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De Theatro Motivarum, Motivation: In Search of Essentials. Research on a Theoretical Model of the Process of Motivation and on Critical Determinants of Interference

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Chapter 4

An Analysis of the Literature

4.1. Introduction

The explanatory theoretical Model of Motivation presented in Chapter 3, is reflected on through an analysis of current literature in Chapter 4.

The objective of the present Chapter follows from the Problem Statement as defined in Chapter 2.5.: the dissertation aims primarily at providing insights in the Process of Motivation. Elements from a theoretical Model capturing Motivation are to be connected to findings from literature, both in theory and obtained through empirical research. Thus, following the observations made in Chapter 1.5., a connection, or embedment is to be made between an explanatory theoretical Model and an existing body of knowledge.

4.2. Methodology

In the methodology for an analysis, a distinction will be made into theoretical constructs and the empirical research findings aimed at validation of these propositions.

As set forth in Chapter 1.5., an embedment of the Model of Motivation in current theories from literature, as provided in Chapter 4.4., is to aim primarily at observing similarities and dissimilarities between the Model and those proposed in literature. A methodology is to aim at a verification, not a validation: the analysis is to observe if the Model contains all aspects covered in theories from literature. A visualized overview is to be presented, where constituting elements from the Model of Motivation, i.e. the distinct Stages from the Model, are to be compared to constructs from the various theories in literature. As such, a rationale for a categorization of theories extends beyond the scope of the present study, nor is the analysis to elaborate on the content of the various theories. Thus, the analysis will be restricted to providing overviews of supportive or conflicting theories, or theories containing supplemental findings, by means of a visualized overview.

Likewise, an embedment of the Model of Motivation in current findings obtained from empirical research, as provided in Chapter 4.5., is to aim at observing similarities and dissimilarities in connection to the body of knowledge obtained from a mainly deductive approach. The analysis is to aim at a verification from findings produced from empirical research for constructs as proposed in the Model. An emphasis is to be placed on research following a hypothetico-deductive approach, following the rationale presented Chapter 1.5. Thus, the analysis is to provide overviews of supportive, conflicting and supplemental evidence. In structuring the analysis, an overview according to the various Phases, instead of Stages, is proposed for reasons of brevity.

A number of Assumptions are to restrict the analysis of the literature.

4.3. Assumptions for an Analysis of the Literature

Restricting the Analysis

4.3.1. Restricting the Analysis: Demarcating the Content

Defining Motivation

In Chapter 2.3.1., through a series of Fundamental Assumptions, the object of study was reduced to a Process of Motivation and a Process of Interference. The present Chapter aims at providing an embedment in literature of the Process of Motivation as captured by the Model. To this end, the initial definition used in this study is to be used as a basis for selection of theories presented in literature. In this dissertation, following Chapter 2.3.2., the Process of Motivation is defined as including all processes that are involved in intentionally oriented mental activities initiated by the Individual that are aimed at intervening in or responding to a surrounding that is perceived by the Individual to be either mental or physical, or both.

Thus, theories and empirical findings presented in literature are to be observed, that appear to consider the concept of the Process of Motivation within an equivalent connotation. To prevent bias by excluding non-supportive studies, comments are provided in relevant cases in the overview of theories.

Consequently, the analysis is to *exclude*:

- Neuro-physiological mechanisms of regulation, with the exception of arousal research (e.g.: addiction research, neuro-sensory research, sleeping-waking studies. For overviews see: Petri & Govern, 2013);
- Studies of metabolic mechanisms and endocrinology;
- Studies in psychology that are excluded in accordance to Fundamental Assumptions Chapter 2.3.1. (e.g., studies in emotion, personality, sexuality);
- Likewise, studies in sociology, or involving primarily groups or group dynamics.

4.3.2. Restricting the Analysis: The Content

In congruence with limitations set in Chapter 2.4.3.2., the content of the analysis will be aimed at coverage of the current literature covering a period of over 100 years, extending from the start of the twentieth century to the present.

4.3.3. *Conclusions*

A demarcation is made, restricting the analysis of the literature to theory and research that appear to consider the concept of the Process of Motivation within an equivalent connotation to the definition provided Chapter 2.3.2. The analysis of the literature is to be restricted according to Fundamental Assumptions presented Chapter 2.4.3.2.

4.4. The Analysis of the Literature

Theories of Motivation

An overview is presented of theories obtained from literature, providing an embedment to the Model of Motivation, as visualized in Table 4.1.

The Table depicts the various theories as they relate to the 24 Stages from the Model of Motivation. Theories are numbered with references to primary sources in literature. In addition to the 24 Stages, reference is made to person- or personality features that are not contained in the Model, as commented on in Chapter 2.3.1. and Chapter 3.2. In addition, the Table provides indications for theories with concepts referring to Determinants of the Process of Interference. These elements are included, despite falling outside the scope of the present Chapter, to enable a comprehensive assessment of all theoretical concepts contained in the various theories, and to distinguish those theories that constitute a departure from the definition of Motivation used within this study and are concerned with addressing Motivation through a Process of Interference. These theories have been analyzed in Mennes (2016, *in press*), notably in Chapters 7, 11 and 13.

As a direct consequence, theories that are aimed uniquely at a Process of Interference, rather than a Process of Motivation, are not represented in the Table¹.

Where the emphasis is on embedment in current theories, details on the various theories are limited to an annotated bibliography provided below Table 4.1. For a brief description of the various theories, reference is made to Appendix II, Section A.

A brief analysis is restricted to a short inventory of supportive theories, conflicting theories and supplemental findings.

A first analysis reveals that a vast majority of current theories are contained within the framework of the Model of Motivation, thus providing an embedment of the Model within traditional motivational theories. Although no specific sequence in the overview has been chosen, a rough historical approach was used in the display of theories. From this order, it appears theories have given prominence to different Phases of the Model over time. Roughly, Phases 1, 2 and 3 have been addressed in first theories, among these psychoanalytic and instinct theories, gradually progressing towards Phases 4 and 5 with reinforcement and drive-oriented theories, further extended with emerging arousal and cognitive theories. With achievement theories and expectancy-value theories, the approach progressed towards including Phase 6, with gradual emphasis on causality in Phase 7. With the emergence of attributional theories also Phase 8 appears to have been covered.

Furthermore, a vast majority of theories seem to address distinct aspects from the Model, where very few theories appear to cover an extensive range of the various Phases of the Model. Psychoanalytic theory, cognitive dissonance and attributional theories of

¹ Although these theories are commonly referred to as 'theories of motivation' in current literature. Further reference is made to observations in Chapter 4.6.1.1.

Freud, Festinger and Weiner, respectively, with elements of meaningfulness from Klinger, seem to provide most coverage.

Thus, a vast majority of current motivational theories appear to emerge within the Model of Motivation, providing support and embedment. In addition, each theory provides a distinct element, with only few theories covering all aspects.

Furthermore, from the analysis of theories, no theories could be found that provided a conflicting approach to the Model of Motivation.

Three theories provided supplemental ideas to the Model of Motivation. As further elaborated on in Chapter 4.5.3., field theory of Lewin (1935, 1936, 1938), dynamics of action model from Atkinson & Birch (1970), and goal systems theory initiated by Shah & Kruglanski. (2000), provided elements for a possible extension of the Model towards a multiple approach consisting of multiple Models of Motivation, in observing dynamics in the interplay of various goals and goal-preferences.

Given these observations on the extent at which coverage has occurred, in a final observation, from a slightly different perspective, it appears the Model of Motivation, also provides a comprehensive conceptual framework according to which current motivational theories could be classified.

4.4.1. Conclusions

A first analysis of current motivational theories aimed at observing similarities and dissimilarities between the Model of Motivation presented in Chapter 3 and those proposed in current literature. A vast majority of theories appeared to be covered by the Model, thus providing an indication of embedment within traditional motivational theories. Furthermore, most theories appeared to highlight distinct Phases within the Model, with only few theories displaying an extensive coverage of all suggested Phases.

From a first analysis, it appeared no theories were to be found that provided a conflicting approach to the Model.

Three theories provided additional elements to extend the Model of Motivation towards covering multiple goals in observing dynamics of interlinked goals and goal-preferences.

With a majority of theories covering distinct elements from the Model of Motivation, these first conclusions lead to the observation that associated empirical research is expected to produce an extensive range of findings on a vast range of emerging topics.

In a final observation, from a slightly different perspective, it appeared that in the attempt at coverage and embedment, the Model of Motivation provided a comprehensive conceptual framework for classification of current motivational theories.

Ref.	Theory	Principal Theorist	Person & Personality	Phase 1		2	3			
				Expectancies	Eff.	Internal Self-A.				
(1)	(2)	(3)	(4)	1 Attitude	2 Goal	3 Energy	4 Achievement & Fail. Satisf. & Frustr.	5 Effort	6 Realization	7 Actualization
1	Hedonism	Bentham								
2	Theory of Ethics	Kant								
3	Theory of Emotion	James								
4	Psychoanal. - Personality	Freud								
5	Psychoanal. - Eros & Thanatos	Freud								
6	Psychoanal. - Defense Mechanisms	Freud								
7	Instinctive Behavior	Lorenz								
8	Instinctive Behavior - Energy Model	Tinbergen								
9	Instinctive Behavior - Displacement	Ziegler								
10	Instinctive Urges	McDougall								
11	Instinctive Urges - Aggression	Lorenz								
12	Aversive Reaction - Aggression	Tinbergen								
13	Catharsis - Aggression	Feshbach et al.								
14	Responsiveness - Aggression	Berkowitz								
15	Obedience - Aggression	Milgram								
16	Displacement - Aggression	Miller								
17	De-Individuation - Aggression	Zimbardo								
18	Aggressive Inhibition & Displacement	Adorno et al.								
19	Miller's Conflict Model	Miller								
20	Frustration and Aggression	Dollard et al.								

Notes:

- (1) Numbered Reference
- (2) Theory Name used as common reference in literature
- (3) Principal Theorist associated to Theory
- (4) Classification referring to Person- or Personality related variables as commented on in Chapter 3.2.
- (5) Classification according to the various Phases within the Process of Motivation as defined according to Chapter 3.3.1.
- (6) Classification referring to Conditions as defined according to Chapter 2.3.2.

Publications associated to the referenced Motivation theories (for an overview including brief descriptions of each theory: see Appendix II, Section A., Table A.):

- 1. Hedonism (Bentham, 1779).
- 2. Theory of Ethics (Kant, 1785; Section 1, The Three Propositions Regarding Duty, The Good Will).
- 3. Theory of Emotion (James, 1890).
- 4. Psychoanalytic Theory - Personality Theory (Freud, 1900; 1915; 1923; 1933).
- 5. Psychoanalytic Theory - Eros and Thanatos (Freud, 1920; 1930).
- 6. Psychoanalytic Theory - Defense Mechanisms (Freud S., 1895, 1914, 1915a, 1915b, 1917, 1933; Freud A., 1936).
- 7. Instinctive Behavior (Buss, 2005, 2008; Lorenz, 1959; Valle, 1975).
- 8. Instinctive Behavior - Energy Model (Lorenz, 1950; Tinbergen, 1952).
- 9. Instinctive Behavior - Displacement Activity (Ziegler, 1964).

Table 4.1.

An overview of Motivation theories;
An analysis of elements or concepts within theories as captured within the various Stages of the Model of Motivation.

		4	5	Phase 6					Phase 7					Phase 8				(5)								
		Rity	Imp	External Self-A.					Anticipated Change					Dedication												
		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Conditions		Competencies		Instruments		Not covered		
		Reality	Impact	Aspiration	Contemplation	Validation	Attainment	Fulfillment	Δ - Attitude	Δ - Goal	Δ - Energy	Δ - Achievement & Fail.	Δ - Satisf. & Frustr.	Appreciation	Approbation	Affirmation	Commitment	(6)	(7)	(8)	(9)					
1																										
2																										
3																										
4																										
5																										
6																										
7																										
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16																										
17																										
18																										
19																										
20																										

Element or concept from referenced theory as presumed captured within Stages of the Model of Motivation
 Element or concept from referenced theory as presumed captured within the Model, with variations in interpretation

- (7) Classification referring to Competencies as defined according to Chapter 2.3.2.
- (8) Classification referring to Instruments as defined according to Chapter 2.3.2.
- (9) No classification within the various Phases of the Process of Motivation as defined according to Chapter 3.3.1., nor within the Determinants of the Process of Interference: Conditions, Competencies and Instruments as defined according to Chapter 2.3.2.

