

A DYNAMIC THEORY OF PERSONALITY

Selected Papers

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CHAPTER VIII

SURVEY OF THE EXPERIMENTAL INVESTIGATIONS

The following synopsis is designed to give the reader a very brief survey of our experimental investigations. It is planned, above all, to orient those who wish to go on to a closer acquaintance with these investigations. The description is therefore essentially from the systematic point of view. It may be desirable, however, to introduce it with a few historical remarks.

HISTORICAL REMARKS

The point of departure for *Untersuchungen zur Handlungs- und Affektpsychologie* [Investigations in the Psychology of Action and Emotion] was the investigation of the measurement of the will and the fundamental law of association,¹ the original aim of which was to make more precise Ach's attempts to measure the will. This investigation showed that the fundamental law of association (apart from other defects) errs in its basic dynamic concepts in so far as it treats couplings or other constraining forces as constituting also reservoirs of energy or tensions. Also it became clear to me that the phenomena occurring in these experiments were by no means so simple as was customarily assumed, but quite complicated and unstable. It was evident that one had to look for the simpler and essentially stabler phenomena of will psychology in facts which were generally considered especially complicated.

There followed a series of investigations in the field of the psychology of perception. In one of these² I attempted to

¹ K. LEWIN, *Das Problem der Willensmessung und das Grundgesetz der Assoziation*, *Psychol. Forsch.*, 1922, 1, 191-302; 2, 65-140.

² K. LEWIN and K. SAKUMA, *Die Sehrichtung monokularer und binokularer Objekte bei Bewegung, und das Zustandekommen des Tiefeneffektes*, *Psychol. Forsch.*, 1925, 6, 298-357.

derive the perception of depth from certain constellations of forces in different layers of the perceptual system. The investigation of the reversal of spatial position¹ treats a problem which stands in the closest relation not only to the structure of the perceptual field but also to the problems of the will.

Fortunately I experienced Max Wertheimer's teaching in Berlin and collaborated for over a decade with Wolfgang Köhler. I need not emphasize my debts to these outstanding personalities. The fundamental ideas of Gestalt theory are the foundation of all our investigations in the field of the will, of affection, and of the personality. In the few articles in which the problems of general Gestalt theory are not explicitly discussed, this is solely because they have become the self-evident foundation of experimental practice.

Historically the first experimental investigation of the series on the structure and dynamics of the personality and of the psychological environment is that of Zeigarnik.² All later experimental investigations are built upon this. It was an attempt to break a first path through a primeval forest of facts and assumptions, using as compass concepts the practical utility of which was still wholly untried. The coincidence on the part of B. Zeigarnik of unusual conceptual clearness with great psychological acuity in the judgment of particular cases made this attempt possible.

Among the later experimental investigations a similar fundamental significance attaches to Dembo's investigation³ of anger as a dynamic problem. She shows, by means of a self-critical investigation versatile in attack, that even rather complicated problems (success and failure, level of aspiration, substitution or compensation, reality and unreality, conflict, social relations, changes in the structure of the person), problems which at first seem to lie beyond any possibility of a dynamically strict and yet experimentally demonstrable presentation, are capable

¹ K. LEWIN, Ueber die Umkehrung der Raumlage auf dem Kopf stehender Worte und Figuren in der Wahrnehmung, *Psychol. Forsch.*, 1923, 4, 210-261.

² Über das Behalten erledigter und unerledigter Handlungen, *Psychol. Forsch.*, 1927, 9, 1-85.

³ Der Ärger als dynamisches Problem, *Psychol. Forsch.*, 1931, 15, 1-144.

of such a presentation with the aid of a constructive psychology. Her investigation is an impressive illustration of the fact that in a dynamic theory of psychological processes the problems of the environment and of the person are inseparably bound up together. It turned out that the investigation of this emotion extended itself necessarily to an investigation of certain environmental structures. In this research the utility and fertility of topological concepts for the presentation of complicated environmental structures was demonstrated for the first time. The reader will naturally miss the quantitative evaluation which is an essential component of Zeigarnik's and of all the other researches of the series. But according to my experience the thorough quantitative investigation of a field can always be obtained with some persistence if only the qualitative analysis is sufficiently advanced. A quantitative elaboration of some of the questions attacked by Dembo is already at hand, namely: the problem of success and failure and level of aspiration by Hoppe, Fajans, Rosenfeld; the problem of substitution (compensation) by Köpke, Lissner, Mahler; the problem of reality and unreality by Brown, Mahler, Sliosberg; certain social fields by Wiehe. I hope that the last-named investigation may have a fundamental significance for a broad field of social psychology.

