

## ON FINISHED AND UNFINISHED TASKS

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"Über das Behalten von erledigten und unerledigten Handlungen,"  
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An intention implies not so much a predetermined opportunity for its realization as it does a need or quasi-need whose dynamic state of tension *makes* opportunines.<sup>1</sup> Therefore it may be asked whether such a need functions only to accomplish this task or whether the state of tension also influences other aspects of the person's behaviour. In the present study we shall investigate the influence of such tensions upon an achievement of *memory*. Specifically we shall seek to answer the question: *What is the relation between the status in memory of an activity which has been interrupted before it could be completed and of one which has not been interrupted?* We suspect that an unsatisfied quasi-need probably does influence even purely memorial retention.

The experiments reported here were conducted with 164 individual subjects (students, teachers, children), and in addition there were two group experiments (47 adults, 45 children).

*Procedure.*—The instructions were: "I shall give you a series of tasks which you are to complete as rapidly and correctly as possible."<sup>2</sup> The subject was then given from 18 to 22 tasks one at a time—but half of these were interrupted before he could complete them. The order and type of interruption was such that no one could suspect the reason. For example, two tasks would be interrupted, then two allowed to reach completion, one interrupted followed by two completed, etc.

Following the last task the experimenter asked, "Please tell me what the tasks were upon which you worked during this experiment."<sup>3</sup> No time limit was imposed during the subject's report.

A record was kept noting the *order* of recall. Very often a number

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1 Cf. *Selection 24*.

2 In no case did the subjects know what die problem really was in which the experimenter was interested.

3 Before this information was requested the table was cleared of all tools, pens, paper, etc., which had been used during work. This was done not as if it were part of the experiment but casually and with some incidental remark about "tidying up".

of tasks would be mentioned, and then a pause would occur during which the subject tried to remember what other tasks he had had. The quantitative results given below refer to the number of tasks recalled *before* this pause.

After the experiment was over, introspective reports were requested. Following this the subjects were asked to tell which tasks had been the most and which the least interesting, pleasant, etc. In addition to these data the experimenter also made notes of all spontaneous remarks occurring during the work period.

The tasks themselves consisted of manual work (constructing a box of cardboard, making clay figures, etc.) and of mental problems such as puzzles, arithmetic, and the like. The time required for most of these was 3-5 minutes. The tasks were divided by the experimenter (without the subject's knowledge) into two groups, *a* and *b*, and half of the total number of subjects completed all of the *a* and none of the *b* tasks ; the other half completed all of the *b* and none of the *a* tasks. Hence our data refer to memory for *each* task both as completed and as interrupted.

*Results.*—Let us designate those tasks which were *interrupted and recalled* as IR, those which were *completed and recalled* as CR. If the memory for both types was in any given case the same, then IR/CR would equal 1. Should there be a case in which  $IR/CR = 1.5$ , this would mean that the interrupted tasks were recalled 50 per cent better than the completed ones. If  $IR/CR = 3$ , the superiority of interrupted over completed tasks would be 200 per cent. If  $IR/CR = 0.8$ , then recall of the interrupted tasks was 20 per cent worse than that of the completed ones.

The results obtained from our first 32 subjects indicate an average memory advantage of 90 per cent enjoyed by *interrupted* tasks (i.e.  $IR/CR = 1.9$ ). The extremes extend from a 500 per cent advantage with one subject to a 25 per cent *disadvantage* with another. Summarizing, we find that of the 32 subjects, 26 remembered interrupted tasks best; 3 remembered the completed and interrupted ones equally well; 3 remembered the completed better than the interrupted. That interruption of a task greatly improves its chances of being remembered can be seen from this survey: of the 22 tasks used, 17 were remembered best

when interrupted, 2 were equally well recalled regardless of interruption or completion, 3 were better recalled when completed. So far as amount of time is concerned, the advantage *should* lie with completed tasks since a subject who completed a task naturally spent a longer time with it than one who did not. That, however, completed tasks were not the best recalled can be seen from the foregoing figures.