- 10. Instinctive Urges (McDougall, 1923, 1970).
- 11. Instinctive Urge – Aggression (Lorenz, 1966; Johnson, 1972).
- 12. Aversive Reaction – Aggression (Tinbergen, 1968).
- 13. Catharsis – Aggression (Feshbach, 1964; Feshbach & Singer, 1971; Ferguson & Rueda, 2010).
- 14. Responsiveness - Aggression (Berkowitz & Geen, 1966; Berkowitz & LePage, 1967; Berkowitz, 1970, 1974).
- 15. Obedience – Aggression (Milgram, 1963; 1964; 1965; 1974).
- 16. Displacement – Aggression (Miller, 1959).
- 17. De-Individuation – Aggression (Zimbardo, 1969).
- 18. Aggressive Inhibition & Displacement (Adorno, Frenkel-Brunswick, Levinson & Sanford, 1950; Korman, 1974).
- 19. Miller's Conflict Model (Miller, 1944; 1959).
- 20. Frustration and Aggression (Dollard, Miller, Doob, Mowrer & Sears, 1939).

Table 4.1. (Continued)
 An overview of Motivation theories;
 An analysis of elements or concepts within theories as captured within the various Stages
 of the Model of Motivation.

Ref.	Theory	Principal Theorist	Person & Personality	Phase 1		2	3				
				Expectancies	Eff.	Internal Self-A.					
(1)	(2)	(3)	(4)	1 Attitude	2 Goal	3 Energy	4 Achievmt & Fail.	5 Satisf. & Frustr.	6 Effort	7 Realization	8 Actualization
21	Amsel Theory of Frustration	Amsel et al.									
22	Brown-Farber Theory of Frustration	Brown et al.									
23	Classical Conditioning	Pavlov									
24	Operant Learning	Thorndike									
25	Reinforcement Theory	Skinner									
26	Amount of Reinforcement Effect	Bolles									
27	Quality of Reinforcement Effect	Bolles									
28	Two-factor Theory of Learning	Mowrer									
29	Drive	Woodworth									
30	Drive Theory	Hull									
31	Incentive Motivation	Spence									
32	Theory of Emotion	Mowrer									
33	Latent Learning	Tolman									
34	Central Motive State	Bindra									
35	Dual-Link Incentive Effect	Overmier et al.									
36	Intentional Behavior	Irwin									
37	Dynamics of Behavior	Woodworth									
38	Exploratory Drive Mechanism	Konorski									
39	Model of Sensoristasis	Schultz									
40	Orientation Reflexes	Sokolov									

Notes:

- (1) Numbered Reference
- (2) Theory Name used as common reference in literature
- (3) Principal Theorist associated to Theory
- (4) Classification referring to Person- or Personality related variables as commented on in Chapter 3.2.
- (5) Classification according to the various Phases within the Process of Motivation as defined according to Chapter 3.3.1.
- (6) Classification referring to Conditions as defined according to Chapter 2.3.2.
- (7) Classification referring to Competencies as defined according to Chapter 2.3.2.

Publications associated to the referenced Motivation theories (for an overview including brief descriptions of each theory: see Appendix II, Section A., Table A.):

- 21. Amsel Theory of Frustration (Amsel, 1958, 1967, 1972; Amsel & Ward, 1954, 1965; Amsel & Rousssel, 1952).
- 22. Brown-Farber Theory of Frustration (Brown & Farber, 1951; Haner & Brown, 1955).
- 23. Classical Conditioning (Pavlov, 1960).
- 24. Operant or instrumental learning (Miller, 1963; Thorndike, 1911, 1913).
- 25. Reinforcement Theory (Skinner, 1938).
- 26. Amount of Reinforcement Effect (AOR) (Bolles, 1967, 1974, 1975).
- 27. Quality of Reinforcement Effect (QOR) (Bolles, 1967, 1974, 1975).
- 28. Two-Factor Theory of Learning (Mowrer, 1947).
- 29. Drive (Woodworth, 1918).

Table 4.1. (Continued)

An overview of Motivation theories;

An analysis of elements or concepts within theories as captured within the various Stages of the Model of Motivation.

	4	5	Phase 6					Phase 7				Phase 8 (5)								
	Rlty	Imp	External Self-A.					Anticipated Change				Dedication				Conditions	Competencies	Instruments	Not covered	
	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	(6)	(7)	(8)	(9)
	Reality	Impact	Aspiration	Contemplation	Validation	Attainment	Fulfillment	Δ - Attitude	Δ - Goal	Δ - Energy	Δ - Achievement & Fail.	Δ - Satisf. & Frustr.	Appreciation	Approbation	Affirmation	Commitment				
21																				
22																				
23																				
24																				
25																				
26																				
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31																				
32																				
33																				
34																				
35																				
36																				
37																				
38																				
39																				
40																				

 Element or concept from referenced theory as presumed captured within Stages of the Model of Motivation
 Element or concept from referenced theory as presumed captured within the Model, with variations in interpretation

- (8) Classification referring to Instruments as defined according to Chapter 2.3.2.
 (9) No classification within the various Phases of the Process of Motivation as defined according to Chapter 3.3.1., nor within the Determinants of the Process of Interference: Conditions, Competencies and Instruments as defined according to Chapter 2.3.2.
 (10) Thorndike's Law of Effect contained the first notion of a concept of reward affecting response.

30. Drive Theory (Hull, 1943, 1951, 1952; Cattell, 1950, 1957, 1965, 1974. For an overview: Madsen, 1974, p. 266-267).
 31. Incentive Motivation (Hull, 1943, 1951, 1952; Spence, 1956, 1960).
 32. Theory of Emotion (Mowrer, 1960).
 33. Latent Learning (Tolman, 1932, 1959; Tolman & Honzik, 1930).
 34. Central Motive State (Bindra, 1968, 1969, 1972, 1974; Morgan, 1943).
 35. Dual-Link Incentive Effect (Overmier & Lawry, 1979).
 36. Intentional Behavior (Irwin, 1971).
 37. Dynamics of Behavior (Woodworth, 1958).
 38. Exploratory Drive Mechanism (Konorski, 1967).
 39. Model of Sensoristaxis (Schulz, 1965).
 40. Orientation Reflexes (Sokolov, 1960, 1963).

Table 4.1. (Continued)
 An overview of Motivation theories;
 An analysis of elements or concepts within theories as captured within the various Stages of the Model of Motivation.

Ref.	Theory	Principal Theorist	Person & Personality	Phase 1		2	3			
				Expectancies		Eff.	Internal Self-A.			
(1)	(2)	(3)	(4)	1 Attitude	2 Goal	3 Energy	4 Achievmt & Fail. 5 Satisf. & Frustr.	6 Effort	7 Realization	8 Actualization
41	Complex Functional System	Luria								
42	Images of Achievement	Pribram								
43	Arousal Theory	Hebb								
44	Arousal Theory - Sensory Stimulation	Dember								
45	Arousal Theory - Behavior	Berlyne								
46	Arousal Theory - Invigoration	Cofer et al.								
47	Opponent-Process Theory	Solomon								
48	Activation Theory	Duffy								
49	Affective Arousal	Young								
50	Satiation and Curiosity	Fowler								
51	Cognitive Theory of Behavior	Baldwin								
52	Field Theory	Lewin								
53	Resultant Valence Theory	Escalona								
54	Needs Theory	Murray								
55	Achievement Motive	McClelland et al.								
56	Theory of Achievement Motivation	Atkinson								
	A - Need for Achievement									
	B - Expectancy									
	C - Value									

Notes:

- (1) Numbered Reference
- (2) Theory Name used as common reference in literature
- (3) Principal Theorist associated to Theory
- (4) Classification referring to Person- or Personality related variables as commented on in Chapter 3.2.
- (5) Classification according to the various Phases within the Process of Motivation as defined according to Chapter 3.3.1.
- (6) Classification referring to Conditions as defined according to Chapter 2.3.2.
- (7) Classification referring to Competencies as defined according to Chapter 2.3.2.

Publications associated to the referenced Motivation theories (for an overview including brief descriptions of each theory: see Appendix II, Section A., Table A.):

- 41. Complex Functional System (Luria, 1966).
- 42. Images of Achievement (Pribram, 1971).
- 43. Arousal Theory (Hebb, 1955; For an overview: Carlson, 2010).
- 44. Arousal Theory – Sensory Stimulation (Dember, 1956, 1960; Dember & Earl, 1957; Eisman, 1966); For an overview: Suedfeld & Coren, 1989).
- 45. Arousal Theory – Behavior (Berlyne, 1958, 1959, 1960, 1963).
- 46. Arousal Theory – Invigoration (Cofer & Appley, 1964).
- 47. Opponent-Process Theory (Solomon, 1977, 1980; Solomon & Corbit, 1974).

Table 4.1. (Continued)

An overview of Motivation theories;

An analysis of elements or concepts within theories as captured within the various Stages of the Model of Motivation.

		4	5	Phase 6					Phase 7				Phase 8				(5)					
		Rlty	Imp	External Self-A.					Anticipated Change				Dedication									
		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Conditions		Competencies	Instruments	Not covered
		Reality	Impact	Aspiration	Contemplation	Validation	Attainment	Fulfillment	Δ - Attitude	Δ - Goal	Δ - Energy	Δ - Achievement & Fail.	Δ - Satisf. & Frustr.	Appreciation	Approbation	Affirmation	Commitment	(6)	(7)	(8)	(9)	
41																						
42																						
43																						
44																						
45																						
46																						
47																						
48																						
49																						
50																						
51																						
52																						
53																						
54																						
55																						
56																						

- Element or concept from referenced theory as presumed captured within Stages of the Model of Motivation
 Element or concept from referenced theory as presumed captured within the Model, with variations in interpretation
- (8) Classification referring to Instruments as defined according to Chapter 2.3.2.
 (9) No classification within the various Phases of the Process of Motivation as defined according to Chapter 3.3.1., nor within the Determinants of the Process of Interference: Conditions, Competencies and Instruments as defined according to Chapter 2.3.2.
 (10) Reference is made to the concept of regions, barriers and adjacencies in Lewin's Field Theory, as elaborated on in Chapter 4.5.3.1.
 (11) Classification referring to the value of success in itself and not associated to the Goal, as used within a Stage of Satisfaction and Frustration and a Stage of Actualization. Reference is made to observations made in Chapter 4.6.1.2.

48. Activation Theory (Duffy, 1962).
 49. Affective Arousal (Young, 1936, 1949, 1955, 1959, 1961).
 50. Satiation and Curiosity (Fowler, 1967).
 51. Cognitive Theory of Behavior (Baldwin, 1969).
 52. Field Theory (Lewin, 1935, 1936, 1938, 1948, 1951).
 53. Resultant Valence Theory (Escalona, 1939, 1940; Festinger, 1942; Lewin, Dembo, Festinger & Sears, 1944).
 54. Needs Theory (Murray, 1938).
 55. Achievement Motive (McClelland, Atkinson, Clark & Lowell, 1953).
 56. Theory of Achievement Motivation (Atkinson, 1957, 1964).

Table 4.1. (Continued)
 An overview of Motivation theories;
 An analysis of elements or concepts within theories as captured within the various Stages
 of the Model of Motivation.

