

THE EXTENSIONAL PRAGMATICS OF COMMANDS

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This investigation* shall view imperatival discourse as a distinct communication event. However, unlike other attempts this approach is not intensional, involving the many meanings commands exhibit contextually. Rather, the proposed analysis seeks to determine and sententialize the extension of commands, and responses to commands, as given or acted upon by some imperator or agent respectively.

In *An Analysis of Questions* Nuel D. Belnap states that imperatives are not "wholly" linguistic in that they lead "... from linguistic behavior into nonlinguistic behavior..."¹ That is, imperatival events involve the expressed command and the *overt* acting upon the command. Consequently, he asserts that a logic of imperatives is not accessible in the manner of a logic of questions and answers, since imperatival situations only partly involve sentential expressions.² Though it is not within the scope of this paper to articulate a logic of imperatives, the genuine sentential form of imperatives, and responses to imperatives, will be illustrated as expressible.³

In this way the relations involved in imperatival discourse will be defined and formally presented. Secondly, a method determining the

*This article is based upon a doctoral dissertation completed under the direction of Professor Richard M. Martin, and submitted in October of 1968 in partial fulfillment of the requirements for the degree of Doctor of Philosophy at the Graduate School of Arts and Sciences of New York University. The author is deeply indebted to Professor Martin for his guidance in this area.

1. Nuel D. Belnap, Jr., *An Analysis of Questions: Preliminary Report*, System Development Corporation, 2500 Colorado Ave., Santa Monica, California, TM-1287/000/00, p. 10.
2. *Ibid.*, pp. 10-11.
3. The terms: commands, imperatives, and norms shall be used interchangeably to refer to the general directive one employs to bring about an observable state of affairs.

"genuineness" of commanding and the "successful" performance of commands shall be illustrated. Finally, some observations will be made as to advantage of the above approach in relation to intensional analyses of commands.

The importance of this study lies in its serviceability for investigations dealing with normative inference, for attempts at articulating logics of commands have failed to understand how imperatives have a linguistic function distinct from that of indicatives, and that one cannot just *impose* two-valued propositional logic upon normative contexts and thus evolve a logic of norms. This investigation shows, therefore, how commanding, as a communication event, should be handled so that it does exhibit confirmably legitimate sentential forms. In essence then what is proposed in this paper is an objective conceptual elucidation of the way norms function in discourse.

1. Prior to considering the main objective, however, some explanatory remarks on the level of semiotics are useful. Of the three steps in the study of signs: syntactics, semantics, and pragmatics, this study will look into the denotation of commands, and responses to commands, as the pragmatic relation of the imperator or the agent and the extension of the command they respectively convey and respond to.

"Denotation" here means the class of all actual or existent things which the above relations of imperatival discourse correctly name. (Thus "denotation" is taken as synonymous with "designation" or "reference" of these relations.) Also, the phrase "actual or existent" is taken in a limiting sense, meaning that those things that would be or are named by these relations, but which cannot in fact exist, are not included within the denotation of these relations.⁴

This approach should thus yield the ostensive sentential schemata manifest when language is used in imperatival discourse. In essence, therefore, under investigation will be the structure of sentences having one partner in discourse as subject, the denotation of his utterance or overt action as predicate, and a pragmatic concept as copula.⁵ For example, the extensional and pragmatic analysis of the simple situation where John recites his lesson would be expressed as:

(i) $\text{'}J \text{ Rec' } L\text{'}$

where 'J' stands for John, 'Rec' stands for the pragmatic relation of someone reciting, 't' stands for the time-span during which John recites, and 'L' stands for the lesson he recites. Formula (i) expresses the structure of a

4. C. I. Lewis, "The Modes of Meaning," in *Semantics and the Philosophy of Language*, Leonard Linsky, editor, The University of Illinois Press at Urbana (1952), p. 238. (The above conception of "denotation" is based upon Lewis' presentation.)

5. A pragmatic conception is one which relates language and its user. "Language" here involves both syntactics and semantics: that is, only extension.

sentence expressing John's reciting the lesson at time t . The structure expressed by (i) therefore is the type of sentential schema to be brought out in the following investigation of different aspects of imperatival discourse.

