FIVE STUDIES IN ACTION THEORY

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In the Faculty of Arts and Science at the University of Linköping, Sweden, research and postgraduate research training are conducted within broad problem areas — themes — instead of traditional academic disciplines. There are four themes: Health and Society, Communication Studies, Technology and Social Change, and Water in Environment and Society. Within each theme research is pursued through cooperation between scholars with different scientific backgrounds. Research activity commenced in 1980 and after a period of construction of 6—7 years each theme will have an establishment of 20—25 research posts — professors, readers etc. — and ca. 40 research students.

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FIVE STUDIES IN ACTION THEORY

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FOREWORD

The essays presented in this collection were written over a long period. The first two: "On the Classification of Verbs and Actions" and "On von Wright's Theory of Action" constitute steps in my preparation for the book Events, Actions, and Ordinary Language, Lund 1977. Much of the contents of the former paper was carried over to the book, whereas the analyses in the latter paper were more or less completely left out. These papers have not been published before.

"On Various Forms of Interaction" is a development of some ideas in Events, Actions, and Ordinary Language. This paper was previously published in Swedish in Henschen-Dahlqvist A-M ed. Filosofiska smulor, Festskrift tillägnad Konrad Marc-Wogau på hans 75-årsdag, Uppsala 1977.

"Action-Explanations Reconsidered" was written in 1981 and has not been previously published. It is a short presentation of a basic idea in my dissertation Explanation of Human Actions, Uppsala 1974, as well as a commentary on some criticisms that could be (and partly have been) directed against it.

"On Not Being Able To Act", finally, is a slightly modified version of a paper previously published in Pauli T. ed <320311>, Philosophical essays dedicated to Lennart Åqvist on his fiftieth birthday, Uppsala 1982. The analysis sketched in this paper has been more fully developed in my Disabilities and Their Classification, Linköping 1983.

I wish to thank Professor Per Linell for his generosity to include this work in the University of Linköping Studies in Communication.

Linköping in March 1984

Lennart Nordenfelt
ON THE CLASSIFICATION OF VERBS AND ACTIONS

Introduction

In this paper I shall deal with and develop three attempts to classify the ordinary-language verb vocabulary. Although the distinctions made by the three authors are primarily linguistic, they have obvious bearings on the theory of events in general and, hence, also on the theory of action in particular.

I shall first discuss Gilbert Ryle's suggestive remarks in his book "The Concept of Mind" about different types of verbs, and then proceed to two more systematic treatments of the same topic, which are quite similar to one another, viz. those by Anthony Kenny and Zeno Vendler. I shall myself, in that context, adopt a modified version of the Kenny-Vendlerian system. Finally, I shall point out that the system does not just classify verbs, but process-, event-, and state-terms in general, and I shall explore some consequences of that observation.

1. Gilbert Ryle's version

1.1 A presentation

One of the main arguments in Ryle's treatment of the mind rests on his alleged discovery of the logical force of certain active verbs, which he labels as achievement-verbs.

Ryle maintains that it has been taken for granted that these verbs refer to processes or activities, while, in fact, they indicate successes or sudden climaxes. This is why, in the traditional theory of Mind, things like 'inferring', 'seeing', 'hearing', 'proving', etc., have been mistakenly described as mental activities of some kind.
The reason why we can't describe 'drawing a conclusion' as a slowish or quickish passage is not that it is a 'Hey, presto' passage, but that it is not a passage at all.

The traditional assumption that inference-verbs denote processes or operations required its makers to say, first, that the processes or operations were of lightning rapidity and, second, that their occurrence was the impenetrable secret of their author.¹

There is, according to Ryle, an important distinction to be made between

a) those verbs which denote the process or activity itself, viz. the taskverbs

and

b) those verbs which signify 1) the fact that certain acts have had some results or

2) the fact that some state of affairs obtains over and above that which consists in the performance of the subservient task-activity, viz. the achievement-verbs.

Some verbs of this latter class signify more or less sudden climaxes (got-it-verbs), others signify more or less protracted proceedings (keep-it-verbs.) Ryle makes some further observations about the verbs thus distinguished:

a. Achievements or failures are not occurrences of the right type to be objects of what is often, if misleadingly, called 'immediate awareness'.

b. It is always significant, though not, of course, always true, to ascribe a success partly or wholly to luck.

c. Adverbs proper to task-verbs are not in general proper to achievement verbs, in particular heed-adverbs like 'carefully, studiously, vigilantly, conscientiously and pertinaciously' cannot be used to qualify the latter.²

As examples of task-verbs Ryle mentions, among others, 'kicking, treating, searching, listening and running', and as examples of achievement-verbs 'scoring, healing, finding, holding fast, hearing and winning'.
In the following I shall scrutinize this distinction of Ryle's. I shall divide the discussion into two parts, I. of the 'got-it-verbs' and II. of the 'keep-it-verbs'.

I.a What fact, over and above the task, is signified by Ryle's achievement-verbs?

Ryle seems to switch back and forth between a stronger and a weaker thesis when he discusses the denotation of achievement-verbs. According to the stronger thesis, the achievement-verbs denote the fact that certain acts have had certain results; according to the weaker thesis, they denote just the fact that some state of affairs obtains over and above the task, and the nature of this state of affairs is not specified.

Let us match these statements against Ryle's examples:

ex. 1. For a runner to win, not only must he run but also his rivals must be at the tape later than he.

ex. 2. For a doctor to effect a cure, his patient must both be treated and be well again.

ex. 3. For the searcher to find the thimble, there must be a thimble in the place he indicates at the moment he indicates it.

ex. 4. For the mathematician to prove a theorem, the theorem must be true and follow from the premises from which he tries to show that it follows.3

The nature of the facts mentioned in these examples is not always transparent. It is obvious, however, that they are not all results of tasks. This is most clearly seen in ex. 3. The thimble's being in a certain place is not in any sense a result of someone's trying to find it. Hence, in conjunction, these statements don't seem to support more than Ryle's weaker thesis, i.e. that the achievement-verbs denote just the fact that some state of affairs obtains over and above the task.
This is, however, not a significant thesis. It is not sufficient to make a clear distinction between task-verbs and achievement-verbs because, clearly, many task-verbs presuppose or signify one or more states of affairs over and above the performance of the task itself. For it to be significantly said that a doctor is treating a patient, not only must he examine the patient and give him medicine, the person must also be ill. For it to be significantly said that a soldier is fighting, not only must he fight, but there must also be other people fighting.

The distinction seems to rest on Ryle's stronger thesis, viz. that achievement-verbs denote the fact that certain acts have had certain results. Clearly Ryle's examples can be changed to make them fit this thesis. Let me just improve on example 3: For the searcher to find a thimble, there must be a perceptual relationship between him and the thimble in the place he indicates at the moment he indicates it.

Certainly 'finding' indicates the result of searching, which consists of the fact that there is a perceptual relationship between an agent and an object. Hence, what makes 'finding' an achievement-verb is not that it indicates the point in space of an entity, but that it tells us that the task is completed when a perceptual relationship is established between the searcher and the entity.

There are no analogous facts signified by either 'treating' or 'fighting', in that neither of them indicate the occurrence of a state of affairs which is the result of any task. Hence, they are themselves task-verbs.

Is it, however, true that achievement-verbs in general refer only to the occurrence of a resulting state of affairs?

The contention that it is improper to apply the achievement-verbs to the processes or activities themselves is certainly important for Ryle's dicta on the theory of Mind. There are, however, facts which throw doubt on that contention.
First of all, Ryle himself softens his point by admitting that the achievement-verbs are often "borrowed" to refer to the activities themselves if the probability of success is high. One may say, e.g., that 'A is winning the race' meaning, by that, that A is running far ahead of his opponents. Secondly, with some of the achievement-verbs mentioned in Ryle's list of examples, e.g. 'repairing' and 'conquering', there does not seem to be anything improper or secondary in letting them refer to an activity. It is obviously all right to say of a person who is, e.g., engaged in changing the tyres of his bicycle, that he is repairing his bicycle. To have the right to make such a statement we do not need to know that the probability of success is high, we only need to know that the agent has the intention of creating a state of affairs in which the bicycle is again functional.

An objection to this kind of criticism may be that 'repairing' and 'conquering' are unfavourable examples as they are, in a sense, ambiguous or, perhaps more adequately put, aspect-ambivalent. There is an imperfect use of these verbs, in which they refer to activities, and there is a perfect use in which they refer to successes.

This point is perhaps important, but, in my opinion it does not solve Ryle's difficulties. It is rather a serious threat to his main philosophical doctrine.

First, we must consider what the general consequences of the objection will be. As far as I can see, it must be that, at least, for all action-verbs the task-achievement distinction will boil down to be co-extensive with the imperfect-perfect distinction. But the imperfect-perfect distinction cuts through both of Rule's categories. There are perfect uses of Ryle's task-verbs as well as imperfect uses of his achievement-verbs. Hence, if we take the point ad notam, the whole attempt to distinguish between verbs as lexical items will have to be abandoned. An immediate consequence of this is that the above-mentioned part of Ryle's theory of Mind loses much of its foundations. What will now prevent us from saying that 'inferring', 'deducing' and the like refer to mental activities in their imperfect uses?
But, to stop the analysis at this point would be to do injustice to Ryle's insights about action-verbs. There is an important distinction to be made between the lexical items as such, and this distinction is, on the whole, well illustrated by his examples, and is alluded to in his point about results of tasks, discussed above.

All the examples of 'got-it-verbs' in Ryle's list have the feature in common that they indicate a terminating point, i.e. that which counts as the completion of the activity referred to. By this virtue they can, normally, also be used to refer to the very moment of reaching this completed state. The concept of 'repairing' tells us, e.g. what state of affairs counts as the completion of the activity of repairing in a sense in which the concept of running does not tell us what counts as the completion of the activity of running.

II. To include the 'keep-it-verbs', or the protracted proceeding-verbs, in the achievement-verb group seems to me, however, to be a simple mistake. I suggest that the protracted proceeding-verbs should be divided into two categories, one to be subsumed under the task-verbs, the other to form a new category which I, in analogy with Vendler and Kenny call 'state-verbs'.

Take the potential task-verbs first, e.g. 'keeping a secret' and 'keeping the enemy at bay'. They clearly don't have the characteristics pointed out above; nor do they signify a state of affairs that counts as the completion of a certain task. There is no fact conceptually required in 'keeping the secret' which tells us when the keeping of the secret is completed. Hence, it is misleading to say that it signifies the result of a subservient task. The keeping of the secret doesn't clearly have a subservient task. It is, itself; a task. What could be subservient to 'keeping the secret'? One might say 'trying to keep the secret', but that is no good as one can put 'try' in front of practically any task-verb significantly. An untrained nurse can try to treat a patient, a crippled man can try to run, etc.

Moreover, the type of adverbs alleged not to be properly used with achievement-verbs are clearly applicable to the protracted pro-
ceeding-verbs. One can keep the enemy at bay successfully, in vain, etc., just as one can run successfully, in vain, etc.

The mental proceeding-verbs on the other hand, like 'seeing' and 'knowing', form another category. Ryle is right in saying that they can't as a rule be qualified by the adverbs in his list (and this is one thing that distinguishes them from the keeping-proceeding­verbs), but he is too rash when he says that this is so, solely because of their resemblance to 'finding' and 'winning'.

In fact, Vendler has shown that there are two uses of these terms; one instantaneous with the sense 'to get to see' and 'get to know'. As such, they may be regarded as Rylean achievement-verbs. But the other and more usual sense is being in the state of seeing' and 'being in the state of knowing', like in the locutions 'I saw him for a while' and 'I have smelt the odour of the flower all day' and 'I have always known that'.

This must be the sense alluded to by Ryle when he calls these verbs protracted proceeding-verbs. But it is a sense which is not captured by Ryle's distinctions. 'Seeing' and 'knowing', in this sense, do not denote the completion of any processes or activities. Due to this fact, they behave syntactically (as we shall see more clearly later on), more like task-verbs.

But, it would, clearly, also be misleading to identify them with the task-verbs. They don't signify what we normally call processes or activities.

1.2 Notes on the alleged correspondence between task- and achievement-verbs

Ryle frequently talks about corresponding task- and achievement-verbs and he also mentions a few verb-pairs, in which one member is supposed to correspond to the other: 'kicking-scoring', 'treating-healing', 'clutching-holding fast', 'listening-hearing' and 'running-winning'. The task of running is supposed to correspond to the
achievement of winning, just as the task of treating allegedly corresponds to the achievement of healing. Put in other words, the contention is that the subservient task of the achievement of healing is the task of treating.

A quick glance at these pairs reveals, however, that the correspondence is of at least two different kinds. In some cases it is of a strong conceptual kind as in the pairs 'treating-healing' and 'searching-finding' and on the other pole of a loose factual kind as in the pair 'running-winning'.

The relationship between 'treating' and 'healing' is almost a one-to-one relationship. To treat a person means to try to heal him. To search for an object means to try to find it. To treat successfully means to heal. To search successfully means to find.

But, the case is obviously different with 'running' and '-winning'. To run does not mean to try to win, and to run successfully does not mean to win. One can win by doing many different things, depending on what competition one happens to take part in. But, even granted that the competition is a running-race, 'to run successfully' does not necessarily mean or imply that one wins the race. Likewise, by taking part in a race, i.e., by running, one does not necessarily try to win. The ambitions clearly vary among runners. In short, the relationship between 'running' and 'winning' is much looser than the relationship between 'treating' and 'healing'. There is a many-one relationship between a large set of task-verbs and 'winning'.

This fact can be illustrated in a slightly different way. 'Winning' like most achievement-verbs, is on a high level of abstraction. To win means to be the first in any competition. Hence, there are many ways in which one can win, just as there are many ways in which one can arrive at a place, discover a truth, or kill a man. All of these various tasks leading up to winning are, obviously, on a lower level of abstraction than 'winning' itself. But, the tasks 'treating' and 'searching' happen to be on the same level of abstraction as their alleged achievement-correspondents. It is not merely that one can heal and find in many ways, one can also treat and search in equally
as many ways, e.g., by giving massage, dosing with pills or applying radiotherapy, and respectively, looking behind cupboards, advertising, etc.

Is it then the case that for every task-verb there is at least one achievement-correspondent, and vice versa?

As we have already found, the class of verbs does not consist exclusively of neat pairs like 'treating-healing' and 'searching-finding'. Hence, if we mean by correspondence conceptual correspondence, the answer is, obviously, no. But, it is quite likely that all thinkable tasks can function as subservient, in the loose sense, to at least one achievement; especially if we choose achievement-verbs of a very high level of abstraction. And, on the other hand, it seems as if all achievements can at least have some task as subservient.

1.3 Summary

Instead of Ryle's two-fold distinction between task-verbs and achievement-verbs, I have suggested a three-fold one introducing the category of state-verbs. In this latter category, I have included some of Ryle's achievement-verbs, viz. the mental proceeding-verbs, like 'seeing' and 'knowing'. The state-verbs signify neither successes or sudden climaxes, nor activities or processes, but rather what we would, in ordinary language, call states. The distinctive feature of achievement-verbs is, in my interpretation, that they, as opposed to task-verbs, indicate the terminating point of the activity in question. This fact does not, however, prevent achievement-verbs from frequently being used to refer to the same reality as the subservient task-verbs.