Ref.	Theory	Principal Theorist	Person & Personality	Phase 1		2	3			
				Expectancies	Eff.	Internal Self-A.				
(1)	(2)	(3)	(4)	1 Attitude	2 Goal	3 Energy	4 Achievement & Fail. Satisf. & Frustr.	5 Effort	6 Realization	7 Actualization
57	Expectancy-Value Theories									
58	Dynamics of Action	Atkinson et al.								
59	Achievement Goal Theory									
60	Normative Goal Theory	Ames et al.								
61	Fear of Success	Horner								
62	Observational Learning	Bandura et al.								
63	Social Learning Theory	Rotter								
	Locus of Control									
64	Behavioral Specificity	Mischel								
65	Social Learning Theories									
66	Personal Causation	de Charms								
67	Causality Pleasure	Nuttin								
68	Self-Determination Theory	Deci et al.								
	Cognitive Evaluation Theory									
	Organismic Integration Theory									
	Causality Orientations Theory									
	Basic Psychological Needs Theory									
	Goal Contents Theory									
	Relationships Motivation Theory									

Notes:

- (1) Numbered Reference
- (2) Theory Name used as common reference in literature
- (3) Principal Theorist associated to Theory
- (4) Classification referring to Person- or Personality related variables as commented on in Chapter 3.2.
- (5) Classification according to the various Phases within the Process of Motivation as defined according to Chapter 3.3.1.
- (6) Classification referring to Conditions as defined according to Chapter 2.3.2.
- (7) Classification referring to Competencies as defined according to Chapter 2.3.2.
- (8) Classification referring to Instruments as defined according to Chapter 2.3.2.
- (9) No classification within the various Phases of the Process of Motivation as defined according to Chapter 3.3.1., nor within the Determinants of the Process of Inference: Conditions, Competencies and Instruments as defined according to Chapter 2.3.2.
- (10) Classification referring to the value of success in itself and not associated to the Goal, as used within a Stage of Satisfaction and Frustration and a Stage of Actualization. Reference is made to observations made in Chapter 4.6.1.2.

Publications associated to the referenced Motivation theories (for an overview including brief descriptions of each theory: see Appendix II, Section A., Table A.):

- 57. Expectancy-Value Theory (Atkinson, 1964).
- 58. Dynamics of Action (Atkinson & Birch, 1970; Birch, Atkinson & Bongort, 1974).
- 59. Achievement Goal Theory - Refer to: Normative Goal Theory
- 60. Normative Goal Theory (Ames, 1992; Ames & Ames, 1984; Dweck & Leggett, 1988; Elliott & Dweck, 1988; Nichols, 1984)
- 61. Fear of Success (Horner, 1972; Horner, 1968).

Table 4.1. (Continued)

An overview of Motivation theories;

An analysis of elements or concepts within theories as captured within the various Stages of the Model of Motivation.

Ref.	Theory	Principal Theorist	Person & Personality	Phase 1		2	3			
				Expectancies	Eff.	Internal Self-A.				
(1)	(2)	(3)	(4)	1 Attitude	2 Goal	3 Energy	4 Achievement & Fail. Satisf. & Frustr.	5 Effort	6 Realization	7 Actualization
69	Psychological Reactance Theory	Brehm								
70	Learned Helplessness Theory	Seligman								
71	Perceived Freedom	Steiner								
72	Social Cognitive Theory	Bandura								
73	Theory of Cognitive Dissonance	Festinger								
74	Self-Consistency Theory	Aronson								
75	Self-Affirmation Theory	Steel								
76	New Look	Cooper, et al.								
77	Theory of Reasoned Action	Fishbein et al.								
78	Theory of Planned Behavior	Ajzen								
79	Goal Systems Theory	Shah et al.								
80	Correspondent Inference Theory	Jones-Davis								
81	Self-Perception Theory	Bem								

Notes:

- (1) Numbered Reference
- (2) Theory Name used as common reference in literature
- (3) Principal Theorist associated to Theory
- (4) Classification referring to Person- or Personality related variables as commented on in Chapter 3.2.
- (5) Classification according to the various Phases within the Process of Motivation as defined according to Chapter 3.3.1.
- (6) Classification referring to Conditions as defined according to Chapter 2.3.2.
- (7) Classification referring to Competencies as defined according to Chapter 2.3.2.
- (8) Classification referring to Instruments as defined according to Chapter 2.3.2.
- (9) No classification within the various Phases of the Process of Motivation as defined according to Chapter 3.3.1., nor within the Determinants of the Process of Inference: Conditions, Competencies and Instruments as defined according to Chapter 2.3.2.

Publications associated to the referenced Motivation theories (for an overview including brief descriptions of each theory: see Appendix II, Section A., Table A.):

69. Psychological Reactance Theory (Brehm, 1966, 1972).
70. Learned Helplessness Theory (Seligman, 1975).
71. Perceived Freedom (Steiner, 1970)
72. Social Cognitive Theory (Bandura, 1993, 1997, 2000, 2001, 2002, 2006).
73. Theory of Cognitive Dissonance (Festinger, 1957).
74. Self-Consistency Theory (Aronson, 1968, 1992; Aronson & Carlsmith, 1962; Thibodeau & Aronson, 1992)
75. Self-Affirmation Theory (Steel, 1988; Steele & Liu, 1983; Steele, Spencer & Lynch, 1993).

Table 4.1. (Continued)

An overview of Motivation theories;

An analysis of elements or concepts within theories as captured within the various Stages of the Model of Motivation.

		4	5	Phase 6					Phase 7				Phase 8 (5)										
		Rity	Imp	External Self-A.					Anticipated Change				Dedication										
		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Conditions	Competencies	Instruments	Not covered		
		Reality	Impact	Aspiration	Contemplation	Validation	Attainment	Fulfillment	Δ - Attitude	Δ - Goal	Δ - Energy	Δ - Achievement & Fail.	Δ - Satisf. & Frustr.	Appreciation	Approbation	Affirmation	Commitment	(6)	(7)	(8)	(9)		
69																						(10)	
70																							(11)
71																							(12)
72																							(13)
73																							(14)
74																							
75																							
76																							
77																							
78																							
79																							
80																							
81																							

Element or concept from referenced theory as presumed captured within Stages of the Model of Motivation
 Element or concept from referenced theory as presumed captured within the Model, with variations in interpretation

(10) The theory refers in part to Instruments that are defined as Determinants of the Process of Inference, as elaborated on in Chapter 2.3.1.
 (11) The theory refers in part to Conditions that are defined as Determinants of the Process of Inference, as elaborated on in Chapter 2.3.1.
 (12) The theory refers in part to (specific) external Competencies, that are defined as Determinants of the Process of Inference, as elaborated on in Chapter 2.3.1.
 (13) Reference is made to the observed interrelations between goals in Goal Systems Theory, as elaborated on in Chapter 4.5.3.3.
 (14) Attribution theories are aimed at assigning causes both to one's own behavior (observer) and to behavior of others (actors). Following restrictions defined in Chapter 2.3.1., causal attributions assigned to others are excluded from the analysis.

76. New Look (Cooper & Fazio, 1984; Cooper, 1992, 1999; Stone & Cooper, 2000).
 77. Theory of Reasoned Action (Ajzen & Fishbein, 1980, 2005; Fishbein & Ajzen, 1975).
 78. Theory of Planned Behavior (Ajzen, 1985, 1991, 2002; Fishbein & Cappella, 2006).
 79. Goal Systems Theory (Shah & Kruglanski, 2000; Shah, Kruglanski, Friedman, Spencer, Fein & Zanna, 2003).
 80. Correspondent Inference Theory (Jones & Davis, 1965).
 81. Self-Perception Theory (Bem, 1967).

Table 4.1. (Continued)
 An overview of Motivation theories;
 An analysis of elements or concepts within theories as captured within the various Stages
 of the Model of Motivation.

Ref.	Theory	Principal Theorist	Person & Personality	Phase 1		2	3				
				Expectancies		Eff.	Internal Self-A.				
(1)	(2)	(3)	(4)	1 Attitude	2 Goal	3 Energy	4 Achievement & Fail.	5 Satisf. & Frustr.	6 Effort	7 Realization	8 Actualization
82	Covariation Theory	Kelley									
83	Two-Factor Attributional Theory	Schachter									
84	Naïve Attributional Theory	Heider									
85	Attributional Theory	Weiner									
86	Personal Construct Theory	Kelly									
87	Meaningfulness	Klinger									
88	Implicit Motivation Theory	Ferguson et al.									
89	Motives in Industry	Viteles									
90	Affiliation	Mayo									
91	Basic Human Tendencies	Bühler									
92	Conditions of Worth	Rogers									
93	Self-Actualization	Maslow									
94	Need Hierarchy	Maslow									
95	Reformulated Need Hierarchy	Kenrick et al.									
96	ERG Theory	Alderfer, 1972									
97	Rational Choice Theory	Scott, 2000									
98	Control Theory	Carver et al., 1981									
99	Regulatory Focus Theory	Higgins, 1997									

Notes:

- (1) Numbered Reference
- (2) Theory Name used as common reference in literature
- (3) Principal Theorist associated to Theory
- (4) Classification referring to Person- or Personality related variables as commented on in Chapter 3.2.
- (5) Classification according to the various Phases within the Process of Motivation as defined according to Chapter 3.3.1.
- (6) Classification referring to Conditions as defined according to Chapter 2.3.2.
- (7) Classification referring to Competencies as defined according to Chapter 2.3.2.
- (8) Classification referring to Instruments as defined according to Chapter 2.3.2.
- (9) No classification within the various Phases of the Process of Motivation as defined according to Chapter 3.3.1., nor within the

Publications associated to the referenced Motivation theories (for an overview including brief descriptions of each theory: see Appendix II, Section A., Table A.):

82. Covariation Theory (Kelley 1967, 1971, 1972, 1973).
83. Two-Factor Attributional Theory (Schachter, 1964; Schachter & Singer, 1962).
84. Naïve Attributional Theory (Heider, 1944, 1958).
85. Attributional Theory (Weiner, 1985, 2010).
86. Personal Construct Theory (Kelly, 1958, 1966).
87. Meaningfulness (Klinger, 1975, 1977).
88. Implicit Motivation Theory (Ferguson, Hassin & Bargh, 2008).
89. Motives in Industry (Viteles, 1932, 1953).

Table 4.1. (Continued)

An overview of Motivation theories;

An analysis of elements or concepts within theories as captured within the various Stages of the Model of Motivation.

	4	5	Phase 6					Phase 7				Phase 8 (5)								
	Reality	Imp	External Self-A.					Anticipated Change				Dedication				Conditions	Competencies	Instruments	Not covered	
	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	(6)	(7)	(8)	(9)
			Aspiration	Contemplation	Validation	Attainment	Fulfillment	Δ - Attitude	Δ - Goal	Δ - Energy	Δ - Achievement & Fail.	Δ - Satisf. & Frustr.	Appreciation	Approbation	Affirmation	Commitment				
82	■																			
83	■																			
84	■																			(10)
85	■																			(10)
86	■																			(10)
87	■					▨					▨				▨					
88																				
89																				(11)
90																				(11)
91																				(11)
92	■		▨																	(11)
93																				(11)
94																				(12)
95																				(12)
96																				(12)
97	■	▨																		
98	■																			
99	■	▨																		

■ Element or concept from referenced theory as presumed captured within Stages of the Model of Motivation
 ▨ Element or concept from referenced theory as presumed captured within the Model, with variations in interpretation

- Determinants of the Process of Inference: Conditions, Competencies and Instruments as defined according to Chapter 2.3.2.
 (10) Attribution theories are aimed at assigning causes both to one's own behavior (observer) and to behavior of others (actors). Following restrictions defined in Chapter 2.3.1., causal attributions assigned to others are excluded from the analysis.
 (11) The theory refers in part to Conditions that are defined as Determinants of the Process of Inference, as elaborated on in Chapter 2.3.1.
 (12) The theory refers in part to Conditions and Competencies that are defined as Determinants of the Process of Inference, as elaborated on in Chapter 2.3.1.

90. Affiliation (Mayo, 1933; see also: Dunnette & Kirchner, 1965; Roethlisberger, 1977).
 91. Basic Human Tendencies (Buhler, 1972; Buhler & Allen, 1972; Buhler & Marschak, 1967).
 92. Conditions of Worth (Rogers, 1951, 1959, 1961, 1963).
 93. Self-Actualization (Maslow, 1943, 1954, 1971, 1973a, 1973b, 1976; Rogers, 1959, 1961, 1963).
 94. Need Hierarchy Theory (Maslow, 1943, 1954, 1959, 1971, 1973a, 1973b, 1976).
 95. Reformulated Need Hierarchy (Kenrick, Grisevicius, Neuberg & Schaller, 2010).
 96. ERG Theory (Alderfer, 1972).
 97. Rational Choice Theory (Scott, 2000).
 98. Control Theory (Carver, 2001; Carver & Scheier, 1981, 1990, 1998, 2012).
 99. Regulatory Focus Theory (Higgins, 1997, 2001, 2011; Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001; Molden & Higgins, 2004, 2008; Scholer & Higgins, 2008; Shah & Higgins, 2001).