2. In any case of discourse involving commands one must of course deal with some command. All that follows the command or imperative shall be symbolized as ' I_s ', which shall refer to a physical action f , to be performed on object x , with means y , to effect property F , at time t . Briefly, f, x, y, F , and t are the extension of I_s .

Having the general extension of a command, one can go on to present the idea of "conveying" an imperative extensionally. Here one must explain from a denotative viewpoint what is involved where a command is given. Obviously, one must here exclude any conception of conveyance which contains intimations of subjective dispositions. For examples, words like "asserting," "demanding," "intending," and "imperatizing" cannot be used to explain what conveying a command is, since these all suggest that an utterer's mental state is an essential aspect of what is commanded. This peripheral mental factor escapes extensional description, and is thus a hinderance in fully presenting the sought for characterization of conveying an imperative.

Consequently, it is best to employ the Greek notion of "*deataso*" to illustrate the pragmatic relation of "conveying" an imperative. *Deataso* is defined as "... to arrange, to set in order, . . . , to appoint to do or be, . . ."⁶ Thus the term conveys the idea of the imperator's observable arranging or setting in order by utterance of a command that something come about. Hence the idea of "commanding," symbolized as 'Com', will be understood in the sense of "*deataso*," which includes both the arranging to bring something about, and the "uttering" of the command towards securing the end.

The above remarks on commanding enable one to present the sentential schema of giving a command, where 'A' means some agent and 'M' names some imperator:

- (1) $M \text{ Com }^i A, 'fxyFt_c'$.

Formula (1) expresses the relation that M commands at time t that 'agent A perform action f on object x with means y to effect property F at time t_c .' The sentence schema expressed by (1) can be concretely illustrated in the case where one is directed to make a statue. Here, ' f ' would be A 's expected action in making the statue, ' x ' names the material out of which it will be made, ' y ' stands for the tools or means used, ' F ' names the sought for characteristic of x being the statue the imperator wants, and ' t_c ' stands for the time at which the statue is to be completed.

Though the extensional characterization of giving a command is an important aspect of the broader notion of conveying a command, it is not its only aspect, for it is readily seen that anyone who gives a command assumes in his commanding that there is an agent who will carry out the

6. Liddell and Scott, *A Lexicon*, (Abridgment), Oxford at the Clarendon Press (1963), p. 167.

command. The latter can be expressed as an extensional and pragmatic relation of the agent's acceptance of the given command. Here a new primitive is introduced, 'Acpt', to refer to the agent's observable acting upon the given command. However, 'Acpt' does not refer to the agent's "success" in performing the command, but to the observable activity of the agent as he obeys the command l_s . Thus the relation at issue appears as:

$$(2) \quad 'A \text{ Acpt}^{t_{1+}} 'fxyFt_c', \text{ Com } M, t'.$$

Formula (2) expresses the structure of a sentence about an agent who accepts at time t_{1+} to 'effect action f on object x with means y to bring about property F at the required time t_c ' as commanded by M , at time t . Also a time sequence now exists between the relation expressed in (1) and (2). For since the agent is not said to accept the command prior to its being given, acceptance must take place at a time after t , i.e., t_{1+} .

In some cases, however, the agent rejects or does not accept the command. In such instances the agent observably chooses to ignore or not to act upon l_s . Hence where the primitive '-Acpt' stands for the rejection of a command, the following sentential schema is seen:

$$(3) \quad 'A -\text{Acpt}^{t_{1+}} 'fxyFt_c', \text{ Com } M, t'.$$

Formula (3) illustrates the structure of a sentence where agent A does not accept at time t_{1+} to 'effect action f on object x with means y to bring about property F at the required time t_c ' as commanded by M at time t . It is to be observed that the relations expressed in (2) and (3) could occur within timespan t to t_{1+} , and that both relations are contrary to each other. Thus the relations expressed in (2) and (3) can never occur simultaneously, relative to the same imperator, agent and command.