As Ryle's discussion mainly concerns action-verbs, or verbs which can superficially be taken to be action-verbs, it can be worth pointing out that these distinctions, as conceived by me, cover the whole field of active verbs. Finally, I have looked closer into the notion of correspondence between achievement-verbs and task-verbs and have pointed out an ambiguity of that notion.
2. Anthony Kenny's and Zeno Vendler's versions

2.1 A presentation

Anthony Kenny and Zeno Vendler have created two rather similar systems for the classification of verbs, partly along the lines sketched by Ryle. Kenny makes his analysis, like Ryle, in the context of a philosophy of Mind and takes some Aristotelian discoveries as his starting-point. Vendler, on the other hand, makes his analysis, more explicitly, in a purely linguistic context.

Kenny recognized three categories of verbs, viz. what he calls activity-verbs, performance-verbs, and state-verbs. His criteria for distinguishing between them are the following:

1.a. Activity-verbs have continuous tense. One attests 'A is φ-ing' when φ is an activity verb.

b. 'A is φ-ing' implies 'A has φ-ed'

2.a. Performance-verbs have continuous tense. One attests 'A is φ-ing' also when A is a performance-verb.

b. 'A is φ-ing' implies 'A has not φ-ed'

As examples of activity-verbs Kenny recognizes, e.g., 'weeping', 'laughing', and 'talking'. One attests 'A is weeping' and 'A is weeping' implies that A has wept for a while.

Among the performance-verbs are 'discovering', 'killing', and 'growing-up'. One attests 'A is discovering a truth' and 'A is discovering a truth' implies that A has not yet discovered it.

Among the state-verbs, finally, we find, e.g., 'knowing', 'understanding', and 'loving'. One does not attest the locution 'A is knowing English'.
Kenny makes several observations about the classes thus conceived. I shall list below only what I take to be the most important ones, including the points I intend to criticize.

a. Activities go on for a time, performances take time, states last for a time.  

b. Performances come to a definite end and are finished. Performances are brought to an end by states. Performances are specified by their ends. Only performances can be complete or incomplete.

c. All performance-verbs have imperatives. No static verb has an imperative. Performances unlike states have purposes. In these respects some activities are like states, others like performances.

d. For states it holds true that 'A has $\phi$-ed' implies 'A $\phi$-es'. For activities, however, it does not hold true that 'A has $\phi$-ed' implies 'A is $\phi$-ing'.

Vendler has a slightly richer classification in his article "Verbs and Times". He distinguishes between four categories of verbs: activity-verbs, accomplishment-verbs, achievement-verbs, and state-verbs. His criteria are the following:

1.a. Activity-verbs have continuous tense.
   b. 'A was $\phi$-ing at time t' means that t is on a time-stretch throughout which A was $\phi$-ing.

2.a. Accomplishment-verbs have continuous tense.
   b. 'A was $\phi$-ing at time t' means that t is on a time-stretch in which A $\phi$-ed.

3.a. Achievement-verbs lack continuous sense.
   b. 'A $\phi$-ed between t1 and t2' means that the time-instant at which A $\phi$-ed is between t1 and t2.
   b. 'A φ-ed from t1 to t2 means that at any instant between t1 and t2 A φ-ed.10

Examples: 'A was weeping at time t' means that t is on a timestretch throughout which A was weeping. 'A was building a house at time t' means that t is on a time-stretch in which A built a house. 'A discovered a truth between t1 and t2' means that the time-instant at which A discovered a truth is between t1 and t2. 'A knew English from t1 to t2' means that at any instant between t1 and t2 A knew English.

2.2 Analysis and criticism

Before I proceed to a criticism of these systems I would like to interrelate them and look into their similarities and differences. The resemblance between Kenny's and Vendler's systems is obvious. Verbs tested on Kenny's activity-test come out as activity-verbs also in Vendler's system, and their state-categories include the same verbs. The important novelty in Vendler's system, however, is that he divides into two categories what Kenny puts into one, viz. Kenny's performance-verbs are split up into accomplishment-verbs and achievement-verbs. In Kenny's performance category we can find both of such things as 'building a house' and 'finding'. But, with Vendler, the former will turn up in the accomplishment category and the latter in the achievement category. Hence, Vendler wants to distinguish such task-completions as can be said to go on for a while from the sudden climaxes or dénouements. He tries to clarify that point by the following remark: "When I say that it took me an hour to write a letter, I imply that the writing of the letter went on during that hour. But, even if one says that it took him three hours to reach the summit, one does not mean that the reaching of the summit went on during those hours".11

The relationship between Kenny's and Vendler's systems can then rather easily be illustrated in the following schema:
The original Rylean system clearly differs from this. His task-achievement distinction corresponds roughly to a division in the Kenny-Vendlerian system that goes between activity-verbs and other verbs, as Ryle also included state-verbs among his achievement-verbs. But, this is just an approximation, as we also find keep-it verbs among Ryle's achievement verbs, which come out as activity-verbs with Vendler and Kenny.

Ryle, like Kenny, obviously didn't recognize an accomplishment-achievement distinction. This is understandably so with Ryle, as the accomplishment category to some extent blurs the clear-cut division he wanted to point out between tasks and achievements. No one would dream of calling 'building a house' a sudden climax or dénouement.

(Incidentally, Vendler's accomplishment-verbs also pass the activity test. 'A was building a house at time t' means that t is on a time-stretch throughout which A was building a house.)

The relationship between the original Rylean schema and the other two can be illustrated in the following way:

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<th>KENNY</th>
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<td>activity</td>
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<td>performance</td>
<td>{accomplishment, achievement}</td>
</tr>
<tr>
<td>state</td>
<td>state</td>
</tr>
</tbody>
</table>
In the preceding passage about Ryle, I have already given arguments for rejecting the Rylean view in favor of something like Kenny's standpoint. I separated Ryle's protracted proceeding-verbs, introduced a state category for the perception- and emotion-verbs and subsumed some of the other keep-it verbs under the task-category.

But, it is important that I could do that, largely, by using Ryle's own criteria. His own observations called for a readjustment of his distinctions in a way that I have sketched.

I shall now look more closely into the Kenny-Vendlerian system and try to reveal its shortcomings. The three main questions to be considered are the following:

A. Are the performance-verbs in general action-verbs, as Kenny suggests?

B. Do the linguistic criteria that separate activity-verbs from state-verbs, in fact, also mark a philosophically important distinction?
C. How clearly cut is the Vendlerian distinction between accomplishment-verbs and achievement-verbs?

I think that I have already argued enough for the existence of an activity-performance distinction (in Ryle's terminology: a task-achievement distinction). There are, clearly, two types of natural concepts for describing change in the world; one type focuses attention on the actual process and does not tell us what the process leads up to; the other type more or less neglects the process (although we have pointed out that it is often used to refer to it) and instead focuses attention on its result or end-state. When materialized in language, these two kinds of concepts give rise to the different kinds of syntactical phenomena that have been detected by the authors under debate.

A. Kenny states in passage c, cited above: "Performance-verbs have imperatives. No static verb has an imperative. Performances, unlike states, have purposes. In these respects, some activities are like states, others like performances." Part of what Kenny says here is that, whereas all performances are actions, only some activities are.

This passage, however, is incorrect and misleading. Not all performance-verbs have imperatives. Not all performances have purposes. (Incidentally these two facts are logically related.) Hence, there is, in this respect, no difference between activity-verbs and performance-verbs, in principle. In short, there are action-verbs and non-action-verbs among them both. 'Raining' comes out as an activity-verb in Kenny's system, but obviously, no person may rain. Hence, 'raining' does not have an imperative and is not an action-verb. 'Growing-up' is a performance-verb and although human beings can grow up, they can not be told to do so. Hence, growing up does not have an imperative, and, likewise is not an action-verb. Examples of action-verbs in both categories are numerous, take e.g., 'running' and 'killing', the former an activity-verb, and the latter a performance-verb.

But, Kenny is clearly right in saying that no static verb has an imperative. We shall return to that observation in a later passage.
B. Besides the common criterion which distinguishes activity-verbs from state-verbs, viz. that the former have continuous tense while the latter do not, both authors suggest at least one criterion each to separate the two. I will show below that these latter criteria are erroneous which means that we are anyhow, in the end, left with just the continuous tense criterion.

This situation calls for a deeper analysis of the two categories. What other syntactical or semantical considerations can lend support to the distinction? If there are none, may it not be so that the existence of continuous tense is just an idiosyncratic feature of the English language, and of no importance to philosophy?

Kenny claims in passage d, cited above: "For states it holds true that 'A has φ-ed' implies 'A φ-es' and he exemplifies: 'I have loved her for seven years' implies that I still love her. 'I have been afraid of this all day' implies that I am still afraid". An analogous implication is alleged, however, not to hold true among activities. 'I have acted foolishly' does not imply that I am still acting foolishly.

His examples are, however, misleading and the general claim is erroneous. The implication between the perfect and the present tense state-verbs is, in fact, dependent upon the time-clause in his example. Simply, 'I have loved her' hardly implies that I still love her. And the statement 'I have loved forty women' really does not imply that I still love forty women.

This point has a general validity. If we don't supplement a perfect-tensed state-verb with a time-clause of the kind 'for such and such a time' it gives rather the impression that the state of affairs has ceased to exist. (This is not to deny the fact that the perfect is in another sense a present tense. Perfect as opposed to imperfect is used when the fact referred to has some interest or relevance to the present, but it need not still be the case in the present.)

Moreover, the activity-example is misleading. In the first place, 'act' is an unhappy verb to choose. It is what I shall later call
category-ambivalent. In the second place, Kenny does not give any reason as to why he shifts from non-continuous tense in the perfect to continuous tense in the present.

If we keep continuous tense in both locutions and also add a time-clause to the premise, we get, in fact, a result quite analogous to the state-case. 'I have been laughing all day' implies that I am still laughing. More generally, I believe that there is a complete parallel here between the two categories and I propose the following rectified schemata:

activity-verbs: 'A has been φ-ing for such and such a time' implies 'A is φ-ing'.

state-verbs: 'A has φ-ed for such and such a time' implies 'A φ-es'.

Vendler gives us, in order to establish a distinction between state-verbs and activity-verbs, two time-schemata which are, on the surface different. For activity-verbs the schema is: 'A was φ-ing at time t' means that t is on the time-stretch throughout which 'A was φ-ing. For state-verbs it is: 'A φ-ed from t1 to t2' means that at any instant between t1 and t2 A φ-ed.

It is, however, easy to show that these two locutions do not mark any difference in principle between the two categories. The tests are, in fact, interchangeable. State-verbs can be tested on the activity-schema and vice versa. Let us illustrate this by using examples from Vendler's own list.

First, let us test a state-verb on Vendler's activity-schema: 'A loved at time t' means that t is on the time-stretch throughout which A loved. Conversely, we test an activity-verb on the state-schema. 'A was running between t1 and t1' means that A was running at any instant between t1 and t2. They both clearly come out all right.

It is rather easy to see, intuitively, why this must be so. Both states and activities go on for a while or last for a while. One φ-es (respectively, is φ-ing) in both cases from a time t1 to a time
t2 (or between t1 and t2). Neither a state nor an activity are performed in a time-stretch (like the accomplishment-verbs) and neither of them can be said to be performed just at an instant (like the achievement-verbs).

There is, then, a clear affinity between state-verbs and activity-verbs. They are both, in a sense, static. They don't have a clear end as the performance-verbs have in general. What, then, is the reason for distinguishing between the two; what considerations can support the continuous-tense criterion?

Let us take, as a starting point, the fact that no state-verbs have imperatives, i.e. that the class of states and the class of actions are mutually exclusive, while, on the other hand, many activity-verbs are action-verbs. This gives us a rough clue as to the nature of the distinction.

But, for this reason, the division is not clear. What is the motivation for distinguishing between the non-actions among the activities and the states? Why is 'raining' an activity instead of a state?

This question suggests that it would have been better to use the term 'process-verbs' as a generic term for the category hitherto labelled as 'activity-verbs'. From a common-sensical point of view 'raining', in contra-distinction to things like 'knowing', is a process because it entails a continuous change or a continuous repetition of a singular kind of event, viz. the falling of raindrops. Likewise, the activity of running entails a continuous repetition of a singular kind of event, viz. the quick movement of one's legs.

Now, however, another difficulty arises. If the continuous repetition of an event is to be chosen as the distinctive feature of activities (processes), it seems as if some of the actions among the activities will fall by the wayside. What continuous repetition is, e.g., involved in the 'keeping' and 'holding' activities?
In attempting to answer that question, we can first state that 'keepings' and 'holdings' may involve continuous manipulations, viz. in the case where the state of affairs maintained tends to change. On the other hand, they may not. Still, they have continuous tense and come out as activities, not states.

The reason behind this seems to be that they, simply, are still considered to be actions for which agents are responsible. Our ordinary conception of action is such that it need not involve movement or change. One can be ordered to keep the door shut; one can do it on purpose and intend to do it. The same, obviously, holds true for 'keeping the enemy at bay', 'waiting', 'sunbathing', and all other activities which do not involve change, or the repetition of events. On the other hand, 'loving', 'knowing', and the like, are not considered as actions. They can't be ordered, can't be intended, and can't be done on purpose; indeed, they can't, really, be done at all.

Hence, we can conclude that there are two distinct sufficient conditions, neither of which is a necessary condition for something's being an activity (process):

1. Either it should be a continuous change or continuous repetition of a singular event (if it is a non-action, this is a necessary condition), or

2. it should be an action which is not specified by its end, i.e. which is not a performance.

This summary, however, calls for an answer to the following complication. What about those 'keepings' and 'holdings' which don't have human beings as subjects, i.e. which can't be actions? They must, following the above reasoning, be states.

In fact, I grant that that conclusion is correct. It is also the view taken by the ordinary speaker. We don't attest 'the bookshelf is holding up the ceiling', but rather, 'the bookshelf holds up the ceiling', i.e. we don't use the continuous tense in cases like these.
This entails that 'holding' is category-ambivalent. It may be an activity, but it may also be a state. I shall return to the problem of ambivalence later on.

C. What is the significance of Vendler's accomplishment-achievement distinction?

Vendler offers two different time-schemata to separate these categories, and also maintains that verbs belonging to the accomplishment category have continuous tense while the achievement-verbs don't. (This latter statement plainly contradicts Kenny's contention that all performance-verbs have continuous tense. Superficially, at least, Vendler is wrong in this case. The forms 'A is finding' and 'A is winning' do exist. The question is whether these forms are "improper" or "secondary" has to be backed up by other syntactical or semantical considerations).

Do the time-schemata, however, give a clear division? I think not. There is a large class of verbs which we might, for the moment, call 'short-time accomplishment-verbs' like 'shutting' or 'breaking', which seem to fit both the accomplishment- and the achievement-time-schemata.

The dilemma is roughly the following. With these verbs there is a time-stretch in which a result is attained and during the whole of which the performance is said to be going on. Hence, they are, in this respect, accomplishment-like. On the other hand, the time-stretch is so short that it can, in most contexts, be considered as an instant, and hence, they seem to pass as achievements as well.

Both of the following locutions are all right:

'A was shutting the door at time t' means that t is on a time-stretch in which A shut the door.
'A shut the door between t1 and t2' means that the time-instant at which A shut the door is between t1 and t2.
Clearly A is involved in shutting the door during the seconds in which he shuts it. On the other hand, it is quite proper to say that he shut it at exactly 3 p.m. We can easily convince ourselves that the other Vendlerian test is non-decisive as well.

The suggestion that the accomplishment-achievement distinction might coincide with a distinction between action-verbs and non-actionverbs among the performance-verbs is not well-founded either. There are action-verbs and non-action verbs in both categories.