As regards the order of recall we find that the interrupted tasks were mentioned first three times as often as were the completed ones. The same holds almost as decisively for the second task to be mentioned. (Somewhat later in the recall there is a reversal of this: completed tasks are then mentioned more frequently than the interrupted ones.) This shows that the memory advantage of interrupted tasks is also apparent as regards priority of recall. The foregoing experiment was repeated with a *new* set of tasks and 15 *new* subjects. The results were an almost exact duplicate of those already reported. In this case the recall advantage of interrupted tasks was 100 per cent (i.e.  $IR/CR = 2$ ).

*Group experiments.*—The next two experiments were given to groups of 47 adults and 45 school children (average age of the latter, 14 years). There were 18 tasks; the material for each was presented in a separate envelope. An additional envelope contained a questionnaire for the report.<sup>4</sup> At the word "Begin" each subject opened the first envelope, noted the instructions for that task and began work. As soon as he had finished, or immediately upon being told to stop, the entire contents were returned to the envelope. All subjects began each new task at the same time. Because some worked faster than others the instructions to stop (interruption) were given when approximately half of the group had completed a given task.

The results show a memory advantage enjoyed by interrupted tasks of 90 per cent ( $IR/CR = 1.9$ ) for adults and of 110 per cent ( $IR/CR = 2.1$ ) for children. Of the 47 adults, 37 remembered the interrupted task best, 3 remembered both equally well, 7 recalled the completed ones best. Among the 45 children, 36 were best in recalling unfinished tasks, 4 were equal, and 5 remembered the finished tasks best.

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<sup>4</sup> Each subject himself indicated by a line the point at which a pause occurred in his recall (see above, p. 4).

*Discussion.* 1. *Additional data.*—Three "types" of subjects could be distinguished. The first were those who sought to perform as instructed because they wished *to please the experimenter*. Another, the ambitious type, strove *to excel as if in competition with others*. The third type was *interested in the task for its own sake* and sought to solve each problem in the way the problem itself demanded. In keeping with these differences the experimenter did not preserve a fixed mien and method with all subjects. Those of the first type were allowed to see the experimenter's pleasure when a task was well done. Work done by the second group was inspected with the air of an examiner, while the third group was allowed to work unmolested, the experimenter in this case remaining passive.

Those tasks which the subject was allowed to finish were brought to an end by the subject alone: he was never disturbed until he himself declared the work done. Where an interruption was to be made, the experimenter would say, "Now do this, please," and lay the new task on the table. The reasons assigned for this by the subjects themselves (in subsequent report) showed that but very few had been able to guess *why* they had been interrupted. The most common views were: "You wanted to see if I had really been concentrating," or "You interrupted me as soon as you saw I was on the right (wrong) track". Finding a plausible explanation for the interruption did not, however, mean satisfaction with the fact of being interrupted. On the contrary. The subjects objected, sometimes quite strenuously, and were loath to stop even when the experimenter insisted upon it. Some subjects even showed affective reactions.

Since the real meaning of an interruption is realized only when it *is felt* to be an interruption, the experimenter always chose a time when the subject was most engrossed in his work. As a rule this occurs when the subject has just discovered *how* the task is to be done but has not yet envisaged the ultimate result. Example: the subject is moulding the clay figure of a dog; he has reached the point where something four-legged and "dog-like" is appearing, but there is still grave danger that his "dog" will become a "cat" before he is through. The fact that most subjects were quite willing to talk while working served as one guide in selecting the correct moment for interrupting.

2. *Possible explanations.*—We turn now to the question of why interrupted tasks were recalled best. It might be suggested that in the case of interrupted tasks the "shock" of being disturbed served

to emphasize *these* tasks, thus enhancing the attention paid them, and in this way greatly improved their chances of preservation in memory. And therefore, according to this view, the interrupted tasks enjoyed a superior opportunity for retention because even during the work period special emphasis (strong affective colouring) had been given them.