With formulas (1), (2), and (3) one can proceed to *define* in an extensional and pragmatic sense the complex communication event called "conveying" a command. For the latter is nothing more than the conjunction of the imperator's commanding the imperative and the agent's consequent rejection or acceptance of it. Using the symbol 'Con' to express the relation of "conveying," the relation itself can be defined as follows:

$$(D1) \quad ((M \text{ Com}' A 'fxyFt_c') \& (A \text{ Acpt}^{t_{1+}} 'fxyFt_c', \text{ Com } M, t)) \supset (M \text{ Con}^{t_{1+}} l_s).$$

Definition (D1) states that the conjunction of imperator M commanding agent A to do l_s at t and the agent's acceptance of l_s as commanded by M implies that M has conveyed l_s to A at time t_{1+} .⁷

Another way of defining the notion of "conveying" an imperative is as follows:

$$(D2) \quad ((M \text{ Com}' A 'fxyFt_c') \& (A -\text{Acpt}^{t_{1+}} 'fxyFt_c', \text{ Com } M, t)) \supset (M \text{ Con}^{t_{1+}} A, l_s).$$

Definition (D2) states the conjunction of M commanding l_s to A at t and the

7. The time-span covering the conveying of a command is a segment of the longer time-span of the entire communication event of conveying and performing a command. The conveyance time-span contains smaller time-spans within it.

agent's refusal to act upon l_s at t_{1+} as commanded by M implies that M conveys l_s to A at time t_{1+} .

It must not be thought that both (D1) and (D2) are incompatible since in (D1) one defines conveying l_s in terms of commanding l_s and the agent's acceptance of it, and in (D2) one defines conveying a command in terms of commanding l_s and rejecting it. For acceptance and rejection are both observable actions, in that to reject l_s is to act upon l_s in a different manner than that of accepting it. In the case of rejecting the command, l_s may violate the agent's values, physical abilities, etc. Thus the rejector in rejecting is *doing something* which is objectively determinable, though it is not that of accepting the imperative. Definitions (D1) and (D2) are therefore the defining of "conveying" a command in terms of two types of action. As long as one does not assume that an agent can accept and reject the same imperative at the same time, definitions (D1) and (D2) are acceptable and compatible definitions of conveying a command.

Already from the above definitions one has a means of explaining how a command is not conveyed. Obviously, if one commands (in the sense of *deataso*) l_s and there is no one present to either accept or reject it, then l_s has not been conveyed. This could be the case where one commands an imperative but no one hears it.

More significantly, however, the above conceptual clarification of conveying a command enables one to give an objective criterion for determining whether or not the act of commanding is "genuine" or "nongenuine." This is to say that one is now in a position to clearly state when the extensional and pragmatic relation of 'an imperator-commanding-the imperative sentence' is genuine or nongenuine.

If the commanding of l_s involves that the agent do something which is logically, physically, or technically impossible, then the commanding is nongenuine. For example, if one commands someone to draw a round square, then the commanding here is nongenuine due to the impossibility of doing what is demanded. Also, if one were commanded to lift a ton of bricks solely with one finger, the commanding again is nongenuine. Commanding here requires one to do the physically impossible. Again commanding is nongenuine where there is technical impossibility. This would be the case where one is told to make a Stradivarius violin. The method by which such instruments are made is lost, and barring its discovery, the commanding to have one made is nongenuine.

It may be objected that there are cases where the commanding involves the physically or technically impossible at one time past, though since then new insights have turned these impossibilities into common actualities. For example, if one were told fifty years ago to go to the moon, at that time that instance of commanding would have been technically impossible. Since then, however, this is no longer the case. Thus it would appear that cases of commanding could be both nongenuine and genuine.

The above difficulty can be minimized by concentrating upon the state of a field of knowledge when a command is given pertaining to it. For example, where a command involves knowledge which at the time is unavailable, then that command when given constitutes an instance of nongenuine

commanding. However, when knowledge in an area is subsequently developed, as the case of rocket travel indicated above, then that same command given at the later time is genuine. The apparent contradiction in having a case of commanding as both nongenuine and genuine arises from mistakenly believing that the first case of commanding is identical to the second. This, however, is not correct, since in the second instance one is dealing with a later period of time, where more knowledge has been accumulated. In essence then one is dealing with two different commands, and thus no contradiction arises.

Furthermore, a nongenuine paradigm of commanding is not the same as an instance where a meaningless command is given. For example, the so-called command "Sing me a bar of exuberant soap!" does not convey anything to the agent, though it has the recognizable form of a command. On the other hand, a nongenuine command is perfectly meaningful, yet it cannot be acted upon for reasons already mentioned above.