Table 4.1. (Continued)
 An overview of Motivation theories;
 An analysis of elements or concepts within theories as captured within the various Stages
 of the Model of Motivation.

4.5. The Analysis of the Literature *Empirical Research*

Following an analysis of theories, an overview of findings from empirical research is provided, with overviews of supportive evidence, conflicting evidence, and supplemental findings to the Model of Motivation.

In the description of theories the convention is followed, mentioned in Chapter 2.2., to have a notation using capital letters, as in 'Motivation', referring to the Model of Motivation and its related Phases and Stages, as presented in Chapter 3, to discriminate these constructs from those used in literature. Thus, all concepts in literature are referred to in small letters to provide a contrast to those used in the study¹.

4.5.1. Supportive Evidence

An overview is presented of results from literature providing support for findings from the inductive inference. Distinctions are made in the respective Phases of the Model of Motivation, as indicated Chapter 4.2.

1. A Phase of Expectancies

Empirical research starting in the early years of the twentieth century, has produced considerable evidence of regulatory mechanisms as assumed in a Phase of Expectancies preceding behavior, or Effort, within the Process of Motivation, with reference to Chapter 3.3.1.1.

First attempts, however, at providing evidence of subconscious regulatory mechanisms as proposed by Freud (1922, 1927, 1933), were hindered by lack of a research tradition within the psychoanalytic movement that followed after the introduction of his ideas. Freud's psychoanalytic theory only provided a 'new language' with which to examine human action, and with the exception of defense mechanisms, it has generated very few research and empirical support (Weiner, 1980b). Indirectly, however, evidence in support of Freud's theories was obtained from research investigations in two fields of study. A first field was based on assumptions made by Adorno, Frenkel-Brunswick, Levinson, & Sanford (1950) on aggressive inhibition and displacement in research on individuals with characteristics labeled as having a so-called 'authoritarian personality' (for an

¹ To follow a traditional connotation used in the literature presenting the various theories, the convention has not been used in the notes referring to the content of the various theories provided in Appendix II, Section A., Table A.

overview of findings see: Konman, 1974)¹, thus providing a first indication for an internal regulatory mechanism as suggested by Freud, especially indicative of a Stage of Attitude suggested within a Phase of Expectancies. A second field of research, providing indirect empirical evidence for Freud's subconscious regulatory mechanisms in support of those proposed in the Model of Motivation, was based on extensive experimentation following Lewin's Field Theory developed in the nineteen thirties (Lewin, 1935, 1936, 1938; see also: Hall & Lindzey, 1957). Where behavior was assumed by Lewin to be determined by needs, valences and distances, the relative steepness of approach and avoidance activities could be used to operationalize the expression of a number of those subconscious mechanisms. Thus, indirect support for subconscious regulatory mechanisms was provided through research on task recall (Marrow, 1938; Zeigarnik, 1927, with alternative findings by Rosenzweig, 1943; see overviews in Weiner, 1966), and goal substitution (Henle, 1944; Lissner, 1933; Mahler, 1933; Ovsiankina, 1928), amongst others.

Few theories have generated as much research as Lewin's field theory (Elliot & Dweck, Hall & Lindzey, 1957). In the early thirties first empirical evidence was obtained on 'level of aspiration' by Lewin's student Hoppe (1930), later followed by research on goal aspiration (Festinger 1942A; Lewin, Dembo, Festinger & Sears, 1944; Sears, 1942), providing support for a Stage of Attitude as proposed in the Model of Motivation. These early research initiatives were to become a fundament for achievement motivation research in the fifties. As further clarified in covering the suggested circular process in a Phase of Expectancies, these research findings will be further elaborated on in Phases following a Phase of Reality and its Impact, especially Chapter 4.5.1.8.

Empirical evidence at a rudimentary level in support of a Stage of Attitude emerged from research on arousal and on sensory deprivation and (over)stimulation. It appeared in research on arousal that organisms actively seek stimulation (Berlyne, 1958, 1959, 1960, 1963; Dember, 1956; Dember & Earl, 1957; Harlow, 1953; Harlow, Harlow & Meyer, 1950; Hebb, 1966; Heron, 1957, 1961; Montgomery, 1953). The effects of sensory deprivation generally indicate a disruption of normal behavior (Bennett, 1961; Hirsch & Spinelli, 1970, 1971; Riesen, 1961; Thompson & Melzack, 1956; indirect evidence for effects of stimulus deprivation on development was obtained in numerous studies on maternal deprivation, see: Bowlby, 1973; Bowlby & Parkes, 1970; Harlow, 1958; Harlow & Harlow, 1962, 1966; Harlow & Suomi, 1970; Mineka & Suomi, 1978; Mineka, Suomi & Delizio,

¹ The research of Adorno et al., was initiated by the Department of Scientific Research of the American Jewish Committee, following the atrocities and genocide during the Second World War (see also: Sanford, 1956). Together with research of Milgram (1963, 1964, 1965, 1974) in the early sixties, it was one of the very few research initiatives aiming at causes from a psychological perspective.

1981; Sackett, 1967)¹.

In the early fifties, following research on needs and drives, the concept of a Goal emerged in empirical research on motivation. In his 1951 publication, Hull was one of the first to recognize specific Goal related properties as motivators of behavior.

In the nineteen forties and fifties research instigated by Hull provided evidence for the motivational characteristics of needs and drives, providing empirical evidence for the concept of Energy in a Phase of Expectancies and its relation to a Phase of Effort. Physiological deficits, or needs, were assumed to initiate behavior resulting in the offset of those needs. Drives, according to Hull (1943) were the motivational characteristic of need states, instigating behavior. Thus, a drive, or Energy in a Phase of Expectancies, was perceived as a nonspecific energizer of behavior, or activities in a Phase of Effort. The connection between both was researched many times with a general pattern of results indicating a multiplicative relation between both entities: the higher the drive (Energy), the higher the resulting behavior (Effort)(Spence, Farber & McFann, 1956; Spence, Taylor & Ketchel, 1956; Taylor & Chapman, 1955), with evidence of an even exponential relation (Perin, 1942; Williams, 1938). However, shortcomings in these findings have been reported (Weiner, 1972).

Later, in his 1951 publication, Hull included the concept of 'incentive' or 'incentive value', in his final mathematical equation capturing motivation, as an outcome determined by Drive x Habit x Incentive.

Although subsequent research following Hull was more oriented towards actual behavior in a Phase of Effort followed by observable response associations in a Phase of Internally Evoked Self-Assessment and much less at a cognitive level in a Phase of Expectancies, considered only as energizing through drives and incentives, empirical research produced evidence of so-called 'fractional anticipatory (antedating) goal responses' (Galbraith, 1973; Kendler, Karasik & Schrier, 1954; Logan, Beier & Ellis, 1955; Osgood, 1957, Spence, 1956) introduced by Hull in his earlier work (Hull, 1931). These responses were perceived as 'fractional' because they were a prelude to a full stimulus-response cycle, and as 'anticipatory' as the mental or cognitive response was considered as secondary to account for the resulting behavior (for overviews, see: Beck, 1978, 2000; Black, 1969; Bolles, 1975; Logan, 1968). Later, these anticipatory effects that are assumed to occur in Stages of Achievement and Failure, and Satisfaction and Frustration were confirmed in research on emotion (Mowrer, 1960), and incentive motivation (Bolles

¹ The concept of arousal seems to be unclear in its definition used in current research. Arousal could become an objective in itself, thus assuming Goal properties (see Cofer & Appley, 1964). In addition, arousal can provide reinforcing properties, and become an incentive, as covered in Chapter 4.5.1.3.

& Moot, 1972; Trapold & Overmier, 1972)¹.

Evidence for a suggested circular regulating process within a Phase of Expectancies, in which the Goal is gradually fine-tuned to the personal Attitude and to the respective Stages of Energy, Achievement or Failure, and Satisfaction or Frustration, was indirectly obtained from research on effects of task difficulty in achievement motivation. Both individuals with high achievement needs and those with low achievement needs expressed a preference for tasks with intermediate difficulty (Atkinson & Litwin, 1960; Meyer, Folks & Weiner, 1976; see overviews in Meyer, Folkes & Weiner, 1976). According to the Model of Motivation, levels of achievement expressed in Stages of Attitude and Energy are assumed to be regulated by perceived Significance of a Goal, with assessments in Stages of Achievement and Failure, and Satisfaction and Achievement, resulting in a stabilization towards intermediate Goals. Highly Significant Goals are moderated to compensate for Failure, modest Goals prove to be more attainable, and are assumed to evolve towards more desirable and Significant objectives. Both tendencies could account for the observed preference for intermediate difficulty in tasks (for alternative views, refer to: Atkinson & Feather, 1966). More recent research appears to indicate that 'valuing' (i.e. providing Significance) a certain objective, e.g. a course, is a better predictor of students' academic choices, than expectancies of success, indicating a possible predominance of Significance of a Goal over Stages of Achievement and Failure, and Satisfaction and Achievement (Eccles, 1984, 1987; Eccles, Adler, Futterman, Goff, Kaczala, Meece & Midgley, 1983; Eccles, Adler & Meece, 1984; Feather, 1988; Meece, Wigfield & Eccles, 1990; Wigfield & Eccles, 1992, 2002).

Additional confirmation was obtained from research in the fields of expectancy-value, attribution and social-learning theories of motivation. As these theories tend to emphasize a Phase of Reality and its successive Phases following Impact, according to the Model of Motivation, in defining the objective or Goal, these findings are to be reported successively²,

- In Chapter 4.5.1.6., covering the effects of an assessment
- In Chapter 4.5.1.7., covering the effects of causal inferences
- In Chapter 4.5.1.8., covering the effects of attributions and perceived support

¹ Where the Model of Motivation assumes a feedback loop, this could account for critical observations following the Mowrer-study (Bolles, 1967; Miller, 1963).

² An important reason for applying this distinction in presenting the results of expectancy-value research, is that a frequently used concept of 'task difficulty' in these studies, especially generated by Atkinson and his colleagues, was considered to be equivalent to P_s , or probability of success, and evaluated by the subject (and as such part of a Phase of Expectancies), whereas in research initiated by others task difficulty was operationalized by expressions induced by external influences (hence part of Phases affected by a Phase of Reality).

As stated in a recent overview on social cognitive theory, contemporary cognitive theories of motivation postulate that thoughts, beliefs and emotions of the individual are central processes underlying motivation, in contrast to early views that linked motivation primarily to mechanisms of reinforcement and reward (Schunk & Usher, 2012).

2. A Phase of Effort

Empirical evidence for an expression of behavior in a Phase of Effort, as proposed in the Model of Motivation, defined in Chapter 3.3.1.2., was initiated by research on instinct. The concept of instinct has been used since antiquity (Beach, 1955). In the early nineteen thirties, the concept of instinctive urges gradually fell into disfavor among behavioral scientists (Weiner, 1980b). However, ethologists during the 1970's provided empirical evidence for the notion of internal urges striving for expression. Among these, research into sexuality (Masters & Johnson, 1966, 1970, 1974) and aggression (Lorenz, 1966; Johnson, 1972) have been most prominent. Evidence of accumulation of instinctive urges and subsequent reduction after release have produced contradictory results, both in sexual urges (Masters & Johnson, 1966), sexual as related to aggressive urges (Baron, 1974a, 1974b; Baron & Bell, 1977; Donnerstein, Donnerstein & Evans, 1975; Ramirez, Bryant & Zillmann, 1982; Zillmann & Bryant, 1982), and aggression (Feshbach & Singer, 1971, confirming reduction in violent behavior after exposure; whereas Berkowitz & LaPage, 1967; Berkowitz, 1970 report increased hostile expressions; see further: Marler, 1975), indicating that a variety of external interferences greatly influence the expression of these urges. As such, there appears to be empirical evidence indicating that instinctive behavior, as expressed in a Phase of Effort, is dependent on other regulatory mechanisms besides an instinctive urge per se.

The previously mentioned research instigated by Hull provided evidence for a multiplicative relation between a drive (Energy), and the resulting behavior (Effort), with evidence of an even exponential relation (overviews in Bolles, 1975; Brown, 1961).