To test this hypothesis it is necessary to change our procedure so that both interrupted and completed tasks will be given the same "shock"-value during the work period. This was done by interrupting some of the tasks and then re-presenting these for completion before the work period was over. According to the hypothesis, these interrupted-resumed tasks should be remembered as well as the genuinely interrupted ones since both will have had the same "shock" emphasis during the work period. Indeed they should be recalled best of all because, having been presented *twice* during the experiment, their repetition value will thus be double that of any other task.

The experiment was conducted with 12 new subjects; 18 tasks were used and of these 9 were interrupted and resumed, while 9 were interrupted but not resumed. Our results thoroughly disprove the hypothesis: memory for tasks interrupted but not resumed was 85 per cent better than for the interrupted-resumed (i.e.  $IR/(I-nR) = 1.85$ ). Moreover, of the 12 subjects only 1 recalled the interrupted-resumed tasks best. We conclude, therefore, that the memorial advantage enjoyed in our earlier experiments by the interrupted tasks cannot have been due to the emphasis they received from the interruption itself.

The experiment was repeated with 12 new subjects to whom 18 tasks were given. The subjects were divided into three groups, A, B, and C, of 4 each; the tasks were likewise divided into three groups of 6 each: (a) completed, (b) interrupted and not resumed, (c) interrupted-resumed. In this way each group of tasks was given to each subject in the manner *a* or *b* or *c* and hence our results refer to each task as completed, as interrupted and not resumed, and as interrupted-resumed. The findings were as follows. The average memory advantage of tasks which were interrupted and not resumed, *b*, over those which were interrupted-resumed, *c*, was 90 per cent (i.e.  $b/c = 1.9$ ); the superiority of interrupted and not resumed, *b*, over completed, *a*, was 94

per cent (i.e.  $b/a = 1.94$ ). It is apparent therefore that  $c$  (interrupted-resumed) and  $a$  (completed) had practically the *same* value. The validity of our earlier conclusion is thus substantiated.

But if our earlier results were not due to affective emphasis during the work period, perhaps the following hypothesis is more adequate: The subject thought that certain tasks were interrupted momentarily but would be resumed later during the experimental hour. In order to take up the work where it had been interrupted he therefore made a special effort to remember these tasks. If the hypothesis is correct, and if at the time of interrupting we assure the subject, "*This task will be resumed later*" then these tasks should be remembered better than those for which no such assurance is given. And conversely, if interruption is accompanied by the remark, "*You are not to work on this task any more*" then these tasks should be remembered less than the others.

Our results show, however, that the hypothesis is wrong. In the first case<sup>5</sup> ("This task will be resumed") the hypothesis would have predicted an even higher value for IR/CR than had been found in our earlier experiments. Instead the result was  $IR/CR = 1.7$  whereas in the earlier cases it had been 1.9. In the second instance<sup>6</sup> ("...will not be resumed") where, according to the hypothesis, there should be no memorial advantage enjoyed by the interrupted tasks, the results were  $IR/CR = 1.8$ , which is almost as great as the 1.9 of our earlier experiments. We conclude, therefore, that the earlier results were not due to the subject's believing that interrupted tasks would be re-presented some time later during the work period.

Since neither of the hypotheses is satisfactory we must look elsewhere for an explanation. The memorial advantage of uncompleted tasks lies not in any experience accompanying the interruption but rather in the forces existing at the time of recall. The relevant distinction is that between a state of completion and one of incompleteness, and we must therefore seek to discover the psychical difference between *completed and uncompleted tasks* as it exists at the moment of recall.

When the subject sets out to perform the operations required by one

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<sup>5</sup> Twelve subjects, 20 tasks; none was really resumed despite the promise to that effect.

<sup>6</sup> Twelve new subjects, 18 new tasks.

of these tasks there develops within him a quasi-need for completion of that task. This is like the occurrence of a tension system which tends towards resolution. *Completing* the task means resolving the tension system, or discharging the quasi-need. If a task is not completed, a state of tension remains and the quasi-need is unstilled. The memorial advantage enjoyed by interrupted tasks must be due to this continuation of the quasi-need.