SYSTEMATIC SURVEY

One may distinguish roughly two meanings of the question "Why" in psychology:

1. Why, in a given momentary situation, that is, with a given person (P) in a certain state and in a certain environment (E), does precisely this behavior (B) result? The problem is thus to represent the behavior (event) as a function of the momentary total situation ($B = f(PE)$).

2. The more historical question: Why, at this moment, does the situation have precisely this structure and the person precisely this condition or state?

It is important to separate these two questions more clearly than is done, for example, in association psychology and in

Freud's theory. The center of gravity of our experimental work lies, as a rule, in the first kind of why. In experimental practice, to be sure, these two kinds of problems are often so closely related that the creation of a sufficiently unequivocal situation requires a certain historical structure of the experimental situation.

In accordance with our general conceptual and methodological assumptions nearly all of our investigations treat not only questions of *individual differences* but problems of general *lawfulness*. The center of gravity lies, as a rule, in the problem of the general laws.

As regards content, no action is referred either to the person on the one side or to the psychological environment on the other; or yet to a more-or-less combination of both factors. Rather, each action is referred to the momentarily obtaining structure of such a person in such a psychological situation. Nearly all the investigations are therefore occupied with both problems. The following classification thus indicates merely the center of gravity of the problem formulations.

General Laws of the Psychological Systems

Tension Systems (Need, Purpose).

Ovsiankina, The Resumption of Interrupted Activities.¹ This article contains proof that the effect of a purpose or intention is the formation of a quasi-need, that is, dynamically, of a tension system. This tension system drives toward discharge and causes activities which serve the execution of the purpose. The technique of the experiments was essentially as follows: an activity was interrupted, and after a certain interval a situation of relative freedom for the subject was created. There resulted a frequent resumption of the interrupted activity (Table I).

The influence of the following factors, among others, upon the frequency of resumption were investigated: (1) the kind of activity; (2) the phase in which the activity was interrupted;

¹ *Psychol. Forsch.*, 1928, 11, 302-379.

(3) the duration of the interruption; (4) the nature of the act of interruption; (5) the presence or absence of the uncompleted task at the end of the interruption; (6) the attitude and character of the person.

TABLE I¹

Duration of interruption, minutes	CI					DI							
	RI	TR	R	R?	NR	R in per cent	RI	TR	R	R?	NR	R in per cent	R + TR in per cent
0 to 2	3	..	18	..	..	100	3	..	15	..	..	100	100
2 to 4	..	..	14	..	..	100	..	..	19	..	1	95	95
4 to 8	..	..	8	..	..	100	..	1	17	..	5	74	78
8 to 20	..	..	3	..	..	100	..	1	13	..	4	74	78
20 to 40	..	..	1	..	..	100	..	..	5	1	..	92	92
Over 40	..	..	..	..	..	..	..	..	2	1	..	83	83
Indeterminate	..	..	..	..	..	..	..	1	..	..	5	..	..
Total	3	..	44	..	..	100	3	3	71	2	15	79	82

¹ Ovsiankina, *op. cit.*, Table 1, p. 326.

The left half of the table under the heading *CI* includes the experiments with interruptions occurring as though by chance. The right half with the heading *DI* lists the experiments in which the first task was interrupted by asking the subject to do another (disturbing) task. In the first column the duration of the interruption is given in minutes. The six following columns show the number of cases of *RI* (refusal to be interrupted), *TR* (tendency to resume), *R* (resumption), *R?* (questionable resumption), *NR* (nonresumption), and *R* in percentage (total percentage of resumptions), according to the duration of interruption. In calculating the percentage of *R*, the instances of *R?* are counted as one half.