'Building a house' is an accomplishment-term as well as an action-term. 'Growing-up' is an accomplishment-term but a non-action-term. 'Identifying' is an achievement-verb as well as an action-verb. 'Being born', however, is an achievement-term and a non-action-term. My objections are, however, not designed to deny that there is an important difference of degree between, e.g. 'building a house' and 'finding'. It is, obviously, true that there is a class of highly abstract verbs to which 'winning', 'finding', 'reaching','arriving', and 'achieving' belong, which are primarily used to refer to an instantanous occurrence and which, even if they can be 'borrowed' to refer to the last part of the process leading up to the occurrence, perhaps cannot be used to refer to the whole process leading up to the occurrence.

I shall, however, myself, not make a point of this distinction, but, instead, confine myself to recognizing the category of performances using my own semantical, and Kenny's syntactical, criteria.

2.3 Notes on category-ambivalence

I have already noted the phenomenon of category-ambivalence, i.e. where a term in one context belongs to one category and in another context to another.

I shall, in the following, point out some further, more, general, connections between the categories and study some of the ways in which verbs belong to more than one category, or can be supplemented
so that the resulting term comes out as a member of a category other than the contained verb. These facts show the importance of knowing exactly which term and which context is under debate. Is it just the verb, or is it a construction of which the verb is just a part?

Let me first state my observations in a general form:

A. Most performance-verbs have activity-uses.
B. Some activity-verbs can be contained in performance terms
C. Most activity-verbs and performance-verbs have state-uses

A. The fact that performance-verbs can be used to signify activities can, perhaps, be best illustrated if we start by considering some clearly ambivalent cases. Take verbs like 'cutting', 'hitting' or 'kicking'. They are prima facie performance-verbs (Kenny has included them in his list of performances), and on one interpretation of the locution, 'A is hitting the tree' it is certainly true that A has not hit the tree yet, i.e. that the verb passes the Kennyan performance-test. On the other hand, the same locution can be used to signify a fact other than the one that A moves his hands rapidly towards the tree and is very likely to hit is, viz. the fact that A repeats the performance of hitting the tree several times. This fact is more clearly expressed by the locution 'A keeps hitting the tree'. Given this interpretation, 'A is hitting the tree' does not imply that A has not hit it, but rather, that he has hit it at least once. Hence, it comes out as an activity-verb.

It also makes sense, intuitively, to regard this latter sort of thing as activity. When one keeps hitting a tree, one is involved in a continuous repetition of a single act, as when one is running or swimming, and there is nothing in the concept that indicates what is to be counted as the completion of what is going on. There is no particular instance of the performance of hitting that counts as the completion of the activity of hitting. This observation suggests that many activities may be analysed in terms of repetition of performances. Sometimes, as in the case of 'hitting', we use the same term to signify both the performance and the activity composed of the performance in question. Not all performance-verbs are ambivalent, however, in the way that the 'hitting'-verbs are. The
performances of 'closing the door' and 'killing the man' can never be interpreted as activities. The explanation of this is obvious. While a performance like 'hitting the tree' is an indefinitely repeatable performance in the sense that one can keep hitting the tree as long as it exists, this is not possible with performances like 'closing the door' and 'killing the man'. Once an object is closed it is in a state wherein it can no longer, for conceptual reasons, become closed (until the state is reversed), and, likewise, once a man is killed he is in a state wherein he cannot be killed again.

This fact, however, does not prevent us from easily construing terms including the verbs 'closing' and 'killing', which come out as activity-terms on Kenny's test. Such a result is effected by putting the accusative object in the plural. Consider 'A is closing doors' and 'A is killing mice'. They are clearly activities, also, in our intuitive sense. They are continuous repetitions of singular performances. It is only that each such performance, in contradistinction to the hittings, requires a new object. Given this device of putting the accusative object of the plural, all transitive performance-verbs can be made parts of activity-terms. (Clearly, some of these activities are rather unnatural goings-on, like 'A is finding thimbles', but none of them are inconceivable).

With the intransitive performance-verbs, this way out is, of course, excluded. An agent can grow up and die only once; activities cannot be composed of such things.

Some intransitive verbs are, however, in themselves category ambivalent, e.g. 'standing up' may be used to refer to a singular performance, but also, obviously, to a succession of performances.

B. Several of the verbs which are basically activity-verbs may be contained in terms which come out as performance-terms on Kenny's test. There are various devices by which to achieve such a result.
a. With the productive activity-verbs, one has only to supplement the verb with the object that comes into existence through the activity. 'Building' is an activity-verb, but 'building a house' is a performance-term. 'Writing' is an activity-verb, 'writing a book' is a performance-term. When one is building, one has built for a while, but when one is building a house, one has not yet built the house.

b. With activities involving the movement of the whole body, one may supplement the verb with either the distance moved or the place reached by the activity. To swim is to be involved in an activity; to swim a mile is to perform a performance. To walk is to be involved in an activity, to walk to Reading is to perform a performance.

c. When the activity is an attentive activity, like 'listening' or 'reading' one can construe a performance by indicating the span of the object of attention, e.g. 'listening through a program', 'reading through a book'. It should, however, be noted that it is not in general sufficient to supplement transitive activity-verbs with objects to make the resulting term a performance-term. Not all accusative objects of activity-verbs play the role of indicating an end-state of a process or an activity. Frequently, they just locate the activity to a certain spot, as in 'milking a cow' or 'torturing a man', and frequently, they function only as adverbial qualifications, as in 'playing the trumpet' and 'playing football'.

d. It may be argued that the generally effective device by which one makes performance-terms out of activity-verbs would be to qualify the latter with a time-span. For all activities it holds true that they take a certain amount of time, even if they do'nt - as in the case of the mental ones - take up space. Hence, they can all be qualified, significantly, with a time-clause like 'for such and such a time', and when they are, the resulting term comes out as a performance. If A is walking for an hour, he has not yet walked for an hour.

There seem, however, to be reasons for caution here. It is, obviously, an unhappy outcome if we can't report how long, in fact, an activity goes on without turning it into a performance. The theory
is bad if we can't distinguish a report about the length of an activity from the report of a performance.

To me, however, the dilemma is just apparent. Nothing forces us, in general, to say that the time-clause is part of the actionterm. In fact, we rarely talk about the action 'ψ-ing for such a such a time' as opposed to the action of 'ψ-ing', which happens to go on for such and such a time. The former is the case, practically, only when there is an explicit intention on behalf of the agent to for such and such a time, but then, on the other hand, it becomes reasonable to regard what is going on as a performance. If there is no intention, then the time-clause becomes just an external qualification of the activity-verb. It reports, neutrally, how long the activity, in fact, goes on, and the activity remains an activity.

C. Most activity-verbs and performance-verbs have state uses.

We have hitherto granted that some verbs have continuous tense while others don't, which Kenny and Vendler pointed out. We have called the former activity-verbs and performance-verbs, and the latter, state-verbs. We have not, however, as yet recognized that the activity- and the performance-verbs can also be used noncontinuously, even in the present tense. Some of those uses (not all, as there is an historic present as well) are in fact state-uses.

When we say that A runs, we don't mean that A is at that moment running, i.e. moving his legs. We mean, rather, that he has the habit of running, i.e. that he often runs. Analogous considerations can be made for almost all other activity- or performance-terms. (Obvious exceptions are, of course, the terms for non-repeatable actions or events. 'A kills Smith' and 'A grows up' can't be state-terms.)

This whole point is well recognized by Vendler in the following passage: "Habits (in a broader sense including occupations, dispositions, abilities, and so forth) are also states in our sense. Compare the two questions: Are you smoking? and Do you smoke? The first one asks about an activity, the second one about a state. It
is not only activities that are habit-forming in this sense. Writers are people who write books or articles, and writing a book is an accomplishment. Dog-catchers are men who catch dogs, and catching a dog is an achievement.\textsuperscript{12}

2.5 Summary

In this section about Kenny and Vendler it has been my central aim to relate their systems to each other and compare them to that classification of Ryle's which was discussed in the preceding passage.

I have shown the similarities between Kenny's and Vendler's schemata and I have also pointed out how close they are to the schemata which finally came out of my discussion of Ryle.

I have made some critical remarks about Kenny's and Vendler's treatments. I have noted that the action/non-action distinction cuts through both the categories of activity-verbs and performance-verbs (accomplishment-verbs and achievements-verbs). I have refused to accept some of the syntactical criteria proposed by Kenny and Vendler to mark the distinction between activity-verbs and state-verbs.

I have pointed out the unclarity in Vendler's accomplishment-achievement distinction by indicating cases where his tests are indecisive.

Finally, I have commented on the phenomenon of category-ambivalence, studied how performance-verbs have activity-uses, how activity-verbs can compose performance-terms, and how activity- and performance-verbs can be used to signify habits, i.e. a kind of states.
3. Another version

In this concluding passage I shall try to collect some of the observations made above in a more systematic way. The terminology thus created is intended to be used in a following study.

The main dividing line will be drawn between CHANGE-terms and STATE-terms.

The generic category of CHANGE-terms has two sub-categories which I label as PROCESS-terms and EVENT-terms. These latter each have, in their turn, two sub-categories, terms for PROCESS PROPER and ACTIVITY-terms, and terms for EVENTS PROPER and ACT-terms, respectively.