Following research on learning theories of Pavlov (1960) and Thorndike (1911), drives not only instigated behavior, but appeared to be linked to responses as well. A prior (successfully) linked response was likely to be repeated when the appropriate stimulus would reappear. Thus, associative stimulus-response linkages, or so-called 'habits' emerged together with these drives. Empirical evidence for these so-called 'learned', or 'secondary' drives remained inconsistent (see overviews in: Bolles, 1975). It appears that avoidance research on fear and anxiety provided positive results (Brown, Kalish & Farber, 1951; Miller, 1948; Petri & Govern, 2013; Spence & Taylor, 1951), whereas the evidence for acquired motives based on approach behavior and positive states was not very convincing (Cofer & Appley, 1964; Petri & Govern, 2013).

The instinct, urge or drive in itself, then, together with associative stimulus-response linkages, appeared to be insufficient as a primal source for explaining behavior or expressions in a Phase of Effort.

3. A Phase of Internally Evoked Self-Assessment

Empirical evidence for an additional regulatory mechanism, defined in the Model of Motivation as a Phase of Internally Evoked Self-Assessment, defined in Chapter 3.3.1.3., was obtained through a series of experiments initiated in the early nineteen fifties.

First confirmations appeared following the previously mentioned research of Adorno et al. (1950) on the authoritarian personality, using Freud's theories. Built-up tension as a result of defenses such as repression to control direct gratification, were assumed to be released through displacement mechanisms against figures who were perceived as being acceptable targets of hostility.

In evaluative overviews of empirical studies to demonstrate defense mechanisms, notably repression, however, outcomes failed to be entirely satisfactory (Rapaport, 1942; Weiner, 1966). A number of experimental studies have demonstrated the phenomenon of repression (Clemes, 1964), while others failed to do so¹. In research conducted by Blum (1961) on perceptual defense mechanisms, subjects were told that any time they perceived three dots on a tachistoscopic display, they would feel anxious according to galvanic skin response measures. These measures confirmed the occurrence of these responses. Blum subsequently trained the subjects 'not to see' the three-dot stimulus. For the 'not seeing' to occur, however, there had to be a registration at a subconscious level of the stimulus first, which was then kept from conscious recognition. In the experiment, Blum was able to demonstrate effects in accordance with the proposed Model of Motivation. Other studies on repression-sensitization, with defenses aimed to avoid anxiety-inducing information, seemed to confirm these findings (Byrne, 1964). Similar observations were made in studies on controlling effects of denial and intellectualization on stress reactions (Lazarus, 1966, 1975; Lazarus & Alfert, 1964; Lazarus, Opton, Nomikos & Rankin, 1965).

In the previously mentioned fundamental research activities initiated by Hull on the association between a drive (Energy), and resulting behavior (Effort), Hull presumed that a drive in itself provided insufficient basis to account for a wide diversity in observed behavior. Drives not only instigated behavior, but appeared to be linked to responses as well. These associative stimulus-response linkages, or

¹ In an overview of research findings, Baumeister, Dale & Sommer (1998) concluded in observing seven defense mechanisms: "Reaction formation, isolation, and denial have been amply shown in studies (...). Undoing (...) is also well documented but does not serve to defend against the threat. Projection is evident (...). Displacement is not well supported (...). No evidence of sublimation was found" (p. 1081).

'habits' were specified by Hull in a mathematical relation as basic determinants of behavior. In the 'Drive x Habit x Incentive' conception of motivation, evidence was obtained for differing effects for approach or avoidance behavior, thus providing support for the distinction made in a Stage of Realization and a Stage of Actualization within a Phase of Internally Evoked Self-Assessment in the Model of Motivation. A change in strength in tendency appeared to be greater for avoidance than for approach as a function of distance from a goal (Miller 1944, 1959; Murray & Berkum, 1955).

Further support for an assumed Phase of Internally Evoked Self-Assessment in the Model of Motivation emerged from empirical research aimed at confirmation of reinforcement theory. Experimental data demonstrated a positive correlation between amount of reinforcement (Stage of Realization) and performance (Effort) (Crespi, 1942; Metzger, Cotton & Lewis, 1957; Zeaman, 1949; for an overview, see: Flaherty, 1982)¹, as well as quality of reinforcement (Stage of Actualization) and performance (Effort)(Elliot, 1928; Panksepp & Trowill, 1971; Simmons, 1924)². Comparable results were found in research on token economies (for a review, see: Matson & Boisjoli, 2009). Thus, evidence appeared to be provided for effects of perceptions of both Achievement and Failure in a Stage of Realization, and Satisfaction and Achievement in a Stage of Actualization on Effort.

The effect of incentive on behavior and motivation was further elaborated on in studies on arousal. Moderate (Fowler, 1967; Hebb, 1966), as well as pronounced changes in arousal (Solomon, 1977, 1980; Solomon & Corbit, 1974) appeared to be reinforcing and instigating behavior. Zuckermann (1994) developed a scale determining the level of arousal and the willingness to take risks in attaining these sensations, providing evidence that these levels vary widely from one person to another.

In the early nineteen sixties, empirical evidence emerged for a curvilinear relation between behavior and arousal, where behavior and level of arousal appeared to progress linearly towards an optimal level of stimulation, beyond which a further increase in arousal produced disorganization and decrements in performance (Berlyne, 1958, 1959, 1960). Although properties of attractiveness (Berlyne) and task difficulty (Broadhurst, 1957) were introduced to account for these results, they produced inconclusive evidence for the empirical findings of a curvilinear relation (Duffy, 1962; Ferguson, 1976; Hokanson, 1969). Where the Model of Motivation suggests alternative Mechanisms to account for consistent findings of curvilinearity, i.e. Significance of the Goal in conjunction to regulating mechanisms associated to Stages of Achievement and Failure and Satisfaction and Achievement, additional empirical research that would include these parameters could provide further confirmation for these assumptions.

¹ The correlation was dubbed the 'amount of reinforcement effect', or AOR, (Bolles, 1975).

² The correlation has been referred to as the quality of reinforcement effect, or QOR, (Bolles, 1975).

Evidence for a suggested loop between a Phase of Internally Evoked Self-Assessment and a Phase of Expectancies with a subsequent Phase of Effort was obtained in research on frustration (Adelman & Maatsch, 1955; Amsel, 1958, 1967, 1972; Amsel & Roussel, 1952; Amsel & Ward, 1954, 1965; Ross, 1964), and frustration and aggression (Brown & Farber, 1951 Dollard, Miller, Doob, Mowrer & Sears, 1939; Haner & Brown, 1955; overviews in Johnson, 1972; Lawson, 1965; Yates, 1962). Although in these findings frustration was perceived as a drive (Energy) energizing behavior (Effort) especially in habit-formation, thus confirming research on the Energy – Effort relation mentioned earlier, an important distinction was made that frustration was assumed to be the result of a state resulting from the non-reinforcement of a previously reinforced response, and not as an isolated drive in itself. More in general, research consistently provided evidence of so-called 'secondary reinforcers': stimuli that were repeatedly associated with positive or negative information about a goal appeared to provide reinforcement in their own right, and thus, were not simple stimulus-response connections (Bindra, 1969; Bolles & Moot, 1972; Klinger, 1977; Overmier & Lawry, 1979; Trapold & Overmier, 1972).

In observing the non-symmetrical findings reported earlier in approach and avoidance research where fear and anxiety appeared to provide more prominent results, the curvilinear relation between behavior and arousal mentioned above, could provide an indication for a tendency to give prevalence to Stages of Failure and Frustration rather than Stages of Satisfaction and Frustration in the assessment of Energy and Effort. Research on resultant valence theory, where perceived probability of success and failure was observed in conjunction with task difficulty, produced a further indication for this tendency (Escalona 1939, 1940; Festinger, 1942, Lewin, Dembo, Festinger & Sears, 1944). In addition, effects appeared to generalize from one need area to another, e.g. failure in a skill-related area lowered expectancies for academic recognition (Crandall, 1955). As indicated earlier, these studies were to expand into research on expectancy-value, attribution and social-learning theories of motivation with a more prominent role assigned to a Phase of Reality that are to be covered in Chapter 4.5.1.6, Chapter 4.5.1.7. and Chapter 4.5.1.8.

4. A Phase of Reality

Empirical evidence produced in support of a Phase of Reality, as defined Chapter 3.3.1.4., emerged in the early nineteen fifties and sixties.

Following the Adorno studies (Adorno et al., 1950), a change in focus occurred in studies on the nature of aggression towards environmental factors. Where in the Adorno studies intra-psyche influences were believed to be predominant, the effects of situational factors could not be sufficiently explained (Weiner, 1980b). The general conclusion from the body of research was that intra-psyche influences did not appear to be the only mechanisms to instigate aggression, with situational

factors playing an essential, regulating role (Berkowitz & Geen, 1966; Berkowitz & LePage, 1967; Berkowitz, 1970, 1974; Milgram, 1963, 1964, 1965, 1974; Zimbardo, 1969). However, from these empirical findings the evidence appears to be inconclusive in defining whether Reality instigates aggression, or aggressive behavior is enhanced by situational factors originating from Reality, as the Model of Motivation suggests.

In these observations, however, it is noted that when Reality is the primal source instigating activities, it is considered in this study to be part of a Process of Interference, rather than a Process of Motivation, and reference is made to Mennes (2016, *in press*), notably Chapters 7, 10 and 13 for an overview of empirical findings.

5. A Phase of Impact

Depending on its 'Significance', assessed in a Phase of Reality, effects of an event on the Process of Motivation were assumed to be evaluated in a Phase of Impact in the Model, as stated Chapter 3.3.1.5.

In addition to the empirical findings mentioned earlier on the accumulation of instinctive urges and subsequent reduction after release, empirical evidence was obtained on external stimuli (i.e. a Phase of Reality) perceived to be Significant (a Phase of Impact) and influencing the expression of behavior. In studies on observational learning, perceived reward or punishment of role models influenced subsequent behavior, in aggression (Bandura, 1965; Bandura, Ross & Ross, 1961; Steuer, Applefield & Smith, 1971), and prosocial behavior (Bryan & Test, 1967; Liebert & Poulos, 1971). More recently, these studies were extended with research on effects of role models and prosocial behavior without reward and punishment generating equivalent effects (Grant, 2007, 2008; Grant & Berry, 2011), thus emphasizing the regulatory effects of Reality as suggested in the Model of Motivation.

Although these studies were less explicit in the degree of Significance attributed to Reality, research on delay of gratification and credibility assigned to a latent/manifest (Bandura & Mischel, 1965) or consistent/inconsistent role model (Mahrer, 1956), appeared to provide an indirect indication for an assumed effect of perceived Significance in a Phase of Reality on behavior.

As stated earlier, it is noted in this regard, that when a Phase of Impact, in conjunction with a Phase of Reality is believed to be the primal source instigating the activity, it is considered to be part of a Process of Interference, rather than a Process of Motivation. Reference is made to Mennes (2016, *in press*), notably Chapter 7, Chapter 10 and Chapter 13.

6. A Phase of Externally Evoked Self-Assessment

Evidence of an evaluative Phase of Externally Evoked Self-Assessment, instigated by input provided in a Phase of Reality, as defined Chapter 3.3.1.6., arose from numerous studies following the introduction of achievement theory in research on motivation.

Empirical evidence for effects within a Stage of Aspiration, in which the Attitude towards the Goal is re-examined given the input provided from Reality and given the new state of affairs the objective is situated in, was provided in research on level of aspiration. After receiving (fraudulent) feedback, levels of aspiration (operationalized by selecting a task with differing levels of difficulty) were shifted in a direction reflecting the input from reality, in both avoidance and approach-oriented individuals (Moulton, 1965).

Effects in a Stage of Contemplation, in which the initial Goal is re-assessed, followed research on need for achievement. A reconfirmation of one's abilities, following Reality, among those high in ability was highly related to performance in a Phase of Effort, and among those low in ability a need for achievement was negatively related to performance (Wright, Kacmar, McMahan & Deleeuw, 1995).

Similar findings were obtained confirming the assumptions made on a Stage of Validation, where Energy is re-assessed reflecting input from Reality. Empirical findings in research on persistence of behavior revealed enhancing effects from Reality when an initial mindset appeared to be confirmed: in approach oriented individuals greater persistence was observed in experimental conditions where a task was (incorrectly) suggested to be 'easy', than 'quite difficult', affirming the initial mindset. Conversely, in avoidance oriented individuals greater persistence was observed at the difficult than the easy task (Feather, 1961).