The proof that the resumption (or as the case may be, a repetition of the activity) fails to occur as soon as the tension system is discharged by the attainment of the goal is important for the character of the quasi-needs as tension systems. It is shown that a substitute satisfaction can have the same effect and, further, that the presentation of the half-finished work of another person does not, as a rule, cause a tendency to completion.

Zeigarnik, On the Retention of Completed and Uncompleted Activities.¹ Zeigarnik attacks the same problem as Ovsiankina but with another technique. If a purpose or intention cor-

¹ *Psychol. Forsch.*, 1927, 9, 1-85.

responds dynamically to a tense system, it is to be expected that the state of tension of the system should be evident not only in the tendency to completion of the activity but also, for example, in its better retention. Zeigarnik finds, indeed, that *memory* for uncompleted activities is much better (Table II). She proves that it is not the shock effect of the interruption that is the cause of this better retention but rather the state of the psychical systems involved at the time when the subject is asked to recall. The influence of the following things, among others, was investigated in detail: (1) the structure of the task (an activity with a definite end as against a continuous activity); (2) interest in the task; (3) the attitude of the subject toward the experimenter; (4) the differences among children, adolescents, and adults.

Zeigarnik shows that the tension systems may be destroyed by sufficiently strong variations of tension in the whole person (affective variations produced naturally, Table III, and artificially); and that in a fatigued state (owing to the then occurring fluidity of the systems) no sufficiently stable systems arise. Zeigarnik attacks the important question of the firmness of form of nontense systems. (This question is directly investigated in an unpublished work of Kaulina and plays an essential part in that of Schwarz.) The structure of the more comprehensive system totalities is shown to be essential; only when the single psychological systems are sufficiently separated are completed activities better remembered than uncompleted.

*Birenbaum, On the Forgetting of an Intention.*¹ It is shown that intentions or purposes which correspond to a main task (or to a central need) are almost never forgotten. With the less important purposes such, for example, as writing the name (or the date) on the sheet of paper used for the main task, the forgetting (nonexecution) depends essentially upon whether and if so how the system corresponding to the purpose is *imbedded* in that of the main task or main goal.

Birenbaum treats of the factors which determine whether a newly arising system is dynamically a relatively independent

¹ *Psychol. Forsch.*, 1930, 13, 218-284.

TABLE II.—THE RATIO OF THE RETAINED UNCOMPLETED TO THE RETAINED COMPLETED ACTIVITIES $\frac{RU}{RC}$

		Rank Order of Subjects				Arithmetic mean by groups			
Rank $\frac{RU}{RC}$	Subject	Activities				ΣR	RU	RC	$\frac{RU}{RC}$
		ΣR	RU	RC	$\frac{RU}{RC}$				
1	Wd.	7	6	1	6				
2	Be.	9	7	2	3.5				
3	St.	13	10	3	3.3				
5	Jf.	8	6	2	3.0	9.1	7	2.1	3.5
	M.	8	6	2	3.0				
7	Eu.	12	9	3	3.0				
	Pl.	7	5	2	2.5				
10	Paj.	9	6	3	2.0	10.8	7	3.8	1.9
	Gin.	9	6	3	2.0				
	Hf.	6	4	2	2.0				
	Pt.	15	10	5	2.0				
14	Ml.	12	8	4	2.0				
	Dm.	11	7	4	1.75				
	V.	11	7	4	1.75				
	Git.	11	7	4	1.75				
16	Dm. E.	13	8	5	1.6				
19	Ml. R.	15	9	6	1.5	13.3	7.8	5.5	1.4
	Jn.	10	6	4	1.5				
	Rm.	15	9	6	1.5				
	Gld.	10	6	4	1.5				
23	Jic.	10	6	4	1.5				
	Ml. E.	12	7	5	1.4				
	Kür.	19	11	8	1.4				
25.5	Hn.	12	7	5	1.4				
	Glk.	16	9	7	1.3				
28	Jnk.	14	8	6	1.3				
	Gl.	12	6	6	1.0	11.3	5.7	5.7	1.0
	Wit.	12	6	6	1.0				
Schn.	10	5	5	1.0					
30.5	Sim.	11	5	6	0.8	9.0	4.0	5.0	0.8
	Fr.	9	4	5	0.8				
	Sim. H.	7	3	4	0.75				
32									
Arithmetic mean		11.1	6.8	4.25	1.9				

ΣR = number of retained activities.

