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THE NEED FOR CLEAR STRUCTURE IN "PLAIN LANGUAGE" LEGAL DRAFTING

Layman E. Allen*
C. Rudy Engholm**

Language is not simple. To pretend otherwise is to mislead. In practice the aspect that is handled most ineptly in written legal materials is the structure. The focus of this article is upon structure and how to improve it. At the outset, let one thing be absolutely clear. In seeking to achieve clarity of expression, those who have no more to recommend than short sentences, simple words, and readability formulas are offering a cracker in circumstances where a full gourmet feast is gleaming in the chef's eye for those with the wit but to ask for the menu. To practice their craft competently, legal drafters must gain control of the relevant intellectual skills. One such skill is facility in using some of the elementary techniques and knowledge of modern logic to achieve structure that is clear. While modern logic is not the only intellectual tool that is relevant for this purpose, it is the only one that is dealt with here. Linguists and others can more persuasively argue their own cases elsewhere. The examples presented here illustrate the usefulness of understanding modern logic for achieving clarity in legal drafting.

Four kinds of structure and examples of each will be examined first: the structure between parts within the same sentence, the structure between constituent sentences within the same sentence, the structure between parts that are in different sentences, and the structure between constituent sentences that are in different sentences. Second, the results of an experiment on the New York consumer protection statute that requires clarity in various legal documents of importance to consumers will be reported. The embarrassing outcome shows that the statute

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suffers from the very ills that it seeks to cure. Third, the pervasiveness of structural ambiguity will be illustrated by the word "unless," whose surprising slipperiness is all too typical of the hundreds of other little words that are commonly used in legal discourse to indicate structure. Finally, the article considers the usefulness of simplifying and standardizing the words used to indicate structure by stipulating a small set of primitive terms and defining all others in terms of them.

I. Four Kinds of Clear Structure Necessary for Plain Language

To achieve clarity, short sentences and simple words can be helpful, but they alone are not enough to do the job. It is also necessary to pay close attention:

(1) to the structure within a sentence by which a part of that sentence is related

(a) to other parts of that sentence or

(b) to constituent sentences within that sentence, and

(2) to the structure within a sentence by which a constituent sentence of that sentence is related to other constituent sentences of that sentence, and

(3) to the structure between two or more sentences by which a part of one of those sentences is related

(a) to parts of another sentence or

(b) to constituent sentences within those other sentences, and

(4) to the structure between two or more sentences by which one of those sentences (or one of the constituent sentences within it) are related to those other sentences (or constituent sentences within them).

For convenience of reference, these four kinds of structure will be referred to here as PW, PB, SW, and SB structures, as summarized in Table 1.

Table 1

Four Kinds of Structures

Parts	Sentences	
PW Structure	SW Structure	Within
PB Structure	SB Structure	Between

A significant example of an ambiguity in the first kind of structure (PW) occurs in the first sentence of section 22(c) of the Health Security Act bill introduced by Senator Edward M. Kennedy.[1] It reads as follows:

> (c) Psychiatric (mental health) service to an outpatient is a covered service (1) only if it constitutes an active preventive, diagnostic, therapeutic, or rehabilitative service with respect to emotional or mental disorders, and (2) only (A) if the service is furnished by a group practice organization, by a hospital, or by a community mental health center or other mental health clinic which furnishes comprehensive mental health services, or (B) if the service is furnished to a patient of a day care service with which the Board has an agreement under section 49(a)(3), or (C) to the extent of twenty consultations during a benefit period (as defined in regulations), if the service is furnished otherwise than in accordance with clause (A) or (B).

The PW structural ambiguity occurs in the third constituent sentence of this provision, that is, "the service is furnished by a group practice organization, by a hospital, or by a community mental health center or other mental health clinic which furnishes comprehensive mental health services, . . ." As the sentence is written the structure between some of the parts is left implicit. It is unstated and unclear whether the sentence-part "which furnishes comprehensive mental health services" is intended to modify only the sentence-part "other mental health clinic" or whether it is intended to modify some or all of the other named types of organizations as well. There are three possible alternative interpretations, each of which is stated below

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[1] S.3, 95th Cong., 1st Sess. (1977).

with the exact same sequence of words as the present version, but with the structure explicitly indicated by some conventions in indenting and labeling the left margin.

Interpretation 1

the service is furnished
  (a) by a group practice organization,
  (b) by a hospital, or
  (c) by a
        —community mental health center or
        —other mental health clinic which furnishes
          comprehensive mental health services;

Interpretation 2

the service is furnished
  (a) by a group practice organization,
  (b) by a hospital, or
  (c) by a
        —community mental health center or
        —other mental health clinic
        which furnishes comprehensive mental health services;

Interpretation 3

the service is furnished
  (a) by a group practice organization,
  (b) by a hospital, or
  (c) by a community mental health center or other mental health clinic
which furnishes comprehensive mental health services.