Empirical evidence for a positive effect within Stages of Attainment and Fulfillment following a positive outcome of an external influence (Phase of Reality), was obtained in task performance (Litwin, 1958)¹. Earlier, Mace (1935) had obtained similar findings, adding that effects were highest when standards were adjusted to the Individual's level of skill and ability, i.e. when a minimal Discrepancy in a Phase of Impact would occur. Similarly, positive effects were reported following a positive outcome of a highly valued (Phase of Impact) external influence (Phase of Reality), in research on effects of occupational status (Strodbeck, McDonald & Rosen, 1957), occupational choice (Mitchell, 1974; Van Erme & Thierry, 1996) and student's academic choices (Feather, 1988; with overviews on cultural differences in Dekker & Fischer, 2008). In addition, Weiner (1980b) reported few successful attempts from research reporting similar effects of negative input from Reality, thus providing indirect support of a presumed neutralizing effect of these negative external influences according to the Model of Motivation.

¹ Although Thorndike, as early as 1917 had produced a first research on the relation between satisfaction and productivity, the subject remained ignored for almost 40 years.

More recently, empirical evidence confirming the effects within Stages of Attainment and Fulfillment following external influence from Reality have been produced in research on self-efficacy as a strong predictor of motivation in general, learning, achievement and both academic and work performance (Bandura, 1997; Caprara, Fida, Vecchione, Del Bove, Vecchio, Barbaranelli & Bandura, 2008; Klassen & Usher, 2010; Multon, Brown & Lent, 1991; Sadri & Robertson, 1993; Schunk & Pajares, 2009; Stajkovic & Luthans, 1998)¹.

Finally, in a general analysis of empirical research related to a Phase of Externally Evoked Self-Assessment, in an emerging interest of psychology aimed at the workplace, research appeared on effects of Reality and work performance^{2 3}. Effects of goal-attainment on performance following Reality have been researched in studies related to so-called 'goal-setting theory' (Locke & Latham, 1990), with consistently positive correlations (for an overview: Locke & Latham, 2002; with critical observations in: Latham & Locke, 2009; Locke & Latham, 2009; Ordoñez, Schweitzer, Galinsky & Bazerman, 2009a, 2009b)⁴.

¹ However, it is unclear from the various research findings reported, whether the effects are produced in an initial Stage of Achievement or a Stage of Satisfaction prior to experiencing a Phase of Reality, or from a Stage of Attainment or a Stage of Fulfillment, following a Phase of Reality. Where within research on self-efficacy, social cognitive theory has been prominent as a conceptual framework, the implicit role of social or environmental influences positions these research findings within a Phase of Externally Evoked Self-Assessment. In social cognitive theory, reference is made to 'self-reactive' and 'contextual' influences (i.e. preceding, and following Reality) (Bandura, 1991).

² In parallel to the previous note, it is unclear from the various research findings reported, whether the effects on performance stem from Stages within a Phase of Expectancies prior to experiencing a Phase of Reality, or from Stages within a Phase of Externally Evoked Self-Assessment following a Phase of Reality. Given the setting within the workplace from which the various research findings were reported, a choice for the latter was made.

³ For general overviews of the last fifty years on so-called 'work motivation', reference is made to: Korman, Greenhaus & Badin (1977), Latham & Pinder (2005) and Grant & Shin (2012).

⁴ In related studies, various researches have provided an identification of the various goals as defined by employees. Around the nineteen thirties Houser (1938) reported highest rankings for: (1) a fair adjustment of grievances, (2) steady employment, and (3) safety. Since the first researches emerged in the late nineteen forties (Harrell, 1949), there appears to be a difference between the various hierarchical levels, as Hofstede (1979) reported: professionals stressed the importance of job content, whereas skilled workers and technicians valued job security and money; finally, unskilled workers stressed the importance of benefits and work conditions. More recently research has stressed temporal changes in goal-definition in so-called 'research on generational differences', where representative samples of generations have been observed over time in longitudinal studies comparing respondents over time at a same age. As a principal outcome, extrinsic values were highest among respondents born around 1975, were high among respondents born around 1990, and were lowest among those born around 1960. Those born around 1990 appeared to place less importance on social and intrinsic work values than those born around 1960 (Twenge, Campbell, Hoffman & Lance, 2010).

In addition Latham, Locke & Fassina (2002) provided through research an explanation confirming the effects of Reality and a subsequent Phase of Externally Evoked Self-Assessment on assessments made in a renewed Phase of Expectancies. (...) "high goals lead to high performance, which in turn leads to rewards. Rewards result in high satisfaction as well as high self-efficacy regarding perceived ability to meet future challenges through the setting of even higher goals" (as summarized in Latham & Pinder, p. 497). As such they reconfirmed earlier findings made in the nineteen sixties by Lawler & Porter (1967) of sustained evidence that job performance affects (job) satisfaction, not the reverse. Thus, reaffirming the observations made in the Model of Motivation.

7. A Phase of Anticipated Change

Evidence of an intended change-oriented Phase of Externally Evoked Self-Assessment, has been indirectly provided by research on perceived causes, originating from studies in social learning and personal responsibility. If one reflects on the consequences of one's actions, influenced by input provided in a Phase of Reality, this provides an indication for an 'anticipating reflection on change' as postulated in Chapter 3.3.1.7.

In research on perceived cause of success, different reinforcement schedules were manipulated by telling subjects, through a Phase of Reality, the outcomes of a task were either obtained through personal skills, or by chance. The general outcomes demonstrated a considerable influence on expectancies of success when a successful relation with personal skills, rather than chance, was suggested (Phares, 1957; James & Rotter, 1958), thus providing evidence for a differential effect from a Phase of Reality, through a Phase of Anticipated Change on subsequent renewed perceptions in a Phase of Expectancies.

Similar findings were obtained on studies of perceived attractiveness. Again, differential effects occurred following interference from Reality, with decreased attractiveness following negative, and increased attractiveness following positive interference (Hammock & Brehm, 1966; Mazis, 1975).

In research on perceived locus of control, a same differential effect appeared from a Phase of Reality, where individuals that had high expectancies for personal control, i.e. had positive experiences following intervention from Reality, appeared to be more receptive for external input, than those low in generalized expectancies for personal control (Phares, 1976; Seeman, 1963; Seeman & Evans, 1962).

In addition, a pronounced loss of control on external interference has been demonstrated to have severe adverse effects on motivation and general well being (Hiroto & Seligman, 1975; Lefcourt, 1976; Seligman, 1975; Seligman & Maier, 1967). Significance of a perceived interfering Reality appears to regulate these effects (Roth & Kubal, 1975; Wortman & Brehm, 1975).

Closely related to research on perceived effects of external interference, are findings obtained from 'intrinsic' versus 'extrinsic motivation'. Initial interest in a task, defined as 'intrinsic motivation', was partly lost when an external reward, defined as 'extrinsic motivation', was provided for performing that task (Deci, 1975). Losing one's influence on external interference from Reality, reflected upon in a Phase of Anticipated Change, led to a re-tuning of parameters in a subsequent Phase of Expectancies that found expression in a substantial reduction in motivation, either experienced in expectancies of success or failure or expressed in behavior.

In these and previously mentioned findings, however, a clear distinction has been made in studies aimed at registering effects on motivation following exposure to Reality, and those aimed at evaluating effects of external control, as these studies are observed within the context of the Process of Interference, referred to in Mennes (2016, *in press*), notably Chapter 7, Chapter 10 and Chapter 13¹.

8. A Phase of Dedication

Mechanisms that are assumed to be operational in a Phase of Dedication, as defined in Chapter 3.3.1.8., have been researched at length in a broad range of cognitive consistency studies, where cognitions were observed that were in disharmony, instigating processes to reestablish consonance (Zajonc, 1968).

Research was initiated by Festinger in the late nineteen fifties with the presentation of a theory of cognitive dissonance (Festinger, 1957). Evidence that mechanisms modify cognitions produced by a discrepant Reality have been reported by many (Aronson & Carlsmith, 1963; Aronson & Mills, 1959; Fazio, Zanna & Cooper, 1977; Festinger & Carlsmith, 1959; Harmon-Jones, Brehm, Greenberg, Simon & Nelson, 1996), with studies extending dissonance even to deprivation (Brehm, 1962).

Negative perceptions of the self appeared to moderate these outcomes. In self-consistency theory research on dissonance, people with negative expectancies (Aronson & Carlsmith, 1963), low-self-esteem (Glass, 1964; Maracek & Mettee, 1972), or even mild-depression (Rhodewalt & Agustsdottir, 1986), appeared to experience less dissonance when their behavior was discrepant with socially acceptable standards, providing indirect evidence for effects of assumed Mechanisms of Representation, following a confrontation with Reality, and Coping, in subsequent Phases in the Model of Motivation, as postulated in Chapter 3.3.2.2., Chapter 3.3.2.3. and Chapter 3.3.2.4. Moreover, people with high self-esteem were found to provide equivalent patterns, with prevalence to maintaining positive cognitions about one's self (Steele, Spencer & Lynch, 1993).

¹ Deci (1975) makes a distinction between a 'controlling aspect' according to this study, which appears related to a Process of Interference, and an 'informational aspect', which would refer to a Process of Motivation. For an extensive overview of self-determination theory: Ryan & Deci, 2000.

Finally, research into the various expressions resulting from Mechanisms of Representation in a renewed cycle within the Model of Motivation, especially on a Constituent, referred to as Consolidation in Chapter 3.3.5., has been performed by Weiner, Russel & Lerman (1978), in terms of experienced satisfaction and frustration, supporting assumed observations especially on outcomes in a Phase of Internally Evoked Self-Assessment.

4.5.2. Conflicting Evidence

An overview of results from literature with conflicting evidence appears to provide surprisingly little indications for divergent outcomes to assumptions made in the Model of Motivation. It goes without saying that within the various theoretical approaches divergence in rationale for findings has occurred on many occasions. Examples include controversies between reinforcement and cognitive theories (Rotter, 1954), theories emphasizing situational versus intrapersonal determinants of behavior (Bandura & Walters, 1963), controversies between dissonance and reinforcement theorists (Wicklund & Brehm, 1976), or consistency theories (Cialdini, Trost & Newsom, 1995; Korman, 1974; Pepitone, 1966; Singer, 1966), to name but a few. But these controversies occurred on the interpretation of findings, not on divergent results.

Nonetheless, a number of contradictory results emerged.

From studies on aggression the evidence appeared to be inconclusive in defining whether Reality instigates aggression, or aggressive behavior is enhanced by Reality, as the Model of Motivation suggests.

In dissonance studies, researchers obtained evidence that could contradict the dissonance properties assumed in the Model of Motivation, notably in Mechanisms of Representation, Chapter 3.3.2.2., Chapter 3.3.2.3. and Chapter 3.3.2.4., in support of constructs derived from self-perception theory (Bem, 1967, 1970). These findings could indicate that reducing balance or restoring dissonance not always seemed to occur (Bator & Cialdini, 2006; Cialdini, Trost & Newsom, 1995). In this respect, it also appeared that cultural differences could play an additional role in these observations (Heine, & Lehman, 1997; Kashima, Siegel, Tanaka & Kashima, 1992). An assumed mediating effect of Significance of Reality according to the Model of Motivation, has not been researched in these findings.

Finally, recent research produced new insights on unconscious goal pursuit (Bargh, 2006; Bargh, Gollwitzer, Lee Chai, Barndollar & Trötschel, 2001; Custers & Aarts, 2010). "According to the concept of unconscious goal pursuit (...) the direction and motivation of people's thinking and doing can start and proceed outside of conscious awareness, because one can directly rely on accessible goal-relevant representations that are primed by contextual as well as behavioral information (...). When activating or priming a goal (...), we do not access a single concept, but rather a rich structure containing, (...) cognitive, affective behavioral information" (Aarts & Custers, 2012, p. 234). These findings call for a further conceptualization of the Goal construct.

4.5.3. Supplemental Findings

An overview of results obtained from literature that could provide additions to the Model of Motivation, have been referred to earlier in an analysis of theories, Chapter 4.4.