RU = number of retained uncompleted activities.

RC = number of retained completed activities.

RU/RC = ratio of retained uncompleted to retained completed activities.

¹ Zeigarnik, *op. cit.*, Table 1, p. 9.

TABLE III.¹ $\frac{RU}{RC}$ FOR EXCITED SUBJECTS

Subject	<i>RU</i>	<i>RC</i>	$\frac{RU}{RC}$
I	3	4	0.75
II	4	5	0.8
III	6	7	0.9
IV	7	9	0.8
V	4	4	1.0
VI	2	4	0.5
Mean	4.3	5.5	0.78

¹ Zeigarnik, *op. cit.*, Table 28, p. 70.

TABLE IV¹

	Task	<i>E</i>	<i>SE</i>	<i>F</i>	Percent <i>E</i>
Before Critical Task	1. Match task <i>A</i>	36		1	97
	2. Match task <i>B</i>	37			100
	3. Match task <i>C</i>	36		1	97
	4. Match task <i>D</i>	36		1	97
	5. Match task <i>E</i>	36		1	97
	Mean: Tasks 1 to 5	36.2	0	0.8	97.6
Critical Task	I. Favorite poem or 6. II. Draw a pentagon or III. Write cities	10	11	16	27
	7. II or III or I	13	8	16	35
	8. III or I or II	16	4	17	43
After Critical Task	9. Guessing a name	16	5	16	43
	10. Word building	16	6	15	43
	11. Outlining a figure	8	5	24	22
	12. Monogram	7	5	25	19
	Mean: Tasks 7 to 12	12.7	5.5	18.8	34.2

E = number of subjects who executed intention.

SE = number of subjects who subsequently executed intention.

F = number of subjects who forgot intention.

¹ Birenbaum, *op. cit.*, Table 2, p. 238. A series of five match tasks (different, but of the same general character) is followed by one radically different in content (the critical task, No. 6 above), which is then followed by a heterogeneous series.

whole or a dependent part of a more comprehensive regional system. The special structure of the total system and the degree of its wholeness [*Ganzheitlichkeit*] (in the sense of a stronger or weaker dynamic Gestalt) may be to a large extent experimentally determined by means of the temporal structure of the event and the internal relations of its content (Table IV). Under certain circumstances the structure of the total system may be changed after the event. The tension of the single systems, as well as the structure of the total system (and hence the frequency of forgetting) is found to depend, further, upon the general state of tension and the affective state of the whole person.

Substitution.

The question of the discharge of the psychical systems through substitute or compensatory activities forms the chief problem in the investigation of the following.

Lissner, The Discharge of Needs by Substitute Activities.¹ *Lissner* investigated the conditions under which a substitute activity has dynamic substitute value for the original activity (Table IVa). The nonresumption of interrupted activities after the insertion of a substitute activity was used as a criterion of substitute value (see Chap. VI, page 180). The substitute value of a difficult performance was found to be considerably higher than the substitute value of an easier performance (see page 248). The substitute value increases with the similarity between the original and the substitute task. The degree of connection between the systems involved plays a decisive role.² *Köpke* investigates this question comparatively on feeble-minded and normal children.

Mahler, Substitute Activities of Different Degrees of Reality.³ *Mahler*, with a similar experimental technique, studied the question of dynamic substitute value especially for substitute

¹ *Psychol. Forsch.*, 1933, 18, 218-250.

² *LISSNER, op. cit.*, Table 8, p. 240.

³ *Psychol. Forsch.*, 1933, 18, 27-89.