The resulting hierarchy can be represented in the following way:

```
  CHANGE-terms
     /       \
    /         \
 PROCESS-terms EVENT-terms
    /           \
  terms for terms for
 PROCESSES PROPER ACTIVITIES EVENTS PROPER ACTS
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In the category of change-terms I include Kenny's activity-terms and performance-terms. In fact, I have just changed the generic labels of Kenny's categories to stress the fact that his distinctions cover the whole field of changes and not just actions.

The distinguishing criteria are the following:

The change-state distinction: The verb of a change-term has continuous tense. The verb of a state-term lacks continuous tense.
The process/activity distinction: A process-term is an activity-term if it has an imperative and can significantly be preceded by 'intend to'. A process-term is a proper process term if this is not the case.

The event proper/act distinction: An event-term is an act-term if it has an imperative and can significantly be preceded by 'intend to'. An event-term is proper if this is not the case.

Semantically, the distinctions can be described, roughly, in the following way:

Changes are either continuous movements or movements leading up to particular states of affairs.
Processes are continuous movements.
Events are movements leading up to particular states of affairs.
Activities are processes which are actions.
Acts are events which are actions.

Examples: 'Raining' is a proper process-term, 'running' is an activity-term, 'being born' is a proper event-term, 'killing' is an act-term.13
NOTES

1. Ryle (1949), pp. 302, 303
2. Ryle (1949), pp. 149-151
3. Ryle (1949), p. 150
5. Kenny (1963), p. 175
7. Kenny (1963), pp. 177, 178
8. Kenny (1963), pp. 183, 184
13. For an elaboration of these ideas, see Nordenfelt (1977),
REFERENCES


ON VON WRIGHT'S THEORY OF ACTION

Introduction

In several works Georg Henrik von Wright has presented various versions of a logic of action especially designed for the introduction of a deontic logic. This theory appears in its most elaborate and final form in von Wright (1968).

In the following paper I shall take this final version, or rather its philosophical background, as a starting-point for a further discussion of the concept of action. Roughly, I shall see to what extent my previous observations can have bearing on the evaluation of the theory; or, more precisely, I shall try to determine how much of our ordinary action-language the theory is a theory about.

I have chosen von Wright's theory, partly because it is one of the most highly developed existing theories of action and, partly because it is on one main point representative for a whole class of theories. Von Wright has one very important view in common with several authors on the topic, viz. the view that an action is essentially the bringing about of a state of affairs in the world. (Cp. Kenny (1963) and Pörn (1970) and (1977)). Hence, the things I shall have to say on that point have, if correct, a rather general validity.

1. The theory

Von Wright gives his general view of action in the following passage:

What is it to act? Perhaps an answer which covers all cases cannot be found. But an answer which captures an important type of action is this. To act is intentionally (at will) to bring about or prevent a change in the world. What is a change? A preliminary answer is that a change is a transformation of states. A change takes place when a state of affairs ceases to be or comes to be.
To be able to take into account these philosophical intuitions von Wright introduces two logical calculi, viz. what he calls the T-calculus and the I-calculus. The T-calculus is assumed to be sufficient for the formalization of change-descriptions, while a combination of the T-calculus and the I-calculus are needed to handle action-descriptions. The two calculi have identical formal properties. They are both built on ordinary propositional logic (PL), which they include in toto. In addition to PL the T-calculus contains a binary connective, T, and the I-calculus a binary connective, I, which both function as ordinary binary connectives. The T-calculus and the I-calculus each contain four axioms besides the axioms of PL. These four extra axioms in the two calculi are identical in the sense that you get one set from the other just by substituting the binary connective. For the T-calculus the axioms are the following:

At 1: \((p \lor q \land r) \iff (p \land (q \lor r))\)

At 2: \((p \land q) \land (p \land r) \implies (p \land (q \land r))\)

At 3: \(p \iff (p \land q \lor r)\)

At 4: \((p \land q) \lor r)\)

Inference in the two calculi, as well as in the combined T-I-calculus, proceeds through substitution, detachment, and replacement by provably equivalent formulae.

As the underlying logic is propositional logic, the variables p,q, etc., take propositions as values; in this context in particular propositions that such and such is the case in the world or that such and such a state of affairs occurs. (In the following I shall sometimes, for the sake of simplicity, use the letters p,q, etc., when referring to the states themselves.)
A change-description in von Wright's system, then, takes the following form: The state that p, and next, the state that q; or formalized, \( pTq \), which means that the world changes at a particular time from the state p to the state q.

According to von Wright this device is, however, not sufficient to formalize action-descriptions. An action is something more than just a change of states of affairs. One can't conclude from the information that a change has taken place, that an action has been performed.

Assume, however, we are given the additional information that, had this agent not interfered with the world, but remained passive, the change would not have taken place. Then we can conclude that he brought about the change...\(^2\)

Generally speaking, for a description of action in terms of states and transformations, three items are required:

a) First, we must be told the state in which the world is at the moment when action is initiated, I shall call this the initial state.

b) Secondly, we must be told the state in which the world is when action has been completed; I shall call it the end-state.

c) Thirdly, we must be told the state in which the world would be had the agent not interfered with it but remained passive, or as I shall also say, independently of the agent. \(^3\)

The information provided by c) gives us the counterfactual element, which, according to von Wright is contained in all action-descriptions. (He also seems to hold that it is peculiar to action-descriptions.) It is in order to mirror this feature that he introduces his I-connective and the I-calculus. Hence, an action-description takes the following form: the state that p, and next, the state that q,
instead of, the state that p; or formalized, pT (qIp), which means that the world changes at a particular time from the state p to the state q instead of remaining at p, which it would have done had it not been for an agent.

Hence, -T ( -I-) is the general schema for action-descriptions.

Von Wright's system provides us with four types of action, or as he himself calls them, "elementary modes of action". These elementary modes of action can be most clearly illustrated if we consider a world where only two states are possible, viz. p and its negation \( \neg p \). Let us always assume that \( \neg p \) is the initial state. Hence, we have:

1. \( \neg p \land (p \implies \neg p) \)
2. \( \neg p \land (\neg p \implies p) \)
3. \( \neg p \land (p \implies p) \)
4. \( \neg p \land (\neg p \implies \neg p) \).

In 1. the agent creates p; in 2. he prevents \( \neg p \) from vanishing, or as I shall also say, keeps \( \neg p \); in 3. he lets p become the case; in 4. he lets \( \neg p \) remain the case. The first two could be called active actions, the latter two, passive actions; or, as von Wright himself puts it, "ultimately the elementary modes of action reduce to four, i.e. to two action-types: productive and preventive action and the corresponding two omission-types".

Out of these elementary modes of action I shall consider almost exclusively the productive action-type, as nearly all ordinary action-concepts when they can at all be captured by von Wright's theory will fall into that category. A few can perhaps be looked upon as preventive action-concepts but, in the normal case, prevention as well as omission is expressed by circum-locutions of the kind "to prevent from ..." and "to omit to ...", respectively.
2. The issue

My discussion will concern the question of whether our ordinary action concepts are adequately formalized by the schema \(-T (\neg I)\), the productive version of it in particular. The analysis will in particular focus on the question of whether actions are, in general, determined by initial states and end-states. A large part of this discussion will have validity for the general theory of change. Are changes always determined by initial states and end-states? And, if so, are they completely determined by these states?

In discussing these questions I shall presuppose the distinctions I have made in Nordenfelt (1984), particularly the one between acts and activities; I shall also assume a distinction between natural and conventional actions. The definitions can briefly be stated as follows:

\textbf{Act} = \text{def.} an event which is an action. (For details see Nordenfelt (1984)).

\textbf{Activity} = \text{def.} a process which is an action, or more simply, an action which is not an act.

\textbf{Conventional action} = \text{def.} an action which for its existence requires a set of rules; or, more clearly: There is a conventional action \(C\) if there is a set of rules whose content specifies that a certain action \(N\), or any element in a certain class of actions \((N)\), under certain specified circumstances counts as, or means, \(C\). Examples: promising, opening a bank-account.

\textbf{Natural action} = \text{def.} an action which is not a conventional action. Examples: killing, running.

These distinctions give rise to the following four categories: natural acts, natural activities, conventional acts, conventional activities.
These are the categories which will, in turn, be treated during the course of the discussion. I shall also, however, use the terminology "conventional action, natural action", when the act-activity distinction can be ignored, and "act, activity", simply, when the conventional-natural distinction can be ignored.

3. Preliminaries

The concept of a state of affairs. The concept of a state of affairs is left unanalysed in von Wright's treatment. In our discussion about the applications of the theory we need, however, to make our intuitions about this concept a bit more explicit.

First of all, there is one almost fatal oscillation in von Wright's use of the word "state". In some contexts he seems to mean by a state of affairs a total state of the world, i.e. everything which is the case at a certain time. This is sometimes explicit, as in the passage: "The T-I expression then says that the world initially is in a certain total state and next is in a certain second total state instead of being in a certain third total state." This indicates that the variables p, q, etc., don't take propositions about states in general as values, but rather propositions about total states of the world. This fact, however, squares badly with the fact that p & q T ~ p & ~ q is an acceptable formula in von Wright's system. If p and q take total states as values there is no intelligible interpretation of the formula. The world obviously can't be in two total states at the same time.

A way to get around this difficulty is, perhaps, to choose the convention that whatever stands on each side of a connective must together describe a total state of the world. If the formula is p T q, then p stands for one total state of the world and q for another total state of the world. If the formula is p & q T r & s, then p stands for a state of the world which, together with q, constitutes a total state of the world and, likewise, r and s together, but not separately, stand for another total state of the world. It also seems as if this convention is necessary. If in the formula p T q, p could be
any particular state in a set of states which together constitute a total state of the world, then we have not secured that ptq expresses a change. I shall illustrate that with the help of a single example.

Let's assume the existence of a world which has only two kinds of qualities, say a particle which has density and shape, and assume also that it can only vary between two positions with regard to these qualities. The particle may be hard or soft, and it may be round or edgy, but not anything in between. Hence, this little world has four possible total states of affairs; the particle may be round and hard, round and soft, edgy and hard or edgy and soft. At every instant it is in one of these four possible states of affairs. Let's call the state that the particle is round p, that it is edgy q, that it is hard r, and that it is soft s. Then, the list of the four total states can be expressed in the following way: 1. p&r, 2. p&s, 3. q&r, 4. q&s.

If we construe a T-formula with any of these pairs we get quite proper change-descriptions. Consider, e.g., the formula p&r T p&s. It means that the world changes from the state of being round and hard to the state of being round and soft.

Say, however, that we would admit formulae where the state-descriptions on both sides of the connective are not total state-descriptions, i.e. that we accepted formulae such as ptq and ptTr. They may sometimes receive an intelligible interpretation, but they, clearly, need not. The formula ptTr will have the following reading: The world changes from the state of being round to the state of being hard. Hence a formula like ptTr must be refused. The production of hardness does not entail the destruction of roundness. Even if the state of roundness happens to cease when the state of hardness appears, the adequate analysis would not be ptTr, i.e. if there was one change, but ptq & stTr, i.e. two changes, viz. from roundness to edgyness and softness to hardness.
When we apply the Wrightian theory to the actual world we cannot however, for obvious reasons, talk about the total state of the world. We have to admit short-hand T-expressions and, hence, introduce restrictions as to what variables are allowed into what formulae. We must, at least, adopt the following assumption: For T-formula to be a change-description the state descriptions on the two sides of the connective must be state-descriptions of the world with respect to the same quality.

But this restriction is clearly not sufficient. We must not only confine ourselves to specific qualities, but also to specific parts of the world. According to the ordinary action language we normally act on specific objects and hence the states created are to be located on the specific objects. (I shall have to qualify this below.) This fact certainly has consequences for our conception of change. We obviously don't express a change in the following proposition: a window in New York is open, and next, a window in Stockholm is closed. The proposition may be true without any change taking place. The latter state does not exclude the former state. Thus, if p ≠ q, p T q is a change-description if and only if p and q are incompatible, i.e. cannot for reasons of logic, occur together.

What kind of entity is a state of affairs? Let me just sketch a definition which I take to be sufficient for my purposes.

A state of affairs (in the world) = def. a property of an object or a relation between objects (perhaps more adequately, the existence of a property etc.) which fulfills the following requirements:

a) it is accidental, i.e. does not for conceptual reasons belong to the object. Ex. "the house is a building" is not a state-description.

b) it is in principle keepable and destructible.

The latter requirement is the only controversial one. I put it down just to give my analysis some subtlety, to be able to stress the fact that there seem to be some properties and relations which are, for conceptual reasons, instantaneous or indestructible.
The concept of the world. From von Wright's theory of action one can deduce the following ideal picture: There is a "natural" world and there are human agents. The agents are standing outside the world and, like God, watching the "natural" course of events, sometimes interfering with it, in the sense of steering the course of events in another direction. To what extent is this a tenable view, and how should it be modified? There are in particular two questions. 1. What is the natural course of events? 2. Is the agent himself a part of the world?

1. Parallel to the distinction between a natural and a conventional world there is a distinction between natural and conventional states. It is obviously only in the natural world that we can reasonably talk about the natural course of events, i.e., where changes can take place "by themselves". For conventional states it holds practically always true that they can only be created by human beings and, hence, in all these cases it is nonsense to talk about interference with nature. However, we could of course, include all other agents but the actual agent in the conventional world, and then again it becomes almost generally possible that a given conventional state can arise due to the world, i.e. talk about interference becomes sensible. (There are certain exceptions to this. Some states require a specific agent for their occurrence. For example, the installation of a bishop requires, at least in the Swedish society, the archbishop as agent.)

2. Is the agent himself part of the world in which he interferes? It seems to be reasonable to include the agent, or rather the agent's body, in the world - at least in such cases where he is, in an obvious sense, the object of the action. Consider, for instance, the action of "hurting oneself".

The inclusion of the agent in the world in these cases is, however, not enough to be able to locate all states that there are in the world. I have in mind, in particular, states which are constituted by relations where the agent is one of the terms. When John climbs a mountain he does not produce any change in the mountain. What he
does is that he changes his spatial relation to the mountain. He creates a state which is constituted by an intimate spatial relationship between him and the top of the mountain. When John gives Peter a promise he does not change Peter in any way. He creates a normative relationship between Peter and himself.

A reasonable theory of action must accept these relations as end-states of actions, and if all states are to be located to the world, then the agent is also in these cases a part of the world.

Finally, if we accept a certain analysis of intransitive activities (to be discussed below) we have to accept that states of the agent's body, in particular states of his limbs, belong to the world.

In short, the ideal picture must be strongly modified. Not all actions can be properly looked upon as interferences with any "natural" course of events. The agent can, in many cases, not be looked upon as standing outside the world.

4. Discussion

Let me, before I consider the particular categories of action, make a general remark concerning my analysis. When I ask the question whether an action under debate is defined by an end-state I am, of course, concerned with what is conceptually required by the action-concept. All acts and activities which involve bodily movements certainly have causal consequences of various kinds; movements in the air, sounds, etc. But these consequences can vary from time to time with the same action-type and, hence, cannot be used as defining criteria for the action in question.
4.1 Natural acts

The natural acts are clearly the paradigm-cases for the Wrightian theory. As Kenny puts it: "Performances (i.e. "acts") are brought to an end by states. Any performance is describable in the form 'bringing it about that p'." This dictum, even if not generally valid, obviously covers a central class of natural acts. There are, however, a few problems to discuss.

1. Do the natural act-concepts, in general, presuppose any particular states of affairs?

2. Do the terminating points of natural acts all, in fact, qualify as states of affairs?

3. Certain natural acts seem to presuppose means, tools and specific behaviour. Hence, they are only partly definable in terms of their end-states.

1. With natural act-concepts there are at least rarely any initial states presupposed in a non-trivial way. Consider, e.g., killing and destroying. Certainly the act of killing presupposes that the animal which is exposed to the act is alive before the killing starts. Likewise, the concept of destroying presupposes that the object to be destroyed is complete and/or in function before the destruction starts. In short, these act-concepts, like most natural act-concepts, presuppose as the initial state the contradictory state of the end-state. If the end-state is "x is dead", then the initial state required is "\neg (x is dead)", i.e. x is alive. If the end-state is "\neg (x exists)", the initial state required is "x exists".

There are, however, few concepts of the kind "painting a house red from the state of being blue", i.e. where the initial state required is not just the contradictory state, but a contrary state. Hence, in the schema for natural act-conceptualization, we often don't need more than one variable and its negation, viz. \neg p T (p I \neg p).
2. Even among the natural acts some end-states turn out to be problematic. In the first of the two cases I shall discuss, the "touching" case, the end-state is, in principle, unkeepable, i.e. one of our criteria on states is violated.

In the second case, the "persuading"-case, the "end-state" seems to be no state at all, but rather a new act.

(a) What state of the world is brought about when we knock on a door? Is the door in any sense changed, or has something else been changed by the act? A first attempt to answer this question would be to say that the state of the door has been changed in so far as a new item has been added to the history of the door, i.e. it has received the property of having been knocked on.