All of what has been said thus far about conveying a command, and the determinable genuineness of this activity, has to deal with part of the communication event making-up imperatival discourse. Thus far there has been a concentration upon only that phase of such discourse which is "linguistic," as N. D. Belnap observes.⁸ Thus there remains to account for the performative aspect of imperatival events. That is, the actual acting upon the conveyed command must now be clarified and sententially presented. Interestingly, it is this part of imperatival discourse which is said by Belnap to be absolutely nonlinguistic, and which thus cannot be sententialized.

What must be expressed sententially here is the agent fulfilling the command as conveyed by imperator M. Thus what is involved is the agent's observable "performance" of the command. The latter idea is distinct from the notion of accepting an imperative discussed earlier. For A's acceptance of I_s was taken in the wide sense of the agent's observable obedience to the imperative. Performance, however, deals with the specific number of acts "intended" by A to satisfy the conveyed imperative. Thus the acts constituting the agent's observable performance are his total reaction to I_s , and collectively differ from the agent's mere acceptance of the command.⁹

Employing the method already used to sententialize the commanding and accepting of an imperative, one can present performance as an extensional and pragmatic relation of an agent and the acts he performs to fulfill I_s . Introducing the symbolism 'Prfm' to express the pragmatic notion of performance, the following sentential structure emerges:

$$(4) \quad 'A \text{ Prfm}^{(I_1 + 'c)} fxyFl_c'.$$

8. Nuel D. Belnap, Jr., p. 10.

9. Richard M. Martin, *Performance*, (mimeograph copy first appearing in 1968), pp. 6-7. (The above notion of "performance" is adopted from Dr. Martin's articulation of the idea in this work.)

The above formula illustrates the structure of a sentence about *A* performing, during time-span t_{1+} to t_c , action f on object x with means y to effect property F at time t_c .¹⁰

By means of (4) one can express a number of events occurring at different moments within time-span t_{1+} to t_c , which are the observable occurrences of *A*'s acts in his progress towards satisfying l_s . For economy, (4) is employed to cover all the actions performed by *A* to satisfy the imperative.

Where the different designata making-up the conveyed imperative (that is making-up ' $fx y F t_c$ ') are *identical* to the designata of the agent's performance, then in a totally objective sense it can be said that the agent has "successfully" performed what the command requires. Introducing the symbol 'SPrfm' to express the "successful performance" of a command, the following definition can be set down:

$$(D3) ((M \text{ Con } ^{t_{1+}} A, l_s) \ \& \ (A \text{ Prfm } ^{(t_{1+}-t_c)} f x y F t_c)) \supset (A \text{ SPrfm } ^{t_c} 'f x y F t_c', \text{ Con } M).$$

Definition (D3) states that if imperator *M* conveys at time t_{1+} to agent *A* imperative l_s and agent *A* performs during time-span t_{1+} to t_c action f on object x with means y to effect property F at time t_c , then *A* has successfully performed at time t_c the imperative ' $fx y F t_c$ ' as it is conveyed by *M* at t . (D3) holds if and only if the designata of the different aspects of the agent's performance are *identical* to those of the performance required by the "conveyed" imperative. Where the above identity of designata exists, definition (D3) explains what is a "true" sentence about an agent who performs the conveyed imperative.

Furthermore, in view of the above one can also express in a totally objective sense how the agent's performance is not successful. The best means of illustrating this unsuccessful performance is through the following tables. The latter indicate the ways in which the designata of the performance required by the commanded imperative is *not* identical to the designata of the agent's performance.¹¹

1.	2.	3.	4.	5.
$f_1 \neq f_2$				
$x_1 = x_2$	$x_1 \neq x_2$	$x_1 \neq x_2$	$x_1 \neq x_2$	$x_1 \neq x_2$
$y_1 = y_2$	$y_1 = y_2$	$y_1 \neq y_2$	$y_1 \neq y_2$	$y_1 \neq y_2$
$F_1 = F_2$	$F_1 = F_2$	$F_1 = F_2$	$F_1 \neq F_2$	$F_1 \neq F_2$
$t_{c1} = t_{c2}$	$t_{c1} = t_{c2}$	$t_{c1} = t_{c2}$	$t_{c1} = t_{c2}$	$t_{c1} \neq t_{c2}$

10. *Ibid.*, p. 7. (The primitive 'Prfm' is taken as expressing the simplest kinds of action types, which are physical motions or physico-chemical processes.)