Empirical research produced evidence for supplemental findings obtained from three theories.

1. Lewin's Field Theory

Lewin's field theory provided an interesting addition to the proposed Model of Motivation (Lewin, 1935, 1936, 1938). The concept of tension between inner-personal regions, and the extent of permeability of boundaries of those regions creating increase or decrease in tension, provided a dynamic construct for pluriform desires, or multiple Models of Motivation, and their mutual influences. In the present representation of the Model of Motivation these different cycles are assumed to exist independently from each other. The concept of regions and adjacent permeabilities could enrich the present static description. Research in the nineteen thirties and forties produced a considerable number of empirical findings to support these observations, although the evidence was produced through indirect operationalization of key concepts (most prominent are: Festinger 1942A; Lewin, Dembo, Festinger & Sears, 1944; Sears, 1942, Zeigarnik, 1927. see overviews in Weiner, 1966, 1980b).

2. Atkinson & Birch's Dynamics of Action Theory

In addition to the concept of adjacent regions, Atkinson & Birch (1970) proposed a dynamics of action theory providing a series of mathematical equations aimed at capturing and predicting change from one activity to another. The strength of motivation, or tendency T was observed for different activities over time, where a single tendency was assumed to predominate. For two activities, the strength of tendencies could be expressed in five patterns of changes over time. The theory provided an addition to the Model of Motivation, especially where it assumed a phenotypical similarity in the expression of differing Models of Motivation, where underlying motivational dynamics could be dissimilar with differential implications for subsequent actions.

3. Goal Systems Theory

A third additional insight was provided by Shah & Kruglanski. (2000) in their goal systems theory. The theory provided an addition to the Model of Motivation by observing the effects of associatively related goals. As stated: "(...) goal commitment may depend not only on the motivational contents of the goal itself,

but also on the goal's interconnections within alternative entities within an individuals' goal-system. Goal commitment (...) may be negatively affected by the goal's association with alternative, unrelated, goals whose activation may serve to undermine commitment to the goal in question" (Shah, Kruglanski, Friedman, Spencer, Fein & Zanna, 2003, p. 258; see also: Shah, Friedman & Kruglanski, 2002). Thus, the theory provided an additional perspective for a further elaboration of the Model of Motivation, observing pluriform expressions of various interacting Models and their respective Goals.

More recently, two additional insights to goal-interconnection have been addressed by Carver & Scheier (2012): the issue of goal-priority and goal-conflict. "People typically have many goals under pursuit simultaneously, but only one has top priority at a given moment" (Carver & Scheier, 2012, p. 36). Moreover, mechanisms involved in goal-conflict were observed: "the idea that conflict exists between longer term and shorter term goals is also part of a literature on self-control failure (e.g., Baumeister, Heatherton & Tice, 1994). This literature focuses on cases in which a person is both motivated to act and motivated to restrain that action" (Carver & Scheier, 2012, p. 38). These ideas provide further thoughts for an elaboration of the Model of Motivation, extending on the hierarchical order in goal-pursuit, or outcomes of interconnected goal-conflict.

4.5.4. Conclusions

An embedment of the Model of Motivation in current findings as obtained from empirical research was aimed at observing similarities and dissimilarities Following the rationale on embedment in the exposé from Chapter 1.5., an emphasis was placed on research following a hypothetico-deductive approach.

In the conclusions formulated Chapter 4.4.1., empirical research was expected to produce an extensive range of findings over a large array of topics. Much in line with these expectations, empirical research provided many congruent findings with assumptions made in the Model of Motivation, supporting directly or indirectly the various Phases and constituting Stages from the Model.

Although controversies were found to be addressed in many aspects of the field, these controversies were targeted at interpretations of findings. Empirical research contradicting the assumptions underlying the Model of Motivation have been reported on only a few occasions.

As reported earlier, supplemental findings emerged from research associated to three theories of motivation.

As a general conclusion from the analysis of empirical research, it was found the inductive inference leading to the assumptions made in the Model of Motivation, appeared to be supported by a majority of research findings.

4.6. Observations

Following the analysis of the literature that appeared to provide an embedment of the Model of Motivation within current theory and research, a number of evaluative observations can be made.

In accord with the methodology, proposed in Chapter 4.2., which structured the analysis, a partition is made in observations on theories of motivation and observations on empirical research. A number of observations, however, can be applied to both approaches. A dichotomy is maintained, with topics emphasized in observations on either theory or research, to avoid duplication in coverage.

4.6.1. Observations on Theories of Motivation

Following an overview of nearly a hundred theories of human motivation, a first, theory-related observation characterizes a current state of affairs: *there is no consensus on a definition of motivation*. In an attempt to capture a common denominator, theorists appear to have been guided by a single question: "why do organisms behave as they do?" (Weiner, 1980b, p. 6.). The broad scope, however, of this definition has had profound repercussions on the development of theories of human motivation. A number of observations are made, that refer first to the definition of motivation, second to the various concepts used within the context of the definition, and third to the forms of representation in which the various theories have made use of these concepts.

1. Observations on Definitions

Within the context of the definitions used in the present study, a vast majority of definitions in current literature appear to include both the Process of Motivation and the Process of Interference, thus making no distinction between mechanisms that are manifest within the Individual, and procedures or techniques that are aimed at addressing these mechanisms and that are initiated externally by an Actor-Intervener. An example is the definition provided by Petri & Govern (2013): "Motivation is the concept we use when we describe the forces acting on or within an organism to initiate and direct behavior" (p. 4)^{1 2}

¹ In an overview provided by Kleinginna & Kleinginna in 1981, from 102 definitions, only 7 made an explicit distinction in 'internal' (i.e. a Process of Motivation) and 'external' influences (i.e. a Process of Interference).

² In Table 4.1. the distinction is applied in all observed theories by referring to Conditions, Competencies and Instruments, with reference to notes (6), (7) and (8).

In conjunction with these observations, there appear to be very few theories that explicitly take into account the Perspective from which the theoretical construct is defined or approached, as elaborated on in Chapter 3.2. and Appendix I, Section A.1.2. Only attributional theories appear to provide such distinctions (Jones & Nisbett, 1972, Monson & Snyder, 1977; Weiner, 1980b).

Although the inherent incongruity between both Processes has been addressed in the overview of the literature in the current Chapter by applying a clear differentiation and considering only theories and empirical research with reference to the Process of Motivation, it appears to have created a profound confusion in current literature, both in theory construction and in the interpretation of results produced in empirical research. Further reference is made to the analyses in Mennes (2016, *in press*), notably Chapter 7, Chapter 10, and Chapter 13.

2. Observations on Concepts

The insufficiencies in the definition of motivation have led to confusion in related psychological constructs.

A conceptual confusion appears to have occurred in literature in two manifestations:

- *Divergent Conceptual Confusion:* Different theorists appear to have used different names, or designations, for the same constructs, notions, or ideas.

As stated by Weiner, concepts of drives and needs have been used interchangeably: "For example, Hull considered drive the psychological manifestation of a need state. Over time, however, drives became identified with states of deprivation, behaviorism, and research employing infrahuman organisms, while the concept of need became identified with molar personality theorists and signified more stable characteristics of individuals" (Weiner, 1980b, p. 180). Furthermore Divergent Conceptual Confusion was found in concepts as reinforcement and incentive motivation that indicate a same phenomenon (Bindra, 1969), or employee morale and satisfaction (Guion, 1958; Stagner, 1958).

As a consequence, theorists suggested introducing similar names for truly differing constructs, as assumed in the Model. Following the localization of the Reticular Activating System (RAS) within the brain (Moruzzi & Magoun, 1949), and its relation to arousal, activation theorists argued that emotion and motivation were equivalent, sharing a common neurological origin (Hebb, 1955; Lindley, 1950, 1951). With divergence in definitions, motivation and emotion continue to be perceived by some theorists as equivalent (Bindra, 1974; Kalat, 2001; Wilson, 2003).

A deficiency in defining motivation, with Divergent Conceptual Confusion, appear to have had a profound impact on theorizing.

- *Convergent Conceptual Confusion*: Theorists appear to have used similar names, or designations, for different constructs, notions or ideas.

An example of Convergent Conceptual Confusion has occurred within expectancy-value theories with the concept of incentive value. In Atkinson's theory of achievement motivation, the strength of tendency to achieve success at a particular activity T_S , was represented as: $T_S = M_S \times P_S \times I_S$. I_S (originally indicated as In_S) was defined as: 'the incentive value of success at a particular activity' (Atkinson & Birch, 1978, p. 94). Atkinson considered T_S to be a multiplication of a general disposition M_S or motive to achieve success, 'which the individual carries about with him from one situation to another' (*Ibid.*, p. 94) and two specific goal-related properties: P_S , or the 'expectancy (subjective probability) that the act will have as a consequence the attainment of an incentive' (Atkinson, 1957, p. 360), and I_S , or 'the value of the incentive' (Atkinson, 1957, p. 361), where incentive is equal to the concept of a Goal (see Atkinson, 1957, note 3, p. 363). In literature however, the incentive value of success has been referred to as a non-goal-related general disposition: 'pride in accomplishment'.

Referring to the Model of Motivation, the designation I_S or value of the incentive, has been used in literature for different constructs: a specific goal-related property (the incentive, or value of the Goal 'X', defined as the Significance of Goal 'X' in the Model of Motivation) and a disposition (the incentive value to attain success, or Goal 'Y', in the process of attaining Goal 'X', defined as a separate Goal, with separate parameters in the Model of Motivation).

This conceptual confusion ('Significance of a Goal 'X' ' versus 'obtaining feelings of pride following the attainment of Goal 'X' ', which is a different Goal in itself) has had profound consequences in application and understanding of expectancy-value theory and research. The shift in emphasis from Goal-related Significance towards effects on the subjective experience of success, could have led to divergent empirical outcomes, where research findings aimed solely at observing effects within Phases of Expectancies, Effort and Internally Evoked Self-Assessment, i.e. without observing effects from Reality or a Phase of Impact, have been confused with the vast majority of those obtained including all these five Phases.

3. *Observations on Levels of Abstraction*

A further observation on theories of motivation is a distinct variation in so-called 'Levels of Abstraction'. In defining goal-orientation, some theories specified the content or expression of a goal, whereas other theories restricted their description to abstract generalizations. In describing goal-orientation as an abstract concept, theoretizing occurs at a higher Level of Abstraction, than in describing the content or expression of one's goal. As a consequence of these differences on

Levels of Abstraction between theories not only Concept Confusion occurred, but resulting theories became diffuse in the concepts they used. In a strict sense, the one definition encompassed or (partly) contained the other. Reference is made to an overview in Mennes (2016, *in press*), notably Chapter 7.6.1.2.

4. Observations on Theoretical Representations

In the expression of theories of human motivation a number of observations can be made on theoretical representations that have been used:

- *An Uniformistic Representation of Motivation:* Most theories, especially stemming from a Freudian and Hullian background, appear to have used a uniformistic notion of need or goal-orientation: motivation was the expression of a single state, or 'pooled source'. In addressing the issue of motive generality, Weiner stated in 1980: "It is not known, for example, whether a person who strives for success in a particular occupation also exhibits achievement-type behaviors on the tennis court, in his night school literature class, or in other such situations" (Weiner, 1980b, p. 188), and referred to only one study, at the time, examining the issue (i.e. Rosenstein, 1952). Only two theories seemed to have addressed a pluriformistic goal-orientation. Lewin's field theory appeared to express a pluralistic conception of needs, where motivation was the expression of distinct and multiple sources, or 'regions', where each region was associated with a particular goal object or class of objects (Lewin 1936, 1938). Atkinson & Birch, indirectly reiterated Weiner's observation, declaring in 1970 that the main problem for motivational theorists was to expand theoretical thought "...to explain and to predict the change from one activity to another, rather than the change from activity to rest or from rest to activity" (as expressed by Weiner, 1980b, p. 209).

The uniformistic conception that motivation is the expression of a single state, has possibly led to a prominent discussion, referred to as: the 'trait-situation controversy', where behavior is either perceived as consistent in differing situational settings (trait), or perceived as different and dependent on each situational setting¹.

In the Model of Motivation a pluriformistic approach is used, where Motivation is assumed to be an expression of a multitude of differing Models of Motivation, each defined by its own Goal, in reciprocal interaction.