This is, however, just the kind of property which should be ruled out from the state candidates since it is, in principle, indestructible. It is, for conceptual reasons, impossible to destroy a state like "having been knocked on" for the simple reason that it belongs to the history of the door and, hence, cannot be affected by anything in the present. Moreover, if we allow a property like "having been knocked on" to be a state of affairs of a door, we seem to have to include also "having been painted", "having been shut", etc., as states of affairs of the door besides the results themselves, viz. "being painted" and "being shut". Hence, whenever an object is changed in any way there are two new states to ascribe to it; one "visible" state which is in principle destructible, and one "invisible" state which is part of history, and which is in principle indestructible. Which of the two should be counted as the endstate? Possibly both of them. To me, this reasoning clearly enough shows that the history of an object cannot be included among the states of the object. (A completely analogous argument can, of course, be produced if we try to locate such an end-state of knocking to the agent and call the state "having knocked the door" instead.)

A more promising attempt to save the simple "touchings" for the theory is the following: The change produced by knocking on the door is a change in the relationship between two entities, viz. the agent
and the door. The initial state is constituted by the fact that the hand of the agent is separate from the door and the end-state is constituted by the intimate spatial relationship between the hand of the agent and the door.

This seems prima facie all right. There is, however, a difficulty surrounding this interpretation also. The end-state, thus conceived, violates the second part of our requirements for states of affairs; it is, in principle, unkeepable. The state must, for conceptual reasons, disappear immediately after having appeared. It is logically impossible to prevent such a state of affairs from vanishing. This point needs some clarification.

The agent's finger may, of course, remain on the door as long as it pleases the agent to keep it there. But, strictly speaking, that state is no longer identical with the "end-state" of knocking. It is necessary for our possibilities to identify an action as knocking that the "end-state", i.e. the relationship between the finger and the door is instantaneous.

Several other kinds of states of affairs may, as a matter of fact, be instantaneous since there are causal factors reversing the course of events. A door which has been shut by a person may, immediately after, be opened again. But this is not analogous to the knocking-case. The "end-state" of knocking is, as I see it, not reversed by causal factors; it is "reversed" for logical reasons.

(b) An intricate problem is constituted by those acts whose "end-states" are themselves acts, e.g., the act of persuading x to perform F. Can we also include in the class of states of affairs acts, which according to the definition, are changes of states of affairs? One possible way to treat this difficulty would be to say that "persuading to φ" has the same end-state as "φ-ing" itself. Then, however, we run the risk of making the two acts collapse into one. The question is, how willing are we to accept such a result? Does y, who persuades x to perform φ, ipso facto perform φ himself? One of the consequences of such a view is that one and the same action-instance
may have more than one agent (without being a two-place action in the obvious sense that it requires two agents, like e.g., "marrying"). In my view, this problem cannot be solved if we don't accept the fact that acts may have results which are not states of affairs in any ordinary sense of the word.

3. Von Wright's theory encounters difficulties even among such acts as entail an obvious change in the world. Some acts are only partly definable in terms of their end-states. As we have realized, in a preceding section, many acts presuppose other features as well, such as tools, means, certain behaviour etc.

Consider, e.g. the act of kicking a ball. In the standard case kicking a ball changes the world in so far as a ball moves. Let's assume that the movement of the ball is the end-state of kicking the ball. Now, is the end-state described as "the movement of the ball" sufficient to determine the act, which has caused the state of affairs as an act of kicking? Obviously not. The ball can move as a result of a multitude of actions, e.g., pushing the ball and pulling the ball. We have to describe the state of affairs more specifically to define the specific result of kicking the ball, and we don't seem to be able to do that without pointing out what kind of bodily movement caused the ball to move. Hence, the specific result of the act of kicking is not that the ball is moving but that it is in the state of having been kicked. Again we encounter a state of affairs which does not fulfill reasonable requirements.

Although "kicking" in its standard use entails the movement of the object kicked and, hence, satisfies von Wright's requirement for changes of states of affairs, this is obviously not all that is involved. If the end-state had been the whole story, then we wouldn't have been able to distinguish between pushing the ball and kicking the ball.

In the ordinary action language one sometimes distinguishes between actions which have identical end-states roughly according to the various ways in which the transition from the initial state to the end-state is achieved. (This point clearly does not hold true only
for acts, but also for events. The wind can blow a ball off the
ground, a magnet can attract if off the ground, and if we want to
distinguish between the two events we have to cite the different
causes.)

I take this question to be of special relevance when the aim is to
define a notion of action suitable for moral discourse. It is not
just the state of affairs achieved by an action which is normatively
relevant, but also how one achieves it.

4.2 Natural activities

The activities and, in particular, the intransitive activities,
pose perhaps the most serious objections to the theory. There does
not seem to be one general way to treat them within the theory. I
shall suggest below three alternative ways of analysing activities:

1. as successions of productive acts,
2. as preventive acts,
3. as omissions.

(a) Let us first, however, for the sake of argument, try to view an
activity as a productive act. Consider the activity of walking.
What could constitute the end-state of walking? As we have already
pointed out in the definition of activities, they don't include any
terminating points. Hence, the question is, in a way, already
settled. There is no end-state conceptually required by "walking".
Assume though, anyhow, that, per impossibile, the end-state of
"walking" is the state in which the agent is when he has finished
walking. But how do we describe that state? The concept of walking
does not give us any clue whatsoever, besides, of course, the fact
that the agent is not walking when he has finished walking. Hence,
we don't have a guarantee that this alleged end-state of walking
differs from analogously conceived end-states of smoking, bathing,
carpenting, etc. Hence, we won't be able to distinguish between
activities at all.
(b) Von Wright himself acknowledges the existence of activities although he does not say much about their treatment. In one passage, however, he gives us a hint as to the place of the activities in the system. He realizes that there are norms not only for acts but also for activities, but he argues that the norms for activities can be brought out and exhausted in two norms regarding acts in the following way: "The words 'smoking prohibited' when used as a norm-formulation prohibits the activity of smoking. But it also implicitly enjoins the act of stopping smoking, should the addressee happen to be smoking, and forbids the act of starting smoking should the addressee not be smoking."

Hence, according to von Wright, 'starting smoking' and 'stopping smoking' are acts, i.e. analysable in the ordinary way \( \neg pT(pI \land \neg p) \) and \( pT(\neg \neg pI) \). But, what does \( p \) stand for here? What state of affairs is created when one starts smoking and what state of affairs is destroyed when one stops smoking?

There is a temptation to say that the state of affairs is the activity of smoking itself. But, to accept that is clearly undesirable. We would like to insist on the distinction between actions and states. There seem to be two reasonable attempts to solve this puzzle. One is to say that there are two senses of the word 'smoking' -- one state-sense and one activity-sense. The state of smoking is the end-state of the act of starting and the initial state of the act of stopping smoking. The activity of smoking, however, is something else; it is the act of keeping that state of affairs in existence, i.e. the act of continuing smoking. Hence, under this interpretation, "smoking" comes out as a preventive act.

The difficulty in creating artificial states such as the state of "smoking" is, however, that there will be a logical tie between the state of affairs and the act of keeping the state of affairs. The change \( pTp \) (where \( p \) stands for the state of smoking) will only exist in an action-context, viz. \( pT(pI \land \neg p) \).

(c) Another way out which, perhaps, is the most fruitful in this case is to say that the activity of smoking is not one act but a succession of acts, e.g., the act of lighting a cigarette, taking one puff after the other, and finally extinguishing the cigarette.
Under this interpretation an activity-term is a short-hand expression for a succession or (often) repetition of singular acts formalizable as conjunctions of T-I formulas such as $pT(qIp) & qT(rIq) & rT(sIr)$, etc. This is a particularly attractive way of analysing activities that are, per definition, constituted by acts. The activity-concept itself gives us, in these cases, a clear idea of what the ultimate unit in the analysis will be. For the activity of feeding animals, the unit will, of course, be the feeding of a particular animal.

(d) This latter kind of solution is, however, applicable only to those activities which involve bodily movements and, hence, involve the creation of states during their course. Other activities which do not, at least necessarily, involve movement have to be analysed in other ways. The "holding"-and "keeping"-activities are, in fact, the paradigm-cases for von Wright's preventive action-category. To hold a book is to prevent the book from falling down. To keep a door open is to prevent it from getting closed. Likewise, an activity like "torturing a man" is analysable as "keeping a man in pain" which of course can, in its turn, be paraphrased as preventing the pain from vanishing. In general, activities which have results in the world can be viewed as preventive acts.

A problematic class of activities is the one containing "waiting", "lying still", "sunbathing", etc. They can only be, if at all, partly analysed in terms of the theory, perhaps as omissions. To wait is, at least partly, to omit to leave a certain place. The trouble is, however, that the intentional element contained in these concepts is inexpressible in von Wright's system.

4.3 Conventional acts

Do the conventional acts give rise to states of affairs? The things which could be candidates for end-states of conventional acts are, as we have already pointed out, of another kind than the natural states of affairs. It seems, however, clear to me that the ordinary
as well as the philosophical usage of the word "state" is wide enough to cover also certain entities in the conventional world. (cp. Searle's distinction between brute states (the natural world) and institutional states (the conventional world.) Consider also the use of the word "status", the name of things achieved by the acts of "marrying" and "taking a degree", etc.

How are the states of affairs in the conventional world to be analysed? Are all conventional acts definable in terms of end-states?

The end-states of most conventional acts could be viewed as normative positions. By a normative position I mean a set of normative relations between a more or less well-defined class of people (to which the agent may or may not belong), i.e. a set of obligations or permissions laid upon these people to act in certain ways vis-à-vis each other.

When John buys a book from Peter he destroys the normative position that Peter owns the book and creates the normative position that John owns the book. The position that John owns the book means that there is an obligation (in fact a legal obligation) on everyone except John himself not to remove the book from John's place without his permission, and there is obviously permission to John to do whatever he likes with the book.

By obligation and permission we don't mean exclusively legal obligations and permissions. We include all kinds of normative relationships, moral ones, relationships of etiquette and specific game-relationships. Some of these normative relationships are, of course, co-extensive. Several of the legal obligations are also, perhaps ipso facto, moral obligations. Several of the moral obligations are also obligations according to some code of etiquette. I shall, however, not explore the nature of these overlappings here.

The reason I have chosen the term "normative position" is the close analogy I find between these entities and positions in games proper. (The proper game actions clearly constitute a sub-class of the class of conventional actions class.) When one makes a move in a
game, e.g. moves a chess-piece, one obviously changes the normative relationships within the game in so far as the game-partner is obliged, or permitted, to act in certain ways, which he was not obliged or permitted to do before the move was made.

Our primary question is: Do all conventional acts result in normative positions? A big class seems to fulfill this criterion, but one class falls aside (at least prima facie), viz. what we might call the pure language-acts like "stating" and "saying". By pure language-acts I mean acts which are not, ipso facto, conventional acts of higher orders. A pure language-act is an act which for its existence requires no other conventional rules than linguistic ones. A language-act like "promising" is not a pure language-act since it also requires for its existence moral rules. Nor is a language-act such as "sentencing a criminal" a pure language-act since it also requires for its existence legal rules.

Does, e.g., saying that 2+2=4 result in a normative position? Has anything become linguistically obligatory or permitted after the occurrence of such an action, and in that case to whom? As "saying" does not require an addressee the only candidate for bearer of the normative property is the agent himself. Is he linguistically obliged or permitted to do anything after having said that 2+2=4, which he was not obliged or permitted to do before that action?

In my view, there is no such change. Perhaps one may say something much weaker, viz. that there is a limited class of sayings which are linguistically subsequent to saying that 2+2=4, but such a notion is too vague to be of any help here. Hence, I find no device, for the moment, to save the pure language-acts for the theory.

There are some properties peculiar to the conventional states which are worthy of observation. The vast majority of conventional states can, as we have already briefly stated, be created only by human beings. This is clearly indicated by the fact that conventional-act verbs can take only human beings as subject. Only people can promise, thank, order, sentence, buy, open bank-accounts, install
With all the states of affairs created by such acts it holds true that they cannot appear as the result of just a change. If \( p \) is such a conventional state, there is not and cannot be such a thing as just the change \( \sim pTp \). Such a change can only be part of the action \( \sim pTpI \sim p \).

It is, however, not only the case that most conventional states require human agents for their creation; they mostly also require human agents for their destruction. There is however, one great exception to this, one type of change is capable of destroying any conventional state, viz. the death of any of the persons involved in the normative relations constituting the state.

### 4.4 The initial states of conventional acts

I stated before that the natural act-concepts don't in general presuppose initial states in any non-trivial way. The initial state of a natural act is just the contradictory state of the end-state. The conventional act-concepts, on the other hand, normally presuppose more specific initial states.

Consider the act of buying a book. From the occurrence of, e.g., John's buying a book we can conclude not just that John did not own the book before the act was performed, i.e. that the contradictory state of the end-state was the case, but also that someone else owned the book, viz. that a contrary state was the case.

Why this is a general fact about conventional acts is easy to see intuitively when we contemplate the fact that the situation or the circumstances are crucial for the very possibility of conventional acts. Already in the definition of conventional actions we said that a certain action counts as a conventional action only under specific circumstances. In fact the circumstances constitute the intitial state of the conventional act.
4.5 Conventional activities

As far as I can see, this category does not introduce any complications which have not already been treated under the headings of natural activities and conventional acts.

5. Conclusions

Our concern in this paper has been to analyse some central ideas contained in von Wright's theory of action. We have, in particular, penetrated his idea that an action is the bringing about of a change in the world, as well as the connected idea that an action can be (partially) defined by its initial state and its endstate.

In performing this analysis we have considered four categories of actions, viz. natural acts, natural activities and conventional acts and conventional activities. Our results can be summarized in the following way:

a. von Wright's theory is mainly a theory of acts (natural as well as conventional).

b. With certain acts, however, the "end-states" are problematic.

Some acts seem to end, not in states, but in changes, for instance new acts.

c. Many act-concepts entail much more than just an initial state and an end-state. Different acts may have identical initial states and endstates; they are distinguishable by other features, mainly according to the various ways in which the transition takes place.

d. If activities are to be captured by von Wright's theory at all, they seem to require different solutions. Some activities should be analysed as successions of productive acts, some as preventive acts and some as omissions.
e. Most conventional acts, with the possible exception of certain simple language acts, are analysable according to the theory, if we accept normative positions as initial states and endstates of actions.
Notes

1) von Wright (1968) pp 41-42.
2) ibid. p 42.
3) ibid. p 43.
4) ibid. p 46.
5) ibid. p 45.

REFERENCES


ON VARIOUS FORMS OF INTERACTION

1. Introduction

When a robber forces a bankclerk to hand over the bank's cash, we have to do with a form of what we call human interaction. An agent, the robber, acts with intention on another agent, the bankclerk, so that the latter as a result thereof performs another action. However, our instance exemplifies only one of many different types of interaction. There is in everyday language, as well as in the language of social science, a large number of names of other types of interaction. Among these are, for example, threat, warning, persuasion, advice, recommendation and information. These concepts are of central importance for the description of social reality and there is a great theoretical need that they should be analyzed and related to one another.

In the following I shall propose an analysis model for some important interaction concepts. I shall confine myself to interaction which involves only two agents, i.e. a primary agent and a secondary agent. The reason for this is not that my analysis should only be valid in this particular case but merely the fact that I wish to avoid complicated examples. However, a fundamental limitation in my analysis is that it is applicable only to those cases where the secondary action is an intentional action. We ignore, in other words, those cases where agents exercise physical force, against one another, for example pushing one another down a steep slope or lifting one another up a flight of steps. The general form of the kind of interaction I shall be dealing with is therefore the following: an agent x performs an action with intention on another agent y, so that y as a result of this performs an intentional action.

2. The analysis model

As the starting-point for my analysis I have chosen a schema which has been presented in various versions in the modern discussion of
the nature of action-explanation. In von Wright (1971) this schema is called a practical syllogism, a designation which I shall use here. The chief components of the syllogism are, in simplified form, the following:

(1) x has the intention of achieving P (the intention component)
(2) x believes that he is in S (the situation component)
(3) x believes that in S action h is necessary in order to achieve P (the means component)
(4) x can perform h (the ability component)
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(5) x performs h (the action component)

The underlying idea of this schema as an explanation model for actions is the following: In order in any sense to fully explain an intentional action it is not enough to indicate the intention with the action. One must also mention certain insights and beliefs which the agent concerned has. One must mention his view of the situation in which he finds himself as well as his notion of the means to realize the intention. Strictly speaking, in the complete formulation of the explanation one should also mention that the agent was capable of and unhindered from performing the action in question.