11. In reading these tables it should be kept in mind that the action referred to by ' f_1 ' is that alluded to in the imperator's commanded imperative, whereas the action referred to by ' f_2 ' is the action intended by the agent to satisfy the action required by the imperator. In a similar way, ' x_1 ' and ' x_2 ', etc., are to be interpreted.

6.	7.	8.	9.	10.
$f_1 = f_2$	$f_1 = f_2$	$f_1 = f_2$	$f_1 = f_2$	$f_1 = f_2$
$x_1 = x_2$	$x_1 = x_2$	$x_1 = x_2$	$x_1 \neq x_2$	$x_1 = x_2$
$y_1 = y_2$	$y_1 = y_2$	$y_1 \neq y_2$	$y_1 \neq y_2$	$y_1 \neq y_2$
$F_1 = F_2$	$F_1 \neq F_2$	$F_1 \neq F_2$	$F_1 \neq F_2$	$F_1 \neq F_2$
$t_{c1} \neq t_{c2}$	$t_{c1} \neq t_{c2}$	$t_{c1} \neq t_{c2}$	$t_{c1} \neq t_{c2}$	$t_{c1} = t_{c2}$

Case 1 illustrates the situation where the agent performs the wrong action on the appropriate object with the correct means, and happens to effect the desired property at the correct time.

In 2 one has the case where the agent performs the wrong action on the wrong object, but acts with the correct means, and also happens to effect the desired property at the expected time.

Case 3 exhibits the case where the agent again performs the wrong action on the wrong object with the wrong means, but effects the sought for properties at the appointed time, etc.

In view of the above three explanations, one can readily understand the state of affairs expressed in the remaining seven tables. All in all it can be seen that the idea of unsuccessfully performing what a command requires has received uncommon depth as a result of interpreting it in an extensional way, for it is based upon the nonidentity of the designata of an agent's performance and the equally numerous designata of the imperator's command.

Where any of the above ten situations exists, unsuccessful performance, symbolized as -Prfm, can be defined as:

$$(D4) ((M \text{ Con } {}^{t_1+} A, I_s) \& (A \text{ Prfm } ({}^{t_1+} t_c) fxyFt_c)) \supset (A - \text{Prfm } {}^{t_c} fxyFt_c', \text{ Com } M t).$$

Definition (D4) states that if the imperator M has conveyed at time t_{1+} to agent A imperative sentence I_s and agent A has performed during time-span t_{1+} to t_c an action upon some object with some means to effect some property at some time t_c , then agent A has not successfully performed at time t_c the imperative $fxyFt_c'$, as commanded by M at time t . In essence, definition (D4) is a concise means of expressing all the cases described in the ten tables discussed above.¹²

Having the above clarification as to what is "unsuccessful" performance of an imperative, one can explain how truth values can be objectively attached to the complete response to an imperative. For if any of the ten cases alluded to above do become manifest, then the response to the imperative is incorrect.

For brevity, the general idea of "responding" to an imperative will be taken as the exclusive disjunction of the agent's successful or unsuccessful performance of the commanded imperative. Using the symbol 'Res' to

12. It must not be thought that the definiens of (D4) is the same as the definiens of (D3). For in the case of (D4) there is the stipulation that the definiens is descriptive of a case where there is a nonidentity of designata, whereas in the case of (D3) the definiens is descriptive of an identity of designata.

name the idea of responding to an imperative, the latter idea can be expressed as:

$$((A \text{ SPrfm } I_s) \vee (A - \text{Prfm } I_s)) \supset (A \text{ Res } I_s).$$

The extensional and pragmatic description of what constitutes the response to a command constitutes the last segment of the conceptual framework needed to express in the same way the entire idea of imperatival discourse. Where the symbol 'ImpD' stands for imperatival discourse, the following definition can be given:

$$(D5) ((M \text{ Con } ^{1+} A, 'f_{xy} Ft_c') \& (A \text{ Res } ^c I_s, \text{Com } M t)) \supset (M \text{ ImpD } (^{t-t_c}) A, I_s).$$

(D5) states "if imperator M conveys at time t_{1+} to A imperative ' $f_{xy} Ft_c$ ' and agent A responds at time t_c to I_s as commanded by M at time t , then imperator M is discoursing imperatively with A during time-span t to t_c , about imperative sentence I_s ."

