simultaneously). The prey will show one of these different reactions depending on the distance to the predator (e.g., Blanchard, Blanchard, & Takahashi, 1977). It would thus be evolutionary adaptive that freezing, fleeing, and fighting action programs are prepared jointly in a threat situation so that depending on one additional specific appraisal, namely the distance to the predator, the prey can switch quickly from one action program to the other.

p. 182 While the general action tendency factor is robust, a least two additional factors can be identified that do indicate further differentiations over and above an appetitive or defensive orientation. A clear interpersonal factor is identified which differentiates tendencies to aggress and dominate others from tendencies to submit

oneself to others and to serve others. These action tendencies play a role in affirming or enforcing one's hierarchical position in the group and in maintaining affiliative relationships (e.g., Blanchard & Blanchard, 2005). The strong interpersonal nature of this dimension is confirmed by the emotion terms that are differentiated on it, namely anger terms are differentiated from *guilt* and *shame*, and *pride* is differentiated from *love*.

The third factor is a more intrapersonal motivational factor that opposes tendencies to actively deal with the situation to tendencies that leave the situation unaffected. This factor not only opposes sadness terms to anger and fear terms, but also differentiates within the anger and fear clusters. *Anger* and *jealousy* score much higher on this dimension than *contempt*. In *contempt* little can be done to change the source of contempt, while in *anger* and *jealousy* the person is motivated to take action. A comparable distinction is observed within the fear cluster: in *stress* and *anxiety* the person is instigated to undertake an action to do something about the situation that causes these emotions; however, in *fear* the person is just driven to flee the danger.

The relationships with the overall four-factorial structure

The strong prediction of the overall VALENCE factor by the DEFENSIVE VS APPETITIVE action tendency factor further fits the evolutionary view of action tendencies (e.g., Frijda & Parrott, 2011; Nesse, 2004). A basic issue for a living organism is whether the situation matches its needs and goals or whether there is a mismatch between both. When there is a match, appetitive and approach behavior is adaptive. When there is a mismatch, defensive and withdrawal behavior is adaptive. Thus, the valence dimension is as much about doing as it is about feeling and appraising.

The most remarkable finding, however, is that the two subsidiary action tendency factors both independently predict the overall POWER factor. The action tendencies thus reveal two independent pathways to achieve power, namely either by actively working toward a goal or by aggressing people that infringe on one's position and goals. Vice versa, there are also two ways to be weak and submissive: either by not doing anything or by actively putting oneself at the service of others.

In the chapter with the overall analysis of the emotion structure (see Chapter 7), a positive correlation between the VALENCE and the POWER factor was observed with an oblique rotation, indicating that more powerful emotions are perceived as more positive and vice versa. The relationships between the three action tendency factors and the overall VALENCE and POWER factors provide a more complex picture. Appetitive action tendencies contribute positively to POWER. The reverse, however, is not necessarily true. Action tendencies that imply POWER relate in very different ways to the VALENCE factor. DISENGAGEMENT VS INTERVENTION is slightly positively related to VALENCE. The SUBMIT VS ATTACK factor, however, is negatively related to VALENCE. A possible explanation is that these two power-related action tendency factors relate differentially to basic human needs. In the self-determination theory proposed by Deci and Ryan (2002), three basic human needs are distinguished: need for competence, for autonomy, and for relatedness. It can be hypothesized that an intervention orientation meets the needs for competence and autonomy, while disengagement is conflicting with it. The action tendency items that define an intervention orientation imply that the person actively takes the initiative to change the situation. To the extent that the (future) change is perceived as feasible, these action tendencies are thus compatible with the basic need for competence and autonomy. By contrast, doing nothing and possibly fleeing the situation imply a lack of competence and autonomy. On the other hand, it can be hypothesized that attacking has a conflicting relationship with the basic need for relatedness. Aggressive behavior might guarantee one's dominant position, but it hurts social bonds. Actively submitting to others has the opposite effect: it contributes to the development and, when needed, restoration of interpersonal relationships. Although the submissive action tendencies can be triggered by negatively valenced situations, they also can contribute to basic need satisfaction.