The tension leading to gratification of a need can therefore be seen to operate not only towards completion of the task; it also improves the chances of later recall in cases where such completion has been obstructed. Hence recall serves as a sign indicating the existence of such a tension system. In consequence the improved recall-value of interrupted tasks depends not upon experiences occurring at the moment of interruption but upon the totality of forces prevailing at the time of recall. Naturally this totality includes other forces besides those given by the tasks themselves. The experimenter's instruction to recount the tasks certainly constitutes an important factor in this total situation. As a result of this request there arises in the subject a desire or quasi-need to recall *all* of the tasks. Dynamically expressed, the situation at the time of recall may be described as follows: A quasi-need to report all tasks has been established by the experimenter's request; in addition, however, there are quasi-needs leading to recall of the unfinished but not of the finished tasks. Just how strong the tension favouring recall of unfinished tasks is will depend upon the *relationship* between these two fundamental factors. If, in accordance with instructions to report *all* tasks, the desire to do this is overweening, the relative advantage enjoyed by unfinished tasks (IR) will be diminished and IR will approximately equal CR. On the other hand, if this desire is not excessively strong, the advantage enjoyed by IR will be determined almost entirely by the unresolved tensions of the interrupted tasks.

[(31-39): experimental evidence is reported which shows that the recall-value of unfinished tasks improves as desire to obey instruction ("report *all* tasks") sinks in importance. Since in the main experiment IR has a value nearly twice that of CR, it is evident that desire to report all tasks was as a rule much weaker than the tension systems of the unfinished tasks. (40-55): careful study of the tasks themselves reveals that the per cent of recall varies not so much with what an onlooker might consider "finished" or "unfinished" but rather with the subject's *own* feeling. The subject may *seem* to have finished a task but may himself consider the result

inadequate and the task far from completed and vice versa.

Comparing the introspective reports with other data collected from such a subject one finds that tasks of this sort often enjoy as much advantage in memory as those actually interrupted by the experimenter. As regards tasks with clear-cut goals and those that could conceivably go on *indefinitely*, a decided difference in result was found. Interruption of the latter plays a far weaker role in the matter of tension and memory than when the former are interrupted.

Example: if the task is one of marking X's on a sheet of paper this is presumably an endless undertaking and therefore interruption means not so much leaving the task unfinished as merely calling a halt. Hence there was no marked difference in memory advantage in this kind of task.]

3. *Some factors governing recall.*—(a) Time of interruption.

What part does the place of interruption play? If we compare the results of 38 tasks interrupted in the middle or towards the end, with 45 interrupted soon after the task was begun, we find that whereas the former were 90 per cent, the latter were but 65 per cent better remembered than completed tasks had been. It will be recalled (p. 20) that the experimenter intervened when the subject seemed most engrossed in his task. Records of the experiment show that this was predominantly toward the end of work. Why is it that absorption and (hence) greater memory advantage of the task comes late rather than early? As everyone knows it is far more disturbing to be interrupted just before finishing a letter than when one has only begun. The desire to complete a task may at first have been only a quasi-need; later, through "losing one's self in the task", a genuine need arises. The goal which at the start perhaps had little or no valence<sup>7</sup> now possesses a *positive* drawing power.

(b) "Ambitious" subject. Since the subjects frequently commented upon their work, the nature of the task, etc., it was relatively easy to distinguish those who were motivated primarily by a desire to succeed in what they did. Exclamations such as "What is the matter with me... !" or "I wouldn't have believed I could be so stupid", marked the "ambitious" subjects quite clearly. The recall advantage enjoyed by unfinished tasks with these subjects was 175 per cent as against the general average of 90. It appears that although mere intention gave no particular impetus for recall (p. 26 f.), the extent to which a subject was immersed in his work

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<sup>7</sup> Cf. *Selection 24*, p 28.