With (D5) the objective of capturing from a completely extensional and pragmatic viewpoint the entire communication event constituting imperatival discourse has been secured. Furthermore, the impossibility of sententializing the performative aspect of this event, as declared by Belnap, is not present within the scope of the approach taken above.

3. The significance of the above conceptual elucidation of commands must now be considered in light of the way intensionalists have treated commands. For the most part, commands have been discussed by philosophers with the intent of showing that commands can be "inferred" from other commands, once they have been shown to have a so-called indicative nature.

Exemplary of the intensionalists approach is J. Jørgensen, who agrees with W. Dubislav that to each imperative there corresponds an indicative expressing what it is the imperator desires to have done.¹³ Also, A. Hofstadter and J. C. C. McKinsey, in distinguishing fiats from directives, assert that the latter can be shown to have an indicative content.¹⁴ Furthermore, R. M. Hare holds that imperatives and indicatives can be shown to have the same content, though in the former case there is the suffixing by a "dicator," and in the latter case the suffix is a "descriptor."¹⁵

It is the intent of these writers to being out what they take to be the indicative element of imperatives so that imperatives shall be opened to the same type of inferential procedure as indicatives in a two-valued propositional logic. However, this approach involves reducing imperatives to indicatives, with the sacrifice of the distinct linguistic character of the former. For imperatives do not assert facts, and to interpret them as statements about some state of affairs is to abrogate their directive function.

13. Jørgen Jørgensen, "Imperatives and Logic," *Erkenntnis*, vol. 7 (1937-38), pp. 288-289.

14. A. Hofstadter and J. C. C. McKinsey, "On the Logic of Imperatives," *Philosophy of Science*, vol. 6 (1939), p. 446.

15. R. M. Hare, "Imperative Sentences," *Mind*, vol. 58 (1949), p. 25.

Furthermore, B. A. O. Williams observes that the mode of inference applicable to indicatives is not applicable to imperatives, though the latter are said to have an indicative content. He points out that the functional schema: " p or q ; not p ; so q " is not analogous to the supposed imperative inference: "do x or do y ; do not do r ; so do y ." For the first premiss of the second example describes a "choice-offering" situation which is *withdrawn* in the same example by the second premiss. Thus the two premisses of this second example are inconsistent, and can in no way lead to the "inference" of "so do y ."¹⁶ Accordingly, Williams rejects the intensionalists' approach of translating commands into assertive propositions, and thereby evolving some sort of a normative or imperative logic.

The extensional analysis of commands, however, requires no translating of commands into something that they are not. For concentrating upon the extension of commands permits an objective characterization of commands without interpreting them into some foreign linguistic form. Furthermore, the advantage of the extensional and pragmatic approach is illustrated by the fact that in no contextualist's account has there been an attempt to clearly explain what constitutes: "commanding," "acceptance of a command," "response to a command," "performance of a command," etc. It was seen, however, that the latter are clearly explained from the extensional viewpoint. Thus whereas the intensionalists are constantly caught up in the justification of their treatment of commands, the extensionalists can proceed to a direct and fruitful analysis of imperatival discourse.

More significantly, the latter approach was seen to provide a means by which to show how commanding can be an objectively genuine act, and how a response to a command can be determined as objectively correct or incorrect.¹⁷ In turn, therefore, one has the framework by which to develop a logic of commands, much in the same way that David Harrah develops a logic of questions and answers.¹⁸ For within a suitable calculus one can demonstrate how imperatives, and responses to imperatives, exhibit the formal relations of "independence," "inclusion," "dependency," "containment," "equivalence," etc.

In retrospect, the extensional and pragmatic approach to commands has not only provided a means by which to counter Belnap's thesis that responses to imperatives cannot be sententialized, it also prepares the basis for a calculus of commands. The latter, however, is beyond the scope of this investigation.

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16. B. A. O. Williams, "Imperative Inference," *Analysis* (Supplement), 1963 (for vol. 23), pp. 30-31.
 17. "Genuineness" of commanding and "correctness" of responses to commands are the basis for the decision method of a possible logic of commands.
 18. David Harrah, "A Logic of Questions and Answers," *Philosophy of Science*, vol. 28 (1961), pp. 40-46.