¹ Controversy might have risen from two differing conceptions. When motivation and behavior are being perceived as synonymous concepts, an uniformistic conception of motivation (which 'traitists' do) suggests an uniformistic expression of behavior (which 'traitists' don't). Moreover, a difference in Levels of Abstraction, as covered in Chapter 4.6.1.3., might have contributed to the controversy. Where 'traits'-theorists aimed at describing mechanisms, 'situational'-theorists meant to describe the expression of these mechanisms. (See also: Alker, 1972; Allport, 1966; Bowers, 1973; Mischel, 1968, 1973, 1976).

- *An Uni-dimensional Representation of Motivation:* Most theories appear to have had a single approach in the expression of its constituent theoretical constructs.

The profound influence of behaviorism and its philosophy of positivism, a philosophy that only directly observable knowledge is valid (Watson, 1913, 1925; Watson & McDougall, 1928), appear to have determined subsequent theorizing. Behaviorists "(...) imposed a strict cause and effect determinism in behavior. For them, human choice, or 'free will' (was) an illusion" (Latham, 2007, p. 9). This cause and effect perception, starting from a stimulus-response connection, persisted in theoretical conceptualization through reinforcement to habit-formation, incentive, evolving into primitive arousal, towards cognitive intention, and exploration. This theoretical conceptualization further progressed in conceptions of valence, expectation and attribution.

Fig. 4.1. depicts over sixty years of theorizing on the concept of motivation, where repetition of the conceptual 's-r connection' persisted and remained as a principal 'cause-effect' expression in almost all theories on human motivation, extending from the early nineteen thirties to the end of the nineteen nineties.

This reoccurring conceptual Uni-dimensional Representation, could have affected originality, eventually causing a stagnant field of study (Reeve, 2005), and leading to a call for new groundbreaking papers by *the Academy of Management Review*, recognizing the limitations of theory and research in the field of (work) motivation (Steers, 2001).

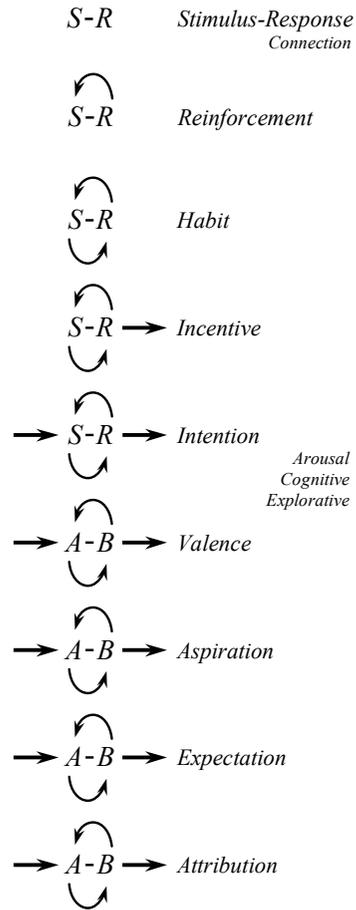


Fig. 4.1.
A Uni-Dimensional Representation in Traditional Motivation Theories.

- *A Static Representation of Motivation*: Finally, a tendency appeared to exist in current theories to represent motivation as a static phenomenon. The temporal aspect of processes evolving over time has been underrated (Donovan, 2001; Kanfer, 1990; Steel & König, 2006). Motivation appeared to be represented as a 'snapshot' instead of a 'video' articulating its dynamic properties.

4.6.2. Observations on Empirical Research

In observing empirical research in the field of human motivation, two final observations emerge: on operationalization and on methodology.

1. Observations on Operationalization Measuring Motivation

Empirical research, in following a traditional hypothetico-deductive approach, demonstrated strong similarities on the operationalization of motivation. Characteristic for research appeared to be an emphasis on behavior. The roots of motivational theories stem predominantly from the Anglo-Saxon world, with its traditional emphasis on observable behavior. However, different authors have expressed caution for the leading role of overt behavior in operationalization of motivation (e.g. Petri & Govern, 2013). In addition, subjective measures, like the Thematic Apperception Test in achievement motivation research have been prominent despite controversies (Entwistle, 1972; Klinger, 1966), in strong contrast to a meticulous adherence to strict research designs.

As stated earlier, in Chapter 3.3.3., especially subjective measurements capturing the concept of Motivation, are expected to affect validity as a result of various Mechanisms of Anticipation and Representation.

As a final observation on operationalization, the traditional approach to measuring motivation appears to have resulted in a minimalist expression of motivation, severely limiting its complex and pluriform manifestation.

2. Observations on Methodology

The analysis aimed at observing empirical research produced within a robust hypothetico-deductive tradition.

According to Weiner (1980b), the approach in literature has been characterized by two stratagems: one stratagem (the 'experimental stratagem') is a product of academic, experimental procedures, identifying determinants of behavior and then specify (mathematically) the relations between these variables, while the other (the 'clinical stratagem') is an outgrowth of clinical, non-experimental procedures aimed

at producing basic principles of behavior that provide insights in its causes without being subject to definitive proof or disproof¹.

The traditional methodology as observed within the 'experimental stratagem' has produced a wealth of (replicable) empirical findings. However, the approach inherently contains a severe threat of oversimplification depending heavily on validation of minimalized hypotheses. As elaborated on initially in Chapter 1.5., the emphasis on hypothesis-validation appears to have initiated a decline in traditional inductively inferred Models from which a wealth of hypotheses could have been derived.

In short, the approach has led to an oversimplification of the complex and intricate phenomenon of motivation.

Conversely, the large array of findings from this traditional approach in empirical research has enabled an embedment, and thus an indirect validation, of the elements, Mechanisms and conceptualizations presented in the Model of Motivation.

4.6.3. *Conclusions*

Following an analysis of the literature that appeared to provide an embedment of the Model of Motivation within a current body of knowledge, a number of evaluative observations were made, aimed both at theory and research.

In an overall and initiating observation, there appears to be no consensus on a definition of motivation. The diversification made in a Process of Motivation distinct from a Process of Interference, has not been made in literature.

It appears repercussions have been many.

In theories of motivation, a number of observations were made on Conceptual Confusion, Levels of Abstraction and Theoretical Representations. Divergent Conceptual Confusion was observed, where different theorists appeared to have used different names, or designations, for same constructs, notions, or ideas. Convergent Conceptual Confusion, where theorists used similar names, or designations, for different constructs, notions or ideas, appeared less prominent but induced profound misinterpretation. In defining concepts, some theories specified content, whereas other theories restricted descriptions to abstract generalizations, causing ambiguous theoretical constructs defined at differing Levels of Abstraction. In Theoretical Representations, the body of literature on theories of human motivation appeared to be Uniformistic, where motivation

¹ Later, Weiner re-defined these stratagems to a 'machine metaphor' versus a two-fold 'godlike metaphor', expanding the 'clinical stratagem' to an understanding of motivation suggesting that people behave rationally and purposefully (Weiner, 1991).

was the expression of a single state without diversification in differing expressions of various motivational states; Uni-dimensional, with a strong replicative tendency in simple cause-and-effect constructions; and Static, with non-dynamic representations of motivational processes. The origin of this observed tendency appears to be in a strong tradition of 'replicative' elaborations, with one theory progressing on the other, or rather, on its derived empirical findings.

In observations on empirical research, a same tendency appeared, with an emphasis on limited operationalizations of motivation. Combined with a strong tradition of hypothetico-deductive research designs, the approach appeared to have produced a robust body of empirically validated data, at the expense, however, of a limited, or 'atomistic' approach of the complex and intricate phenomenon of motivation.

Although the analysis of the literature on motivation thus appeared to be 'replicative' and 'atomistic', it produced a body of knowledge that provided a robust embedment for the inferences that have led to the formulation of the Model of Motivation.

4.7. Summary

The theoretical Model of Motivation obtained largely through a process of inductive inference in Chapter 3, was reflected on through an analysis of current literature. Elements from the Model were connected to findings from literature, both in theory and through empirical research. Thus, an embedment was made between the observations made through an inductive inference and an existing body of knowledge, as proposed in Chapter 1.5.

A first analysis of current theories of human motivation¹ aimed at observing similarities and dissimilarities between the Model of Motivation and those proposed in current literature. A vast majority of theories appeared to be covered by the Model, thus providing an indication of embedment in traditional approaches to motivation. Most theories appeared to highlight distinct Phases within the Model, with only few theories displaying an extensive coverage of all suggested Phases.

From a first analysis, it appeared no theories were to be found that provided a conflicting approach to the Model, although some findings suggested a further conceptualization of the Goal-construct.

¹ In the description of theories the convention was followed, introduced in Chapter 2.2., to have a notation using capital letters, referring to the Model of Motivation and its related Phases and Stages, as presented in Chapter 3, to discriminate these constructs from those used in literature. Thus, all concepts in literature were referred to in small letters to provide a contrast to those used in the study.

Three theories provided supplemental elements to extend the Model of Motivation towards covering multiple Goals in observing dynamics of interlinked Goals and Goal-preferences.

An embedment of the Model of Motivation in current findings obtained from empirical research was to aim, likewise, at observing similarities and dissimilarities in connection to the body of knowledge obtained from a mainly deductive approach. An emphasis was placed on research following a hypothetico-deductive approach, based on the rationale proposed in Chapter 1.5.

The analysis was to provide overviews of supportive, conflicting and supplemental evidence.

Much in line with expectations formulated Chapter 4.4.1., that empirical research was likely to produce an extensive range of findings over a large array of topics, the vast amount obtained from literature provided many congruent findings with assumptions made in the Model of Motivation, supporting directly or indirectly the various Phases and constituting Stages and assumed Mechanisms within the Model.

Although controversies were found to be addressed in many aspects of the field, these controversies were assumed targeting interpretations of findings. Empirical research contradicting the assumptions underlying the Model of Motivation, have been reported on only a few occasions.

Supplemental findings emerged from research associated to three theories of Motivation.

Following an analysis of the literature, a number of evaluative observations were made, aimed both at theory and research.

In an overall and elementary observation, it appeared that in current literature no diversification has been made in a Process of Motivation distinct from a Process of Interference, thus in mechanisms that are manifest within the Individual, versus procedures or techniques aimed at Management of Motivation by an Actor-Intervener.

It appears that repercussions from this observation have been many.

In theories of motivation, three main observations were made:

- *Conceptual Confusion appeared to have occurred, in two manifestations:*
 - *Divergent Conceptual Confusion was observed, where different theorists appeared to have used different names, or designations, for same constructs, notions, or ideas;*
 - *Convergent Conceptual Confusion was found, where theorists used similar names, or designations, for different constructs, notions or ideas.*
- *Levels of Abstraction: In defining concepts, some theories specified content, whereas other theories restricted descriptions to abstract generalizations, causing ambiguous theoretical constructs defined at differing Levels of Abstraction.*

- *Theoretical Representations were made, as expressed in three manifestations:*
 - *An Uniformistic Representation of Motivation: where motivation was the expression of a single state without diversification in differing expressions of various motivational states;*
 - *An Uni-dimensional Representation of Motivation: with a strong replicative tendency in simple cause-and-effect constructions;*
 - *A Static Representation of Motivation: with non-dynamic representations of motivational processes. The origin of this observed tendency appeared to be in a strong tradition of 'replicative' elaborations, with one theory progressing on the other.*

In sum, theories of motivation appeared to have had a strong 'replicative' tendency.

In observations on empirical research, a tendency appeared, with an emphasis on limited operationalizations of motivation. Combined with a strong tradition of hypothetico-deductive research designs, the approach appeared to have produced a robust body of empirically validated data, at the expense, however, of a limited, or 'atomistic' approach of the complex and intricate phenomenon of motivation.

Although the analysis of the literature on motivation thus appeared to have been 'replicative' and 'atomistic', it produced a body of knowledge that provided a robust embedment for the inferences that have led to the formulation of the Model of Motivation.

As a general conclusion, then, from the analysis of theories and empirical research produced in literature on human motivation, it was concluded that the inductive inference leading to the assumptions made in the Model of Motivation, appeared to have been supported by a majority of theories and research findings.

In a final observation, from a slightly different perspective, it appeared that in the attempt at coverage and embedment, the Model of Motivation provided a comprehensive conceptual framework for classification of current theories on human motivation.