*did* make a decided difference. In behaviour of the latter type, to solve the problem has become a genuine need whereas in many cases it could not be considered more than a quasi-need related to nothing more fundamental in the person himself than just what the experimental procedure sets forth. Again, just as the *recall* advantage of unfinished tasks was especially marked with these subjects, it was also observed that they *forgot* completed tasks much more readily than did the average subject.

(c) The question of attitude. The results of our main experiment will not occur in cases where the subjects feel themselves at the mercy of the experimental situation. A group of 10 high school pupils, for example, was sent by their teacher "to visit the psychological laboratory". While highly interested in being shown a psychological experiment, they took no interest in the tasks themselves but submitted to them only as a kind of school discipline. They behaved like soldiers under command, not like individual persons. They admitted afterward that they had repressed their own wishes and had merely done as they were told. When asked whether he had wanted to continue the interrupted tasks one of them answered: "I did not care... it would have been entirely different if I had had the task at home, but here I simply did what you told me to do." With these subjects there was no memorial advantage of unfinished tasks ( $IR/CR = 1.03$ ).

Nor was the attitude of another group, although very different in character, any more conducive to repeating the results of our main experiment. This group of 5 subjects was primarily interested in learning what went on in a psychological laboratory. They constantly sought to ferret out the "meaning" of the experiment and looked upon the individual tasks as utterly incidental. Indeed they considered the tasks a mere cloak designed to conceal some recondite significance which they had not yet uncovered. Performance of the tasks was therefore itself dominated by a *single* need: to unmask the secret which lay behind them. For these subjects the separate tasks were integrated parts of a single whole whose real nature they were so anxious to fathom. They did not look upon each task as a separate entity, and, therefore, to complete a task or to leave it unfinished was for them but a phase in another total process: either would mean proceeding another step towards completion of the whole series. Hence with these subjects there were few if any distinct tension systems corresponding to the several

tasks, but only a general tension relative to the experiment as a whole. The results were  $IR/CR = 1.12$ .

Evidently to have  $IR/CR = 1$ , a separate state of tension must be established for each task. If the boundaries between these systems are weakened, no more memorial advantage should accrue to interrupted tasks than to those which have been completed. In addition to the evidence contained in the two preceding examples we tested this hypothesis again with 8 new subjects by telling them *in advance* all the tasks that were to be solved during the hour. In this case  $IR/CR = 0.97$ —which signifies no difference between interrupted and completed tasks.

(d) Fatigue. It was found in the course of these experiments that with fatigued subjects memorial advantage lay on the side not of the unfinished but of the *completed* tasks. To study this phenomenon somewhat more closely, two groups of subjects were given a special series of tests as follows. The 7 members of Group I performed the tasks while tired and were questioned after 13-15 hours rest. The 8 subjects in Group II did the tasks when fresh and were questioned that evening after a hard day's work. The results show that with Group I (tired-fresh) the *completed tasks* were remembered best ( $IR/CR = 0.61$ ) while with Group II (fresh-tired) memory for both kinds was practically the same ( $IR/CR = 1.06$ ). If the tension system of an unfinished task is to persist until the time of recall, it must have a sufficient "firmness" ["*Festigkeit*"] in order to withstand self-dissolution. In a state of fatigue the subject is too "slack", the medium is too "loose". The tension cannot persist.<sup>8</sup> And this is why, at the time of interruption, no separate, persistent tension system can be formed for the individual tasks. It is interesting to note, however, that on the other hand, memory for completed tasks is not worse but *better* than in a normal state. To explain this we must now introduce a matter of essential importance for our entire experiment. Finished tasks differ from those which have been interrupted not only because with the former no quasi-need is present, but also because finished tasks present

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<sup>8</sup> A state of tension in any loosened, relatively fluid medium is very difficult to maintain.