Virtually no relationships were observed between the action tendency factors and the overall AROUSAL factor. It could be that we insufficiently operationalized those aspects of the Action tendency component that relate to arousal, for instance by not operationalizing Frijda's action readiness factor of rest. Still, the 40 features used here represent the action tendency domain reasonably well. Furthermore, the operationalization of some action tendency features to imply a clear differentiation in terms of arousal. For instance *wanted to destroy whatever was close* and *wanted to run away in whatever direction* imply a high level of arousal, while *lacked the motivation to do anything* and *wanted to withdraw into her/himself* are typically associated with a low level arousal. A possible post-hoc explanation is that the action tendency factors represent general motivational orientations, rather than the preparation of specific behaviors. The general motivational orientation can then be implemented by very different behaviors that can vary substantially in terms of arousal. For instance, taking the initiative can lead to command others about what to do (requiring little arousal) as well as to frantic activity to get control over the situation (requiring a high level of arousal). Also, submission could just imply accepting the power of someone who is in a hierarchically higher position (requiring little arousal), as well as the preparation of concrete behavior to support the other (implying higher levels of arousal).

The very limited relationships between the action tendency factor and the NOVELTY factor can be accounted for by the nature of the NOVELTY factor. A situation that is novel, is a situation whose meaning is not clear. The organism does not know yet whether the situation is goal-conducive or not. Only when the meaning of the situation becomes clear, it can be decided whether and which appetitive or defensive action tendencies must be prepared. Thus, the only action tendency is the interruption of ongoing behavior in order to focus one's attention on what is happening.

The results reported in this chapter show clearly that the action tendency structure does not just mimic the overall structure of VALENCE, POWER, AROUSAL, and NOVELTY. Three different action tendency factors underlie the overall VALENCE and the POWER factors, and show very limited relationships with AROUSAL and NOVELTY.

Discrimination of terms

The very substantial discriminability of the 24 emotion terms on the basis of their action tendency profiles counterbalances the observation that the first general DEFENSIVE VS APPETITIVE factor accounts on its own for more than half of the variance. On the one hand, we observe that very different appetitive and very different defensive action tendencies are all related to positive and negative emotion terms, respectively. On the other hand, being able to correctly classify almost half of the terms on the basis of the three action tendency factors and about two-thirds of the terms with the 40 action tendency features implies that specific emotion terms can be differentiated on the basis of their profile of action tendencies.

The breadth of the Action tendency component

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The operationalization of the Action tendency component in the GRID instrument was strongly embedded in the theoretical and empirical work of Frijda (1986, 1987). However, there is an important difference between his approach and the operationalization in the GRID instrument. In the GRID, action tendencies were defined more restrictively as tendencies to execute or not execute action. Bodily reactions (e.g., relaxation) and expressions (e.g., crying) that belong to the action readiness concept proposed by Frijda were clearly differentiated in the GRID instrument. The empirical results of the GRID study show that action tendencies, expressions, and bodily reactions are structured in very different ways (see also Chapters 9 and 10). While action tendencies were characterized by a general DEFENSIVE VS APPETITIVE factor and two subsidiary factors, there was no such dominant factor in the Expression or the Bodily reaction components. Moreover, the component specific structures related very differently to the four overall factors. The expression factors related to all four overall factors (see Chapter 10), the bodily reaction factors predominantly related to the first three overall factors (VALENCE, POWER, and AROUSAL) (see Chapter 9), while the action tendency factors related predominantly to the first two overall factors (VALENCE, and POWER). The differences in structure for the three emotion components support a more restrictive approach to the Action tendency component taken in the development of the GRID instrument.