A moment’s reflection will show that this model may not only be used to analyze explanations of actions but - and for analogous reasons - may also be used to analyze determination of actions. The model's ability to explain lies precisely in the fact that the components involved determine the action that is subsequently performed. Components (1) - (4) explain by virtue of the fact that they determine (5).

This insight can be used for the analysis of interaction in the following way: When an agent x influences an agent y to perform intentionally an action h, x then sees to it that y gets a complete set of determinants of the (1) - (4) type. In the most extreme case x supplies y with a complete practical syllogism, i.e., supplies him with an intention, two types of beliefs as well as with ability and
opportunity. But in the normal case he does much less, of course; he supplies \( y \) with one or at the most two components in the light of the fact that \( y \) already has the other components that are necessary and together sufficient for a particular action to result. Just as ordinary causality happens in such a way that a cause results in its effect given a fixed background, so one action determines another action in the light of an existing set of intentions and/or beliefs and/or ability and opportunity.

Thus the mechanical pattern is already given. Determination can occur through all four components being supplied, or three components in four possible combinations, or two components in six possible combinations, or a separate component of the four, individually. As far as I can see all of these combinations are possible.

I shall refrain here from examining all of the possible combinations and instead concentrate my attention on elucidating and classifying some of our most common interaction concepts in the light of this model. I shall divide the study into three sections. The first deals with perhaps the most common forms of interaction that have to do with operations on the second and third components in the practical syllogism. The second and shortest section deals with operations on the fourth component and the third section, which from the philosophical point of view is the most problematical, deals with operations on the first component.

3. **On manipulation of components (2) and (3) in the practical syllogism**

The first type of interaction I wish to study in detail is then the following: The secondary agent already has an intention and is induced to act in a particular direction on the basis of this intention through being supplied by the primary agent with components of type (2) and/or (3). To see what this interaction can involve, let us look at the following example:
Torbjörn Fälldin has the intention of staying in power. We can assume that for the moment and in the near future this intention of Fälldin's is not operative, i.e., Fälldin does not do anything special, nor does he feel that he needs to do anything special, to stay in power. It would be entirely possible, however, to get him to act on the basis of this intention, i.e., it can constitute the basis for interaction. Let us look at the following example:

Ola Ullsten threatens to vote with the Social Democrats on the nuclear power issue.

What happens in this case is that Ullsten creates, or threatens to create, a situation in which Fälldin must act if he wishes to stay in power. In other words, the situation around Fälldin has changed. Fälldin becomes aware of this fact and finds that in the light of this new situation he must make certain concessions to Ullsten and accept a compromise on the nuclear issue.

The interaction consists in this instance of the following: Ullsten sees to it that Fälldin compromises on the nuclear power issue by changing the situation and thereby changing component (2) in Fälldin's practical syllogism. We can, as it were, assume component (1); component (4) already exists. Component (3) has in this case been added through Fälldin having himself calculated, on the basis of his reading of the situation, the means necessary for him to stay in power.

In ordinary interaction terminology we can describe this situation using at least two terms, one of them more specific and the other more generic. The specific term has already been used: Ullsten gets Fälldin to compromise by means of threat. The generic term: Ullsten gets Fälldin to compromise by means of force. Thus one of the first results is that the interaction concepts of force and threat are linked to the second component of the practical syllogism, or to be more exact to the situation part of the second component.

Against the same background as above, i.e., Fälldin's intention to stay in power, we could conceive other forms of interaction. Party
Secretary Jonnergård could, for example, inform Fälldin of Ullsten's threat. In this case Fälldin learns about the change in the situation in a special verbal way. This form of interaction, i.e., information about a threat, we usually call warning. We say that Jonnergård gets Fälldin to compromise with Ullsten by warning him.

This is still an operation on component (2) but in a completely different way. Jonnergård does not himself change the external situation; he merely informs about it. He functions as a more direct cause of Fälldin's being supplied with the relevant component (2).

It is, of course, important to observe that the two forms of interaction which we have just studied are not mutually exclusive. Jonnergård's warning does not exclude Ullsten's threat, and vice versa. Both actions could very well occur in one and the same interaction situation. The relation should perhaps be so described as to place Ullsten's threat first in the causal chain, with Jonnergård's warning as the intermediate stage and Fälldin's insight regarding the threat as the final stage.

A warning is often associated with advice or recommendations. Perhaps Jonnergård does not have confidence in Fälldin's judgement in the situation that has arisen. In his opinion concessions should perhaps be made not just to Ullsten but also to Bohman in order to avoid, say, the suspicion that the Liberal Party is being given special treatment.

If Jonnergård also succeeds in convincing Fälldin as to a line of action, he then has interacted in the double sense of his having directly induced both the components (2) and (3) in Fälldin's practical syllogism. The action that is performed in this case is consequently the more complicated action inasmuch as Fälldin compromises with both the Conservatives and the Liberals.

It would certainly also be possible to conceive of Fälldin's finding Jonnergård's recommendation unacceptable due to Fälldin being quite out of sympathy with Conservative policies. However, let us here also assume that Jonnergård, exercising all his ability, succeeds in
convincing Fälldin of the necessity of acting in accordance with the recommendation. We then say that Jonnergård has persuaded Fälldin. To induce a component (3) in an obstinate patient is thus to persuade him.

So much for interaction through manipulation of components (2) and (3) in the practical syllogism.

4. On manipulation of component (4) in the practical syllogism

Regarding manipulation of the fourth component - the ceteris paribus clause of the practical syllogism - we can be brief. Clearly one can influence people simply by making it possible for them to act. The making of it possible can in this context involve at least two things: on the one hand, giving the person the opportunity to act; on the other, giving him the ability to act.

One can, for example, give Mr Fälldin an opportunity to speak to a group of loyal supporters by arranging a meeting, transporting him to the place, seeing to it that the microphones are in working order, and so on. If Fälldin should happen to catch a cold and become hoarse, a doctor can, by treating him, provide him with the ability to speak. These then are two examples of interaction by manipulation of component (4).

To this case should perhaps be added a linguistic comment. Unlike the majority of instances of manipulation of components (2) and (3), here one would not normally use expressions such as an agent sees to it that Fälldin makes a speech or gets Fälldin to make a speech. For interaction of the enabling type the language uses weaker expressions. On the other hand my investigation is not confined to interactions that can be regarded as instances of seeing to it that. The expressions I used in my introduction were more neutral: x performs an action with intention on y in order that y as a result of this will perform an intentional action.
5. On manipulation of component (1) in the practical syllogism

The study of manipulation of the first component presents us with interesting problems. How can one cause a person to acquire a new intention? We can ask the question since it is so natural for us to regard influence as something which occurs in the light of an already existing will or intention. As far as I can see there are two important instances to distinguish between:

(1) determination of an intention in the light of another more general intention,

(ii) determination of a fundamentally new intention which cannot be derived from another intention which the secondary agent already has.

The first instance can be illustrated by the following example:

The former Minister of Justice, Mr Geijer, got Palme to want to reduce the number of prisons by convincing him that this would lead in the long run to a decrease in crime in the country.

When we analyze this instance we find that it is not a genuine case of new creation. Geijer gets Palme to want something, but only in a secondary sense. He demonstrates that a certain goal is a necessary subgoal for the realization of something that Palme already wants or has the intention of achieving. We can describe the situation schematically in the following way:

(1) Palme has the intention of achieving Q

(ii) Palme believes that he is in S

(iii) Palme is convinced by Geijer that P is necessary for Q in S

(iv) Palme acquires the intention of achieving P.
Thus, strictly speaking, we find that what Geijer brings about is not component (1) but component (3) in a schema of a higher order. As a consequence of this there then arises a new intention of a lower order.

This process of a new intention arising in the light of an already existing intention of higher order we can call intention transmission. It is obviously a common form of determination of intentions.

The question is, therefore: Can wills or intentions be created by interaction in a different way? Can an agent induce a genuinely new intention in another agent?

This profound and difficult question cannot, of course, be answered satisfactorily here. However, it seems to me more than reasonable to assume that also such interaction occurs. For example, the sort of influence which results in religious conversion can be seen as a complete exchange of a person's most fundamental goals. This exchange is therefore assumed not to be dependent on the existence of even more fundamental goals in the converted. A certain amount of influence through, for example, advertising and propaganda would seem also to be of this kind.

Influence that consists of creating new desires is perhaps the clearest example of manipulation of component (1) which does not happen in the light of an intention of a higher order. The drugs trafficker who distributes amphetamine to his victim influences him by creating in him a desire for more of the drug. This desire and with it the subsequent intentions do not arise, as far as I can see, in the light of any intention which the victim previously had.

If this reasoning is correct there is an interesting distinction between what we can call rational and irrational interaction with regard to component (1) in a practical syllogism. We call it rational when the interaction on the part or the exposed agent is based on a syllogism of a higher order and irrational when it is not.
6. Summary

I have attempted to elucidate some common forms of human interaction with the aid of a schema for the determination of intention, containing four components. I think I have found that several of our most common interaction concepts can be analyzed with advantage in terms of this schema.

Interactions of the force, threat, warning types, and, in general, information on situations can be regarded as operations on component (2) in the schema.

Persuasion, advice, recommendations and, in general, information about means of achieving goals are operations on component (3) or component (1) since the latter can be regarded as an immediate consequence of a component (3) in a schema of a higher order.

Enabling, providing opportunity, etc, are, finally operations on component (4) in the schema.

Finally, we have thought it reasonable to assume that there is interaction that can operate directly on component (1). To this category belongs the kind of influence which creates desire in an agent.
Notes

1. The main idea in this essay is discussed in certain respects in more detail in the section; Towards an analysis of interactive episodes, in Nordenfelt (1977).

2. My analysis is also applicable to normative interaction such as the giving of orders, prohibition and permission. However, since the analysis of these concepts calls for a somewhat expanded conceptual framework, they cannot be included in this essay.

3. It should be noted that this version of the practical syllogism differs somewhat from that of von Wright (1971), pp. 95-131. For a detailed motivation, see Nordenfelt (1974), pp. 65-67.

For a more detailed presentation and analysis of the syllogism, see the works mentioned, but also Alston (1967) and Churchland (1970).

4. An important question is, of course, whether or not the determination here is of a causal nature, is it or is it not the case that the four components together cause x to do h?


5. Among the interaction concepts discussed here one often distinguishes between those which semantically include a result and those which do not. Force and persuasion belong to the former, which when they are used presuppose that the agent who is forced or persuaded performs the action he is forced or persuaded to do. Among the latter are recommendation, warning and information which do not have any implications regarding the result of the interaction. I am aware of this difference to which, of course, attention should be drawn in a complete analysis of individual interaction concepts. For my purpose - to relate the concepts to a practical syllogism - this distinction is not significant however.

6. The question of the transition from one intention of a higher order to an intention of a lower order presents theoretical problems partly analogous to the general problems connected with the determination of action. For an attempt at analysis, see Nordenfelt (1974), pp. 79-83. Compare also von Wright (1972).

7. The question of the origin of intentions is discussed in von Wright (1976), pp. 427-429.
REFERENCES


ACTION – EXPLANATIONS RECONSIDERED

1. A presentation of the theory

Like many other graduate students of my generation I was perplexed and intrigued by the controversy during the 60s about the alleged specificity of human actions and explanations of human actions. Several arguments for this specificity were proposed, mainly by members of the post-Wittgensteinian and post-Collingwoodian traditions in philosophy. The post-Wittgensteinians were more numerous and they were more frequently represented at Oxford from where I took most of my impulses.

The post-Wittgensteinians (represented by such people as Abe Melden and Richard Taylor) put forward the following important and at the same time perplexing idea: there is something special about explanation of human actions because there is a peculiar relation between the typical explanantia of human actions and the human actions themselves. A typical explanans of a human action is an intention. One explains why a person does something by referring to his intentions. This kind of explanation, the argument goes, is not an ordinary causal explanation of the kind that we meet in the natural sciences. An intention cannot be a cause of the action that it explains. This is so because the relation between the intention and the intended action is in some sense logical. The reason for this is in its turn that an identifying description of the intention, for instance an identifying description of my intention to make a speech today, contains a reference to the very action of making a speech. Hence, according to the argument, my intention to make a speech is logically related to my action. Therefore, the intention cannot cause the action. Therefore, an action-explanation referring to an intention is not a causal explanation.

Now, few arguments have been so violently and forcefully attacked in modern times as this one. One need not have much imagination to find weaknesses in it. A particularly weak point of course is the alleged connection between descriptive reference and logical relation. Moreover, what kind of logical relation do they have in mind and why does it exclude a causal relation?
Although this version of the neo-Wittgensteinian idea can be said to be refuted, the protagonists of the general line of thought kept finding new and more convincing arguments. The logical-connection argument returned in a way into which we shall look much closer shortly.

The Collingwoodian line of thought was used not so much to deny the causal character of action-explanations, but rather to differentiate action-explanations from natural scientific explanations. The focus here is the pattern of explanation, whether action-explanations really follow the pattern proposed and analysed in the logical empiricist tradition, mainly by such people as Carl Hempel.

According to William Dray, the most important neo-Collingwoodian, explanations of human actions do not contain any reference to universal empirical laws as Hempel contends that they should. As is well-known, Hempel had put forward a schema for scientific explanation containing the following elements:

\[
L_1 \ldots L_n \\
C_1 \ldots C_n \\
\frac{}{E}
\]

The schema contains a universal law premise, an initial condition premise, and the explanandum (or strictly speaking, a sentence expressing the explanandum), which is to be deducible from the premises. This is the famous deductive-nomological model of explanation.

This model has been followed by several slightly different versions, some of which contain probabilistic laws instead of universal deterministic laws. A common feature of the explanans, however, always is that it contains some law-like premise.

Dray denies that any of these models is applicable to explanations of human actions. He argues instead for the following: in explaining why somebody does something there is no reference, neither explicit nor implicit, to any general laws. When I explain why Peter does
something I don't try to find some information about how people in
general behave, says Dray. Instead I need to know something more
about Peter, what he intended in the situation in question, what he
thought about the situation, what he knew about possible means to
fulfill his intentions and so on. In general, I want to reenact the
thought of Peter, as Collingwood would have put it.

Now, the post-Wittgensteinian idea of the logical connection and the
Collingwoodian idea of reconstructing thought and, in addition, the
idea of the basic teleological nature of action-explanations were
combined in the important theory put forward by von Wright, first
mentioned in a paper in 1968, but further elaborated in 1971 in his
book *Explanation and Understanding*.

He there contends that the typical action-explanation contains the
material components suggested by the neo-Collingwoodians. In the
typical action-explanation we cite the intention of the agent; we
also cite certain beliefs or convictions of his, in particular his
beliefs or convictions about the situation and about possible means
to achieve the ends.

Von Wright, however, also claims (at least in his first expositions
of the idea) that his explanation constitutes some kind of a logical
argument. The explanans, in particular the intention, is logically
connected to the explanandum, the action. Von Wright thereby revives
the logical-connection-thesis although in a new version. He does not
refer to Melden's idea of linguistic reference. He rather maintains
that the explanatory argument is some kind of logical argument. The
nature of this argument is, however, left obscure in von Wright's
text. It has, it is claimed, some similarities with deduction.
Still, it is not supposed to be ordinary deduction.

The resulting explanatory schema, which von Wright initially called
a schema of practical inference or practical syllogism, is of the
following kind:
A intends to bring about P
2) A believes (is convinced) that he is in situation S
3) A believes (is convinced) that in S he will not bring about P unless he does h
4) A is capable of doing h and not prevented from doing h

A sets himself to do h.

Observe that von Wright has not himself formulated the schema exactly in this way. This is my reconstruction of the schema which suited many of my analytical purposes in my dissertation (Nordenfelt 1974). (Essentially I have added the references to the situation and I have moved the capability-clause to the premises. In von Wright's first version this was a clause added to the conclusion).

Observe also that this is not the final and most careful formulation of the schema. Such formulations would also contain time-clauses. We would have to give requirements concerning the maintenance of the intentions and beliefs over a certain period of time. I have tried to give more careful formulations in my dissertation. Such formulations can also be found in Tuomela 1977. For our purposes we need not bother about these details.

One important thing about the schema ought to be noted. This concerns the notion of intention. In von Wright's theory this notion is a very strong notion of will. An intention is to be distinguished from a want. The distinction between the two can be illustrated thus: One can want to walk to the moon, but one cannot intend to walk to the moon. Having a want is compatible with knowing that one cannot realize the want. Having an intention, however, is not compatible with knowing that one cannot realize it. If one intends to bring something about one is convinced (or at least strongly believes) that one is able to bring it about. I think this explication of the concept of intention is reasonable and that it has support in ordinary language. Consider e.g. the fact that intentions can be formed, and the forming of an intention is a decision. It seems absurd to say that one has decided to bring something about, which one does not believe that one can bring about.