completed, stable forms in contrast to the unclosed, somewhat more indefinite, instable character of uncompleted processes. If this is so, then the results of our main experiment attain an added importance. They show, namely, that recall-value is enhanced far more by a dynamic state of tension of the relevant quasi-need than by the closure of stable forms. Likewise we can explain our results with tired subjects. In a condition of fatigue unstable systems (being, as they are, under a tension pressure) cannot maintain themselves. On the other hand, systems which lack this tension pressure (viz. those of the finished tasks) will, if they already possess a stable, closed form, persist even though the subject be in a state of fatigue. (e) Delayed recall. It may be supposed that even without fatigue the separating walls of tension systems such as these will in time become weakened. To test the influence exerted by an interval of time between performance and recall, certain groups of subjects were not questioned until the following day. The memorial advantage of unfinished tasks declined in these cases to a bare 14 per cent. Eight of these people were *also* used as subjects (some of them 6 months before and some 6 months after the "delayed recall" experiment) where immediate recall was requested. With these 8 subjects the average recall-value of unfinished tasks *reported on the following day* was 13 per cent ( $IR/CR = 1.13$ ) while for the *immediate* report it was 110 per cent ( $IR/CR = 2.1$ ). Another group (17 subjects) was asked to report immediately after the last task (result: 100 per cent advantage favouring interrupted work) and *again* on the following day (result: only 40 per cent advantage of unfinished work).

Nevertheless diminution of tension is not due to time as such, but depends rather upon the significant events which take place *during* the interval. If our earlier considerations are correct, a radical change of situation and special modifications of pressure within the psychical field should greatly accelerate equalization of the individual tension systems. We undertook to test this by creating decided changes of situation immediately after performance of the tasks themselves, and before recall was asked for. We found in this way that a delay of but 10-30 minutes often sufficed to eliminate the memorial advantage usually enjoyed by unfinished tasks. An example of this is the following. Immediately after his last task one subject 'was called to the telephone, being told that Mr. X had

just called. This announcement was particularly exciting since an important message from X was expected. But there was no one on the line ; he called out "Hello! Hello!" several times. There was no response. Meanwhile the experimenter and messenger who had followed, now began laughing. Soon the dupe of the joke laughed also and continued laughing for some time. Thereupon a report of which tasks had been performed in the experiment was demanded.

"What? Oh yes. Why I don't know at all; it's all a muddle now. I have forgotten the whole thing."

It was only with difficulty that an answer could be obtained.

Result: the finished tasks were recalled best. Six subjects were tested in this way and in each case the *finished* tasks were remembered better than the unfinished ones.

In two other groups the intermission between tasks and report was of two different kinds. Group I (4 subjects) was interrupted but in a manner permitting an easy return to the experimental situation. For example a discussion about some recent book would be introduced between the last task and a request for the report. Here *unfinished* tasks were recalled 50 per cent better than the completed ones. Group II (3 subjects) was distracted during the intermission in a way calculated to make return to the experimental situation much less easy. Suppose the subject was a colleague also doing experimental work in the same laboratory. It would be agreed that immediately after A's experiment (i.e. the one reported here) in which B was subject, A would perform as subject for B. As soon (10-15 min.) as A saw that B was thoroughly absorbed in the *new* relationship of experimenter-subject, the report was demanded. In these cases *completed* tasks were recalled best.

(f) Repressed tasks. It often occurred that a subject would be given a task which he "could not do". He felt that the task was beyond his capacity. Should this task be interrupted, such a subject frequently assumed that the experimenter had detected his "inferiority" and had withdrawn the task for that reason. Such tasks were usually forgotten when the report was made. An example is the following. Although most boys were poor at knitting, they nevertheless remembered this task (if interrupted) very well. Girls, on the other hand, who were inept at this task very often forgot to mention it in their report even though it had been interrupted. We should not assume, however, that tasks which were (but "should" not have been) poorly performed left no tension system when interrupted. Instead we must think of them as subject to

the special forces of *repression* which caused their recall to be unusually difficult.