At the same time, a further elaboration of the level of abstraction at which the action tendency factor is organized is called for. In the emotion literature, the action tendency factor has been conceptualized at various levels of abstraction, going from very concrete behavior being prepared up to a change in the general motivational orientation of the person (such as in the concept of emotivations of Roseman, 2001). In the GRID, the operationalization of the action tendency features only ranged from the very concrete behavioral level (e.g., wanting to sing and dance) up to an intermediate level of abstraction (e.g., wanting to make up for what he or she had done). The observation that very different action tendencies had high loadings on the first factor and that the three action tendency factors showed almost no relationships with the AROUSAL dimension seem to indicate that the Action tendency component is encoded in language at the higher motivational level. The structure is compatible with the induction of general motivational changes that can be implemented by very different concrete behaviors depending on the concrete situation. We will use the freeze, flight, fight reaction pattern of prey to illustrate this possibility. The fact that it is adaptive to be able to quickly switch between these concrete action programs depending on the distance between prey and predator does not mean that underlying motivational orientation switches accordingly. The motivation to keep the predator away drives the three very different reactions. They just allow achieving the general goal in the light of the precise characteristics of the situation. Similarly, it does not mean that because a predator withdraws from the prey (e.g., because the prey reacted aggressively), the predator loses the overall motivational orientation to catch the prey. Thus, the same behavior can be driven by opposite motivational orientations (e.g., attacking can be observed in an attempt to keep the predator away or in an attempt to catch the prey) and very different behaviors can be driven by the same motivational orientation (as is demonstrated by the freeze, flight, fight reactions). It would be interesting for future research to jointly investigate the concrete behavioral preparations and the more general motivational orientations that are triggered in an emotion process.

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If it is correct that emotion processes not only prepare specific behavior, but have also an impact on broad motivational orientations, then straightforward relationships can be expected between the action tendency dimensions and the dimensions that represent the general motivational orientations people have in life. Conceptual correspondences can indeed be identified between the three action tendency factors and broad motivational dimensions that have been proposed in the personality and social psychological literature. The DEFENSIVE VS APPETITIVE dimension at the emotion level shows correspondences with the interindividual differences in approach-avoidance orientation (e.g., Higgins, 1997). Some people are motivationally more geared toward realizing wanted outcomes, which relates to positive affect. Others are more motivated to avoid negative outcomes. This latter tendency is positively related with negative affect. The other two action

tendency factors can be linked to the value dimensions of the Schwartz's value model, which has received substantial support across cultural groups (e.g., Fontaine, Poortinga, Delbeke, & Schwartz, 2008; Schwartz, 1992). He distinguished in his model two value dimensions, namely self-enhancement versus self-transcendence and openness to change versus conservation. The first dimension opposes values that are self-focused and imply a striving for a high hierarchical position to values that focus on the well-being of others. This dimension shows clear overlap with the SUBMIT VS ATTACK action tendency dimension, where action tendencies to take care of others are opposed to action tendencies to dominate others. The second value dimension opposes values of following one's own plans to values that imply an acceptance of the social structure. This value dimension shows conceptual correspondences with the DISENGAGEMENT VS INTERVENTION action tendency factor. In intervention one actively pursues one's own goals, in disengagement one accepts the situation as it is. Whether the overlap between the three action tendency dimensions and these broad motivational dimensions are more than coincidental will have to be empirically investigated.

11.3 Conclusions

The present chapter demonstrates for the first time a stable three-factorial action tendency structure across four very different language groups. At least in the semantics of emotion words, a general defensive versus appetitive action tendency factor emerges, as well as two subsidiary factors. One of these is more intrapersonally focused, namely preparation for disengagement versus preparation for intervention. The other is clearly interpersonally focused and opposes a tendency to submit to a tendency to attack. Emotion is indeed for doing (or, more precisely, for preparing the doing).

Notes

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- ² All supplementary materials (SM) are available at the GRID website: <http://www.affective-sciences.org/>GRID. See Appendix 1 ("Availability") for further details.