TABLE IVc. — THE DEPENDENCE OF THE SUBSTITUTE VALUE UPON THE DEGREE OF DIFFICULTY (MEASURED IN WORKING TIME)² OF THE SUBSTITUTE ACTIVITY AND UPON ITS SIMILARITY TO THE ORIGINAL ACTIVITY³

Task	Puzzle			Riddle			Translation		
	Original activity	Substitute activity		Original activity	Substitute activity		Original activity	Substitute activity	
		Similar	Different		Similar	Different		Similar	Different
Working time mean in seconds	44 194	13 70	11 32	43 340	13 211	11 744	39 399	11 312	10 693
Mean variation...	76.7	370.4	22.8	119.2	73.2	289.5	124.9	84.8	187.5
Substitute value: RWS RS ⁴		1.8 < 2.2 < 1.3 < 1.5			1.4 < 3 < 0.9 < 1.3			2.3 < 2.8 < 1.2 < 1.4	

¹ Lusner, *op. cit.*, Table 6, p. 237.

² As a measure of the difficulty of the activity we use the time required for its execution. In the case of the original activity also time may be used as a measure of difficulty, even though these activities are interrupted before completion. The interruption occurred at almost exactly the same point in the execution with the different subjects. The riddle task was regularly interrupted after ten words, the translation task at a certain point in the text. Even in the case of the puzzle the mode of work was sufficiently similar to permit the selection of a rather precisely defined point for interruption.

³ The difference between the arithmetic means for easy and hard substitute activities is, without exception, great both absolutely and in comparison to the original activity. The fact that the mean variation is considerable is due to the magnitude of the individual differences and does not impair the characterization of the substitute activities as easy or difficult. If one compares original activity and substitute activity for the same subject, the following is to be noted. The easy substitute activities are executed more quickly than the original activity in 59 out of 64 cases (even though the original activity is not completed). The difficult substitute activities, on the other hand, require a longer time than the original activity in 59 out of 63 cases.

⁴ The summary of the substitute values in this table shows particularly clearly and without exception that (1) the substitute value of the more difficult substitute activity is greater than that of the easier; (2) the substitute value of similar substitute activities of the same degree of difficulty is greater than that of dissimilar substitute activities; (3) the substitute value of easy similar activities is greater than that of difficult dissimilar activities; (4) the difference between the substitute values is greatest between difficult similar and easy dissimilar substitute activities.

The substitute value is expressed as the ratio of the frequency of resumption of the interrupted activity when no substitute is given (RWS) to the frequency of resumption of the interrupted activity when a substitute is presented (RS).

activities of varying degrees of reality (thinking; talking; actual doing) in adults and children (Table V). On the whole, substitute activities of higher degrees of reality have greater substitute value. The relation of the substitute act to the inner goal of the original activity nevertheless remains of decisive importance. Substitute satisfaction occurs only when this inner goal is in sufficient degree attained by the substitute activity (Table VI). Mahler investigates the difference between problem tasks and realization tasks and shows the significance of the creation of a socially acknowledged fact for the degree of reality and the substitute value of the substitute activity.

TABLE VI¹

	Tasks not completed			Tasks completed by substitution (subst. = acting)			Tasks not completed			Tasks completed by substitution (subst. = talking)		
	n	TSR	SR	RI	TSR	SR	RI	TSR	SR	RI	TSR	SR	RI
Per cent	19	33	28	17	4	15	58	8	9	25	0	24
ΣR in per cent	65			29			67			42		
$\frac{RAN}{RAS}$				2.2						1.6		

SR = spontaneous resumption.

TSR = tendency to spontaneous resumption.

RI = resumed after supplementary instruction.

ΣR = SR + TSR + RI.

RAN = resumption of acts not completed.

RAS = resumption after completion of substitute act.

n = number of cases.

The supplementary instruction (used with subjects that did not spontaneously resume, at the very end of the experiment, when numbers of both completed and uncompleted tasks were equally accessible) was as follows: "Now do any one of these tasks." The preference for uncompleted tasks in response to this neutral instruction provided in these cases a further criterion for the persistence of the tension.

In the columns TSR, SR, and RI, the figures indicate the total number of cases of resumption of the different kinds, irrespective of whether the same subject showed more than one kind. In ΣR , however, only one resumption of each resumed task is counted for each resuming subject, even though he may have resumed in more than one way. Consequently it may happen that ΣR is less than TSR + SR + RI.

¹ Mahler, Table 4, p. 44.