4. *Individual differences*.—The range of values obtained in the main experiment extended from 500 to -25 per cent memorial advantage for unfinished tasks. The question naturally arises: Was this spread due to chance or did it depend upon genuine individual differences between the subjects themselves? To study this more closely the experiment was repeated (new tasks being used) with 14 subjects after an interval of 3-6 months. The correlation between results from the earlier and later experiments was 0.9—which, as an answer to our question, clearly shows that the spread of results in the main experiment was due almost entirely to consistent individual differences between the persons acting as subjects.<sup>9</sup>

Further insight into the matter of individual differences may be gotten by comparing the results obtained from children (average memorial advantage of unfinished tasks 150 per cent) with those of the adult subjects (average 90 per cent). It was characteristic of children, for example, that they sometimes recalled *only* the unfinished tasks. They took the experiment much more seriously than did the adults. By comparison with older subjects, the children's attitude towards these tasks was far more *natural*. In consequence, each task assumed for them decided lineaments of its own. If an adult could not recall the name of a task he would perhaps content himself with some such designation as, "Well, and then there was that folding task." Not so with the child. If he could not recall its name, he would reproduce the task in pantomime, describing it in detail as he proceeded. And the tone of voice was also noticeably different. Never did any child speak in a "superior" manner about the tasks. One could see that with children there had been a genuine *need* to complete the tasks given them and not infrequently they would beg to continue the interrupted tasks even two or three days after the experiment was over.

This attitude of earnest concern for the work given them was not, however, wholly confined to children. Adult subjects who let themselves go were also to be found among the members of our principal group. Comparing the results of these subjects with those of the very staid adults one finds that whereas with the latter unfinished tasks had a memorial advantage of only 10 per cent

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<sup>9</sup> This does not assert, of course, that the percentage of memorial advantage would remain unchanged for the same subjects under varying experimental conditions.

(IR/CR = 1.1), its value for the "child-like" subjects was 190 per cent (IR/CR = 2.9).

*Summary.*—The experiments reported here have shown that *unfinished* tasks are remembered approximately twice as well as completed ones. Neither affective colouring nor other special characteristics of the tasks themselves will account for this. Nor will reference to the "shock"-effect accompanying interruption provide grounds for an explanation of this finding. Instead the recall-value of unfinished tasks is high because at the time of report there still exists an unsatisfied quasi-need.

This quasi-need corresponds to a state of tension whose expression may be seen not only in desire to finish the interrupted work but also in memorial prominence as regards that work. Prominence of the quasi-need to recall unfinished tasks depends upon the intensity and structure of the tension system, and also upon the strength and kind of quasi-need set up by the experimenter's instructions to report all tasks. If the subject considers the request a test of his memory, interrupted tasks will enjoy no particular recall-value. If he makes a free and untrammelled report, these tasks will be far better recalled than the others.

A quasi-need persists if the task has not been completed *to the subject's own* satisfaction regardless of whether this is equivalent to what may seem from another's inspection to constitute "finished" or "unfinished". Tasks with whose solution the subject is not content will function in his memory as "unfinished" even though the experimenter may have classified them as completed tasks, and vice versa.

With ambitious subjects inner spheres of the person himself are more involved than is ordinarily the case. In consequence the recall-value of interrupted tasks is higher than the general average. It is essential for the memorial advantage of unfinished tasks that the tension systems be sufficiently isolated from one another. When the individual tasks lack separate lineaments for the subject, there develops only one large tension system in place of several. This was the case with subjects who had been told beforehand what the tasks were to be; it held also for others who considered the tasks merely incidental to some hidden meaning lying behind them. When fatigue diminishes firmness in the total field, the development and maintenance of tension systems is greatly impaired.

Excitement or some radical change of situation will also weaken or destroy the walls separating these systems.

The strength with which such tension systems arise and persist evidently varies greatly between different individuals but remains very nearly constant with the same individual. Strong needs, impatience to gratify them, a child-like and natural approach—the more there is of these, the more will unfinished tasks enjoy in memory a special advantage over those which have been completed.