The following idea of which I am an adherent goes in the same direction. I would say that, whereas there may be conflicting wants, there may not be conflicting intentions, at least not conflicting intentions of which the agent is aware. But this whole issue about conflicts is complicated and a thorough discussion of it would take us away from our main path.

How, then, is the intentional explanation of action as presented by von Wright related to the standard model of scientific explanation?

von Wright explicitly says the following:

a) Intentional explanations is not a kind of causal explanation. It cannot be causal, since intentions and actions are logically related.

b) Intentional explanation does not involve any general laws. All the constituents of the explanans refer to the individual agent, whose action is to be explained.

Hence, intentional explanation is non-causal and non-Hempelian. In short, intentional explanation of action is something peculiar, distinct from ordinary scientific explanation. These statements constitute the platforms for my reasoning. Let me now give you a rough idea of what I intend to do.

My purpose is to give an interpretation of intentional explanation, which remains, I hope, faithful to von Wright's basic ideas, but which at the same time shows the fundamental similarities between the schema of intentional explanation and the general Hempelian schema of deductive-nomological explanation. My program could perhaps be said to be a program of unified science.

This position entails, first, my accepting the material part of the neo-Collingwoodian claim.
I accept that the typical and legitimate action-explanation refers to the agent's thoughts, more specifically his intentions and convictions (or beliefs). I also accept that such an explanation should be reconstructed in the form presented above.

I shall also accept that there is some insight embedded in the idea of a logical connection between an intention and its intended action. I shall, however, interpret this insight in a way which was not envisaged by any proponents of the logical connection thesis.

My contribution, the analytical part of my work, concerns a logical analysis of the intentional explanatory argument. This analysis shows, I hope, that the argument is basically similar to Hempel's D-N-schema.

As a preparation I shall make the following observations. First observe something which puts the logical-connection-thesis in a different light.

a) Hempel's explanatory schemata are of course also logical arguments. With Hempel the explanandum follows logically from the explanans.

So the fact, that a sentence describing an action to be explained follows logically from a conjunction of explanans-sentences need not indicate anything peculiar about action-explanation.

b) Observe also that logical conclusiveness can be obtained in an explanatory schema without the help of a universal premise. We shall as illustrations consider the structure of so-called dispositional explanations.

The notion of a disposition is in fact a key-notion in my account. My whole analysis, in fact, relies on the hypothesis that intentions could be viewed as a species of dispositions. Alas, they are very particular dispositions. I don't at all claim that all dispositions to act are intentions. In order for something to be an intention
very peculiar requirements have to be fulfilled. Still, I maintain, and I think I have good reasons for my contention, intentions fulfill the following basic requirement of a disposition. Intentions can, like dispositions be partly analysed (observe the qualification: partly) by a hypothetical statement. When \( X \) has a disposition to \( \phi \), then \( X \) has a property which is such that if certain conditions pertaining to \( X \) are the case, then \( X \) will \( \phi \). Likewise, I propose the following schematic analysis of the proposition "\( X \) has the intention to bring about a state of affairs \( P \)" \( X \) has a property which is such that if certain conditions pertaining to \( X \) are the case, then \( X \) will perform a certain action in the direction of \( P \).

Let us, however, first consider some basic properties of the dispositional explanatory schema. How should it be analysed and how could it be put into a deductive logical form?

Consider the classical example of brittleness. We wish to explain the fact that a window breaks by referring to its dispositional property brittleness and, in addition, the fact that something hard hit it.

A traditional way of systematising these pieces of information is the following: The window breaks because the window was hit upon by a hard object and because of that property of the window, viz. the brittleness, which is such that if the window is hit upon by a hard object, then it breaks. In this formulation it is evident that the explanandum follows logically from the explanans. The logical structure is the following:

\[
\begin{align*}
Fa & \rightarrow Ga \\
\therefore \quad Fa \\
\hline
_{Ga}
\end{align*}
\]

We see that this is an explanation which is deductive in form, hence fulfilling one of Hempel's requirements of an explanation. Still it is not deductive in virtue of the existence of a universal law. It is deductive in virtue of a dispositional hypothetical.
This, then, is the simple logic that I wish to apply to the intentional explanatory schema put forward above. I propose a dispositional analysis of intentions, and I wish to show that the schema of intentional explanation is deductive in the way the ordinary dispositional paradigm is.

When it comes to details the situation is, however, more complicated with intentions. This can be shown by the simple fact that in the intentional case there is normally no direct reference to the action to be explained. In our simple dispositional paradigm the consequent of the hypothetical is identical with the conclusion of the argument. This is not normally so in the intentional case. One intends to bring about a goal, a state of affairs P, and finally one performs an action h distinct from P but which is believed to be conducive to P.

What then is the partial analysis of intentions that I propose? An intention, I think, is a disposition not just to perform a single action but to perform a number of actions, namely all those actions which the agent believes to be necessary for the achievement of the intended state. Hence, in the intentional analysis we need some universal quantification, which is absent in the simple dispositional paradigm, but observe: this does not transform the expression into a universal law. The expression still refers to a particular agent A and no other agent; it is only that A is disposed to do more than one action when he has an intention. He is disposed to perform all actions which have a particular property.\(^2\)

Consider now the following analysis of "A intends to bring about P." This means: A has a property which is such that A will perform all those actions which A believes are necessary for bringing about P in the situation in which he believes he is.

Put in a semiformal dress it becomes: A has a property which is such that

For all X, if A believes that he is in S and that he must do X in S in order to bring about P, and if A can do X, then A will do X.
In Nordenfelt (1974) I give a more fully formal version partly using some logical operators proposed in Kanger (1972). However, I abstain from putting this formula down here. It involves difficulties of its own and will distract our attention from my main reasoning.

Having this as a first premise in an intentional explanation, we can easily see how the schema becomes deductive. We need only insert the other premises (2-4) and we have: A sets himself to do h, as a conclusion.

This, then, in a rough form concludes the presentation of my interpretation of the intentional explanatory schema. In short, the result is the following:

* The schema has the form of a deductive logical argument.

* It contains no universal law, however. It is deductive in virtue of the existence of a dispositional hypothetical.

* But since dispositional explanations occur outside the field of action-explanations, the intentional explanatory schema is in a sense reduced to a kind of explanation which is not peculiar to the humanities.

It could now, however, be asked: what implication does this solution have for the anti-causal idea? Does it still mean that intentions are not causes as the proponents of the logical connection argument insist?

The question requires a careful answer. I shall now first give only a partial answer and return to the issue in replying to an objection to my theory. We shall first bear in mind that in the intentional explanation as reconstructed by me we do not use the whole content of what it means to have an intention. As we have mentioned earlier, to intend also means to believe that one can realize the intended
end. This information is not necessary for the deduction of our ex-
planandum. There may be other elements contained in the analysis of: "A intends to bring about P". Likewise, there are other elements than the ones used in a dispositional explanation contained in the full analysis of, for instance, "this window is brittle".

This should be borne in mind because the answer that I give now concerns only that part of the analysis of dispositions and intentions which is contained in the explanatory arguments, viz. the hypotheticals. And the question can now be framed: Can a hypothetical fact be a cause?

How do we look upon things in the case of a Hempelian explanatory argument? What things are causes and what are not causes among the premises in this argument?

If we deal with a Hempelian reconstruction of a causal explanation it is obvious that the cause or the causes are the factors which are put among the initial conditions. The universal law itself, the universal hypothetical, is not a cause, although it is of course one of the premises in the Hempelian reconstruction of a causal explanation.

Likewise in a dispositional explanation, in general, it is the second premise, or that which is signified by the second premise, which is considered to be the cause. In our brittleness case, it is the fact that the window is hit which is the cause. The hypothetical fact used in the dispositional explanation is not of the right category to be a cause. Hence, the answer to our question whether the dispositional hypothetical is a cause is: no. This means also that the intentional hypothetical is not of the right type to be a cause.

This conclusion, however, does not have anything to do with a logical-connection-argument. It is a conclusion based on considerations about the ontological status of laws and hypothetical facts.
(One ought to be able to distinguish between that which is a cause, and that which the cause is a cause in virtue of viz. a law or a dispositional hypothetical. In my dissertation I in fact coined the term "semi-universal law" for the dispositional hypothetical facts).

But observe again, the hypothetical is not the whole analysis of the disposition. The hypothetical is true in virtue of a categorical fact. Nothing prevents this categorical fact from being a cause. I shall return to this issue below.

2. A defence of the theory

Consider now some basic questions that can be raised concerning my analysis:

First by what arguments can I back the supposition that intentions are a kind of dispositions?

The intuitive tests by which I can support the dispositional nature of intentions are identical with or similar to the tests or arguments put forward by some proponents of the logical connection thesis.

Some of them, in particular, von Wright, ask: How do we confirm and how do we falsify hypotheses about intentions? Well, they say we do this by looking at the agent's actions. If we know the beliefs of a particular agent and have a hypothesis about his intentions, then his subsequent actions or non-actions function as the test.

Assume that we put forward the hypothesis that Mauno Koivisto has the intention to become renominated as a candidate for the presidency. We know that Koivisto knows all the measures that have to be taken in order for this situation to be realized. He must, for instance, see to it that a reelection committee is established. He may have to see to it, that some part of the constitution is changed. Assume also that we know that Koivisto is both physically and mentally capable of taking these measures.
How do we test our hypothesis about the intention? Obviously, we would ask Koivisto or we could ask his associates. But the answers to these questions would not be conclusive. The people involved may not know or they could lie, or perhaps abstain from answering.

The ultimate answer could only be given by the observation of Koivisto's own actions. Does he perform the actions he considers necessary for his goal or not? If he does, we have confirmed (but of course not completely proved) the hypothesis. If he does not, then we have disproved the hypothesis.

If he knows how to act and is able to act and does not act, then it cannot be true that he really intends to become the president again. He may of course still have an idle wish or he may hesitatingly want. But he cannot really intend.

So the argument goes.

I find this argument a strong one. I think it is a striking analysis of our ordinary notion of intention. But of course it relies on my intuitions about the use of language. And I can obviously never convince someone who claims that his intuitions are different from these.

The second question is the following:

Is there not a striking difference between the paradigm dispositional explanation and the intentional explanation? The intentional explanation contains a clause about the agent's capabilities. The dispositional paradigm does not seem to have anything equivalent.

To this I will answer that the difference is just apparent. The dispositional paradigm as we have presented it is incomplete. Of course, the dispositional hypothetical does not hold true under all kinds of circumstances. In that hypothetical there is, as in fact there is in all universal laws, a ceteris paribus clause built in. A brittle window does not necessarily break when something hard hits
it. There may be preventing factors present in a particular situation; someone may put his hand in front of the window and catch the object approaching the window. Or the window may at a particular moment be strengthened by some support behind it, etc.

Hence, I would say that in all detailed and careful formulations of dispositional explanations there must be a ceteris paribus clause present, both in the antecedent of the hypothetical and as a separate premise indicating that there is nothing preventing the initial condition from operating. If this is true, the intentional explanatory schema is not particular in this respect.

Thirdly, is there not a striking difference between intentions and ordinary dispositions in that the former come and go, normally existing only for a short period of time, whereas dispositions are lasting attributes of objects?

As far as I can see, there is no difference in principle here. It may be true that most of the celebrated examples of dispositions are lasting properties of objects. Brittleness certainly is. But of course they need not be. Another celebrated natural dispositional property, the property of being magnetic, can be temporary. An object may be magnetic for a short while and then lose this property.

Moreover, intentions need not be as temporary as this argument contends. Some of our most basic intentions, like our intentions to survive, can be lasting for almost a whole life.

Still, some people complain, there is another oddity pertaining to intentions differentiating then from what we normally call dispositions.

Typically, intentions do not result in actions in any immediate way, even if the premises of the syllogism are fulfilled. Suppose that Koivisto intends to renew his presidency. Suppose he knows all the necessary measures to be taken to reach this goal. This, however, need not result in any immediate actions of his. There is then no action of his, right now, although all the premises of the syllogism are fulfilled right now.
The intuitive explanation, of course, is that there are no present actions which could be expedient for his purpose. Koivisto believes that the actions which are necessary for attaining the presidency should be performed at times later than this time.

This feature of a delayed consequence is obviously often a feature of intentionality. But is it really peculiar to the field of determination of human action? Can we not find any "natural" dispositions that have delayed consequences in the way indicated above?

Obviously, there are good examples of such mechanisms in certain manufactured objects. Consider a bomb with a delayed release mechanism. It is in principle easy to so devise a bomb that, if it is primed at a time $t_0$, a considerable period of time elapses before the bomb explodes at a much later time, say $t_{10}$. Also in this case there is a delay from the time of the occurrence of the initial condition to the time of the consequence. The feature of delay is, then, nothing absolutely peculiar to intentions.

Fourthly, do intentions really have all the properties that we normally ascribe to dispositions? In particular, there are those features which are sometimes called dispositional grounds or grounds for dispositions. But are there any similar grounds for intentions?

I have previously already alluded to these features. I said that a hypothetical does not constitute a complete analysis of a dispositional concept. When one ascribes a disposition to an object one does not just ascribe an hypothetical to it. One ascribes a property to it, which is, among other things, such that an hypothetical holds true. And this property can of course, in principle, be described in categorical terms. We can describe the molecular structure of a window in categorical terms. Hence, we can independently describe that structure which accounts for the fact that the window breaks, when it is hit.

Now somebody might ask: Is this really possible with intentions? Is there a property belonging to a human being which accounts for the truth of the intentional hypothetical and which is describable in categorical terms?
Here, we must, of course, distinguish between the questions: is there such a property? and: do we now know what it is so that we can describe it?

I quite agree that we don't now know of any such property. We cannot describe any property of me in, for instance, neurophysiological terms, which will account for my intentional hypothetical to go back to Sweden in a few days. This is, however, true of many other dispositions as well. We don't know exactly what structure of, for instance, a particular chromosome accounts for its tendency to divide in exactly the way it does. Still, we have the firm hypothesis that there is such a structure which will eventually account for the truth of this tendency.

Similarly, I find it more than plausible to assume that there is an internal structure of a human being which accounts for the fact that a certain intentional hypothetical of his is true. I don't here want to speculate about the exact nature of this structure. I don't even have to make a decision whether it is mental or perhaps ultimately neurological. My own metaphysics happens to be materialistic. I believe that there is an ultimate neurological or neurophysiological ground accounting for the intentional hypothetical.

I don't however believe and I am not forced to assume that there has to be any particular neurological setup. There could be a great number of alternative setups accounting for the same intention. As there are, of course, many alternative molecular structures which could account for brittleness.

To conclude, I find it more than plausible that intentions are like dispositions in general in the way that they have grounds which are in principle stateable in categorical terms.

And now we have reasons to return to our question about causation. It is now easier to see in what way dispositions, and intentions in particular, can be viewed as causes.
It is obvious that a sufficient condition of a window's breaking includes not only that it has been hit but also that it has a particular molecular structure. The molecular structure is one of the non-redundant parts of the sufficient condition of the window's breaking. Hence, it is also one of the causes. (I am now using a rather general notion of cause. I ignore the pragmatic considerations that one could make for picking out one particular part of a sufficient condition as the cause.)

A sufficient condition for a human being's acting does not just include his beliefs (or their neurological counterparts) but also the ground of the intention, be it physical or mental. Hence, the intentional ground can of course be viewed as a cause of the action in question.

Does this not, then, have important consequences for the explanation of actions? Can't we then construct explanations where the dispositional or intentional grounds are included among the initial conditions? Can't these explanations be completed by a universal law connecting the initial conditions, and the consequence, whether it be a description of an action or some other event? And would this not be an ordinary deductive-nomological explanation? Have we then not gone all the way back to Hempel?

Yes, indeed, this is in principle possible, as I see it. At least, I cannot for the moment see any convincing argument why it should not be possible.

The trouble, however, is that we don't have the material for giving such explanations in general. What we have now are other kinds of explanations using, if you wish, more superficial information. Still, as I have tried to show, these explanations can be put in a deductive conclusive form, in virtue of the fact that a disposition partly is of hypothetical character.

Let me conclude this paper with some brief comments on some of Raimo Tuomela's ideas in his very rich and comprehensive book Human Action and Its Explanation (Tuomela 1977).
Tuomela deals extensively with the matters discussed by me here. His general outlook and analytic program is similar to mine. One of his main purposes is to put action-explanations into a more general framework of scientific explanation.

Tuomela also uses the practical inference as one of his platforms for analysis. Like me Tuomela both tries to understand the intuitions about the logical conclusiveness of the practical inference, and also tries to argue that intentions are partial causes of actions.

Moreover, Tuomela offers analyses of mental dispositional concepts which have obvious resemblances to my analysis of intention and also to my analysis of the concept of want.

In spite of this our conclusions appear to be rather different. In explicating the logical nature of the practical inference Tuomela does not make use of his dispositional analysis of mental concepts. Instead he introduces a general conceptual truth L, which he adds to the premises of the practical inference in order to make it a logically conclusive argument.

Expressed in ordinary language, L has the following form:

Whenever A intends to bring about E at t and considers the doing of X no later than t' necessary for this, and if normal conditions obtain, then A will do X no later than when he thinks the time t' has arrived.

Tuomela does not in this formulation explicitly quantify over actions and agents, but later on in the text he says that he could very well do that. And he explicitly calls L a generalization, a conceptual generalization. Now the practical inference can be said to be logically conclusive in virtue of the truth of L.

Observe that L is not, despite superficial similarities, equivalent to my intentional hypothetical. L cannot be a partial analysis of the concept of intention. The expression "A intends" is part of L itself.
About this generalization L Tuomela goes on to say the following on p. 181.

L can be regarded as representing a conceptual truth within or relative to the framework of agency. It just makes a conceptually true statement about certain (generic) intentions, beliefs and actions.

The clause "relative to the framework of agency" is important to Tuomela. He admits that L is not always true. There may be instances of all the premises of L being fulfilled but no action being performed. In this context Tuomela considers an argument called the tyrantsshooting argument.

Suppose an agent has decided to shoot a tyrant. He thinks that it is necessary to pull the trigger of his revolver when standing in front of the tyrant. Let us assume that all of the so-called normal conditions obtain. However, when the time ... for acting comes, nothing happens. The agent does not even set himself to pull the trigger. No effects of paralysis or anything related are found - the normal conditions hold true (p. 188).

I have already indicated my standpoint concerning such a case. I would consider the absence of action a conclusive sign of the falsity of one of the premises, perhaps the intentional premise. If all normal conditions obtain and the belief-premises are really fulfilled, it cannot be true that the agent really intends to shoot the tyrant. He may want to, he may have a strong want to do so, he may even at one point have decided to do so, i.e. formed an intention to do so, but the absence of action still is a sign that at the moment of action the intention must have vanished.

Tuomela's reply is different. Since I do not completely understand his solution, I shall quote his central passage on this issue in extenso.
My solution to the puzzling situation is as follows. While I accept the descriptive practical syllogism as logically conclusive ... I do not regard the tyrantshooting example as a counterexample to the logical conclusiveness of the practical syllogism. Considering that example as it was described earlier, I think nothing conceptual is missing in it. What is missing are the underlying dynamics: there is no causal connection between the intending and the action. That is, the agent's intending did not turn into a causally effective trying at all in this example, and this suffices to explain away the example as a counterexample. To put this differently, the agent was not fully "one of us" or a "full-fledged" member of our community at the time when the action was supposed to occur (p 190).

It seems then that Tuomela requires some conditions to obtain about the agent before applying the practical syllogistic schema at all. The agent must at the time of application be a real agent, he must be "one of us".

It is difficult to see what this means and how much this explains. It is also difficult to see how Tuomela squares these considerations about the non-acting tyrant and his own dispositional analysis of wants, and intention which is given in another context in his book. (See e.g. p. 221).

To intend that p, means, roughly, being in such a dispositional state with the structure p..., that this state, given suitable internal and external circumstances, will cause the bodily behavior needed for the satisfaction of the intention.

Here, obviously the causal dynamics is part of the meaning of intention, part of the concept of intention. It is then difficult to see what it means to ascribe an intention to a man who is not one of us. Do we then not have another concept of intention?
The relationship between these pieces of analysis is then not quite clear to me. Tuomela does not, as far as I can see, make crossreferences between his dispositional analysis of want and intentions and his analysis of the practical syllogism. (He makes such references later on in the book, but there he does not discuss the possibility of absence of causal dynamics).

One of the results of this is the following: According to Tuomela's explicit interpretation of the practical syllogism, the syllogism is not sufficient as a scientific explanatory schema. (It may, however, suffice for the purpose of interpretative understanding.) Since, according to Tuomela, the syllogism itself does not guarantee any causal connection, a scientific explanatory schema must add further premises stating the actual causal relation between the intentions and beliefs on the one hand and the action on the other. One wonders, however, why these additions had to be necessary, had he taken his own analysis of intentions and wants more seriously.

A solution very similar to mine could be drawn from the material in Tuomela's book. He does however himself not draw it.

Notes

1 The idea that there is a logical connection between intentions and intended actions is quite clearly expressed in von Wright (1971). von Wright (1975), however, qualifies this in the following way:

This opinion is sometimes called the Logical Connexion Argument or the intentionalist view. I think it comes nearer the truth than the causalist view. But it is difficult to argue for it correctly.

Thus I think it is a mistake - of which I myself and others have been guilty - to understand the intentionalist view to mean that there is a relation of logical entailment between the premises and the conclusion of a practical argument (p, 422).

2 In a criticism of my views Raimo Tuomela mistakenly interprets my analysis of an intention as a universal law. See Tuomela (1977), pp. 287-288.
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ON NOT BEING ABLE TO ACT

In this paper I shall try to utilize some recent action-theoretic insights in characterizing certain concepts in clinical medicine. My main purpose is to sketch a reconstruction of the notion of disability. Let me first present some of the background.

1. The International Classification of Impairments, Disabilities, and Handicaps (ICIDH 1980)

The World Health Organization has recently issued a publication with the above title. The purpose of this book is to supplement a previously existing classification and nomenclature of diseases (ICD 1977). The latter, it is claimed, fails to reflect the full range of problems that lead people to make contact with a health care system. Patients don't normally approach a doctor or a hospital because of the presence of a known disease. Most patients are ignorant about the nature and terminology of diseases. They complain instead about a symptom, a visible impairment, a disability or a handicap. Hence, at the initial stage (and also at later stages when acute disease has vanished) a doctor must characterize a patient in terms of various observable consequences of disease. Among these are disabilities or handicaps. Hence, the need for an efficient nomenclature and classification in this area.

ICIDH 1980 aims at fulfilling this need. It gives explicit definitions of the notions of impairment, disability, and handicap and it provides a comprehensive taxonomic system for these with groups, subgroups and species. This work has many merits but unfortunately some fatal defects too mainly regarding the precision of definition. I think that some of these defects can be revealed and removed by a systematic reconstruction of the concepts involved. In the case of disabilities and handicaps I think that the platform for reconstruction should be taken from contemporary action theory.
2. Towards a reconstruction of the notion of disability: some fundamental concepts

I follow Goldman (1970) basically in introducing the concepts of basic action, causal generation and conventional generation. (Cp. also Åqvist (1974)). The intuitive idea here is the following: In acting an agent primarily moves a part of his body (for instance his head or one of his limbs) or abstains from doing so (by omission). By making such a primary movement the agent can accomplish an indefinite variety of things. By moving a finger he can press a button, and by pressing the button he can start an engine, ring a bell, turn on a lamp, or get a cup of coffee from a coffee machine. Such a generative chain can be extended indefinitely.

What puts a limit to such a chain, as a chain incorporated in one action, is (at least in the standard theory) the intention of the agent. Those consequences of a primary movement which are not intended by the agent are not parts of any action of his.

What I have called a primary movement of the body, made intentionally, is a basic action. Such an action can generate other actions. If 0 is a basic action and if A's by 0-ing, then A's 0-ing is generated by his 0-ing.

Generation can be of both a causal and a conventional kind. In A starts the machine by pressing the button, the generation is causal. The pressing of the button causes the machine to work. In A greets B by nodding his head, the generation is conventional. Nodding one's head, given appropriate circumstances counts (conventionally) as greeting. Generated actions of the two kinds will in the following be called accomplishments. There may be causal, conventional and mixed accomplishments (involving both causal and conventional generation).

There is a further dimension of complexity to some actions. These are actions involving not only the causal or conventional working of the world, but also a sequence of basic actions. (Each such basic action in turn normally generates one or more accomplishments). Tra-
welling around Europe, building a house and playing chess are such complex actions. Actions formed by sequences of other actions will in the following be called activities. Activities may, but need not be, goal-directed. Climbing Mount Everest is a goal-directed activity; playing with a ball is not.

An important general observation is the following: most accomplishments and activities can be performed in alternative ways. A can kill a person not only by shooting him or poisoning him but also by stabbing him; A can travel through Europe by going clockwise, anticlockwise or just at random. This feature is of utmost importance for the theory of disability and rehabilitation, as we will see.

3. Conditions for ability

I assume here as a primitive notion the ability to perform a basic action. Conditions for the ability to perform an accomplishment then turn out as follows:

A is able to perform an accomplishment Acc if and only if

(i) there is at least one action-chain $B \to \ldots \to Acc$ (where $B$ is a basic action) given an opportunity $O$ for Acc

(ii) A is able to perform $B$

(iii) A is convinced that (i) and (ii) are true

(iv) $O$ is present

(v) A identifies $O$.

In the case of some conventional accomplishments we also have the further condition:

(vi) A has the authority to perform Acc by doing $B$ in $O$. 
Let us comment here on the concepts just introduced. The notion of opportunity is well established in the literature and the need for it is obvious. Many actions require certain spatio-temporal or other relations between the agent and the world before they can be generated or formed in sequences. Such requirements are called opportunities. An opportunity for travelling in Hungary is being in Hungary, an opportunity for marrying includes being together with a member of the opposite sex in front of a priest.

The notion of authority is needed for those particular actions which require authorized agents. Such actions are: issuing health certificates, sentencing criminals, and declaring war.

Note the role that certain mental operations play in ability. Knowledge of relevant generative mechanisms is a prerequisite, as is the ability to identify opportunities.

The list of conditions for the ability to perform an activity can easily be expanded in an analogous way.

4. Reasons for non-ability

Given the above analysis of ability, the reasons for non-ability can be classified accordingly. Let us illustrate this with the help of a causal accomplishment: starting the engine of a machine.

(i) There is no action-chain $X + \ldots + \text{Acc}$ (where "$X$" is a variable over basic actions).

Example: The starting button has been disconnected and there is no alternative way of starting the machine.

(ii) A does not know of any action-chain $X + \ldots + \text{Acc}$. Example: A is ignorant of how to start the machine.

On the assumption that there is a chain $B + \ldots + \text{Acc}$ known to A we have the following alternatives:
(iii) A is not able to perform B.
Example: A's arm is paralysed.

(iv) A does not know that he is able to perform B.
Example: A does not know that his previously paralysed arm is fit again.

(v) There is no opportunity for Acc by the performance of B.
Example: A is not in a position to press the starting button of the machine.

(vi) A does not identify any opportunity for Acc.
Example: Although A is in the proximate vicinity of the machine he cannot find the starting button.

With certain conventional actions we can have the further reason:

(vii) A does not have the authority to perform Acc.
Example: A is not able to issue a health certificate since he has lost his doctor's licence.

5. From non-ability to disability

So much for the neutral characterization of not being able to perform a certain action. We call this kind of incompetence simply non-ability. Not all non-abilities, however, are disabilities in the sense of the health care system. For instance, the following non-abilities of mine are not social or medical disabilities: my not being able to repair an automobile, make Béarnaise sauce, solve an equation of third degree, vote in Parliament and lift a weight of 300 pounds.

A key concept for the understanding of disability is, I believe, the concept of need. Roughly, a disability of mine is a non-ability to fulfill one of my fundamental needs.
Needs are necessary conditions for achieving goals. So called physiological needs are necessary conditions for the realisation of vital goals, in particular the survival of the individual himself and the survival of the species. Since goals vary with values, so do needs and as a consequence the extension of the term "disability". In the context of health care there is admittedly less variability. The physiological needs here constitute a kernel. However, in most societies the disability-determining needs are more numerous. For us in Sweden a minimal goal is far beyond the barest elements of survival; it extends in the direction of a reasonably pleasant and harmonious life. A concrete interpretation of this level is given in the social and medical legislation of the society in question.

Needs and disabilities are relative to societies in a further sense. This can be illustrated using physiological needs as a platform. One physiological need is the acquisition of food. The acquisition of food requires different measures in primitive societies and in highly industrialized Western societies. In the latter case it normally presupposes obtaining salaries and hence professional life. Professional life may involve exceedingly complicated actions varying from profession to profession. This in its turn introduces a relativization to individuals. A professor and a labourer may have identical non-abilities, for instance not being able to lift weights. This is a disability to the labourer but not to the professor.

6. Reasons for disabilities

My characterization of disabilities is, however, not yet complete. If your legs are bound and this is the reason why you are unable to move them, then your non-ability is not a disability. If you are prevented from travelling to Stockholm for the reason that your funds are low, then again your non-ability is not a disability. Still, both actions may be necessary for fulfilling your basic needs. What then are the further criteria for disability?
In general, I believe that we locate these criteria in the internal conditions of the agent. A person is disabled if he is unable to perform certain necessary actions for reasons which are internal to him. Typically, such reasons concern his ability to perform basic actions. There is a defect in the agent's neurological system or his muscles so that he cannot move a part of his body in the desired way, even if there is no external prevention.

Internal non-ability to perform basic actions, however, is not the only case. Other internal conditions are our mental abilities, some of which are essential for the generation of accomplishments and the formation of activities. In order to generate the accomplishment of opening a bank account one must know a number of things. One must know of at least one possible generating chain leading to the opening of the bank account and one must know all the conditions constituting an opportunity for such a generation.

Such knowledge presupposes some more basic mental abilities, the abilities of learning and of drawing conclusions - in short some minimal intelligence. Those people who cannot, for intellectual reasons, acquire action-producing knowledge are the mentally disabled.

Hence, physical disability concerns basic actions, mental disability, in general, concerns the production of more complex actions.

In acknowledging that the internal conditions of the agent are the essential criteria for disability we must also note that there is a dialectic relationship between environment and internal ability.

It is the environment that sets up the constraints on the agent's physical and mental abilities. A rough climate demands more (in physical respects) of an agent if he is to survive than does a pleasant climate. Accordingly, one is, due to external circumstances, more easily disabled on Greenland than in Greece. A complicated Western society requires more (in mental respects) than did the stone age society. Accordingly, due to conventional external circumstances one is more easily mentally disabled in Sweden today than in Sweden 2000 years ago. It therefore makes sense to say that one may be inherently disabled for external reasons.
This observation does not make all talk of internal conditions for ability pointless. In a particular context of communication one takes up the discussion against a background of a standard and relatively fixed environment. Presupposing such an environment, we can intelligibly talk of abilities and non-abilities arising for internal reasons.

7. On rehabilitation

Having appreciated the dialectics between external circumstances and internal conditions we are led in a natural way to identify the relation between rehabilitating the disabled and modifying the environment.

By rehabilitation is meant the (at least partial) enabling of a disabled person to do what he could not do as a disabled person. Much rehabilitation is certainly directed towards the manipulation of internal mechanisms. The disabled are put into training, either physical or mental. But much rehabilitation also involves the manipulation of the environment, for instance the introduction of assisting devices such as the wheel chair, or even the introduction of a completely new proximate environment, such as a specially equipped apartment. By such transformations the disabled person may become able to fulfill his basic needs.

In general, a central task of rehabilitation consists in finding alternative ways of achieving essential purposes. It becomes important to notice that very few accomplishments or activities require one and only one chain or sequence of actions. Rehabilitation may therefore simply entail new knowledge on behalf of the agent. He may have to be informed about other causal mechanisms and other conventions, which when manipulated by him can yield the desired results.
9. A notion of disability delimited

By way of summary my ideas about disability can be collected together as follows:

A is disabled with respect to the action $\phi$ in the situation $S$ if and only if

(i) Performing $\phi$ is a need for $A$ in $S$

(ii) $A$ is non-able to perform $\phi$ in $S$

(iii) The reasons for (ii) are, given $S$, internal to $A$.

The reasons mentioned in (iii) may be of two kinds, physical or mental. Physical defects prevent the basic actions. Mental defects (such as those concerning intelligence, knowledge, and perception) prevent the production of more complicated actions viz. accomplishments and activities.

Physical and mental capacities are relative to environments. Depending on the environment one and the same internal set-up may dispose a person to have both ability and non-ability in respect of some action.

Note

The distinction between accomplishments and activities is similar to one drawn by Pörn (1977), but where he uses another terminology. My choice of terms is influenced by the nomenclature presented in Nordefelt (1977). Observe that this terminology differs slightly from the one used in the two first papers in this volume.
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