The broadest interpretation in the sense of qualifying the services of most organizations as potentially covered services is Interpretation 1. It qualifies the services of group practice organizations, hospitals, and community mental health centers as potentially covered services even though those organizations do not furnish comprehensive mental health services. On the other hand, the narrowest interpretation (3) requires each of the four types of organizations mentioned to furnish comprehensive mental health services in order for their services to qualify as potentially covered services. In between is Interpretation 2, which allows services of group practice organizations and hospi-

tals (but not community mental health centers) to qualify without their furnishing comprehensive mental health services. Clearly the first three types of organizations—both those that do, and those that do not, furnish comprehensive mental health services—are vitally interested in which of the three interpretations is the appropriate one; billions of dollars worth of services turn on the outcome. More importantly, the choice of whether such a decision should be made legislatively, administratively, or judicially is a choice that should in fact be *made* knowingly and deliberately rather than arising accidentally by an ambiguity occurring inadvertently or through lack of drafting skill. Familiarity with modern logic would enhance the probability that such choices are made deliberately and implemented skillfully.

The rest of this first sentence of section 22(c), which is hereinafter referred to as section 22(c).1, also illustrates sloppy structure of another kind that is embarrassingly typical of the convoluted and awkward style that characterizes so much of federal statutory and regulatory provisions. The way that its other four sentences relate to this third sentence and to each other is a mind-mixing confluence of unnecessary ambiguity, complexity, and opaqueness in the structure of the second kind (SW). To emphasize the havoc that the drafter has wrought, let the constituent sentences be abbreviated by underlined small letters as follows:

a̲ Psychiatric (mental health) service to an outpatient is a covered service
b̲ it constitutes an active preventive, diagnostic, therapeutic, or rehabilitative service with respect to emotional or mental disorders
c̲ the service is furnished by a group practice organization, by a hospital, or by a community mental health center or other mental health clinic which furnishes comprehensive mental health services
d̲ the service is furnished to a patient of a day care service with which the Board has an agreement under section 49(a)(3)
a̲.1 to the extent of twenty consultations during a benefit period (as defined in regulations)
e̲ the service is furnished otherwise than in accordance with clause (A) or (B).

Then, the between-sentence structure of section 22(c).1 as written shows up more clearly as:

(c) a (1) only if b, and (2) only (A) if c,
    or (B) if d, or (C) a.1, if e,
            where a.1 is a sentence-part
            that qualifies a.

The structure is even more evident if the left margin is con-
trolled systematically as follows:

(c) a (1) only if b, and
    (2) only
        (A)   if c, or
        (B)   if d, or
        (C)   a.1, if e.

Whatever relations were intended between sentences a through
e, they could have been expressed simply and in a standardized
straightforward manner by using the terms "if," "and," "or,"
and "not" more systematically. But the drafter's lack of skill
and innocence in making full use of his or her freedom in ex-
pressing the structure in a manner pregnant with ambiguity has
left many unnecessary questions:

Q1.   Which is intended by: a(1) only if b, . . .?
      1)   if not b then not a, and if b then a,
                        or merely
    · 2)   if not b then not a?
Q2.   Which is intended by: a(1) only if b, and (2) only
      (A) if c, . . .?
      1)   a only if b, and a only if c,
                        or merely
      2)   a only if b and c?
Q2.1   If 1 is the answer to Q2, which is intended by that
       answer?
      1)   If not b then not a, and if b then a, and
           if not c then not a, and if c then a,
                        or merely
      2)   If not b then not a, and if not c then not a?
Q2.2   If 2 is the answer to Q2, which is intended by that
       answer?
      1)   If not b or not c then not a, and

if $\underline{b}$ and $\underline{c}$ then $\underline{a}$,

or merely

2) if not $\underline{b}$ or not $\underline{c}$ then not $\underline{a}$?

Q3. Which is intended by: $\underline{a}$ . . . (2) only (A) if $\underline{c}$, or (B) if $\underline{d}$, . . .?

1) $\underline{a}$ . . . only if $\underline{c}$ or $\underline{d}$,

or merely

2) $\underline{a}$ . . . only if $\underline{c}$, or $\underline{a}$ . . . only if $\underline{d}$?

Q3.1 If 1 is the answer to Q3, which is intended by that answer?

1) If not $\underline{c}$ and not $\underline{d}$ then not $\underline{a}$, and

if $\underline{c}$ or $\underline{d}$ then $\underline{a}$,

or merely

2) If not $\underline{c}$ and not $\underline{d}$ then not $\underline{a}$?

Q3.2 If 2 is the answer to Q3, which is intended by that answer?

1) (If not $\underline{c}$ then not $\underline{a}$, and if $\underline{c}$ then $\underline{a}$) or

(if not $\underline{d}$ then not $\underline{a}$, and if $\underline{d}$ then $\underline{a}$),

or merely

2) If not $\underline{c}$ then $\underline{a}$, or if not $\underline{d}$ then $\underline{a}$?

Q4. Which is intended by: $\underline{a}$ . . . (2) only . . . (C)$\underline{a.1}$, if $\underline{e}$?

1) $\underline{a}$-only-$\underline{a.1}$ if $\underline{e}$,

or

2) $\underline{a}$-$\underline{a.1}$ only if $\underline{e}$? (in light of $\underline{a}$ . . . only if $\underline{c}$, or . . . if $\underline{d}$)

These are by no means all of the ambiguities in the relations intended between the constituent sentences of section 22(c).1, but they are certainly enough to give the flavor of the mess that the drafter's choice of structural words has left for readers to ponder. For what useful purpose would such chaos be deliberately constructed? The most likely explanation in this case and other similar ones is inadvertence or ineptitude, or both. The resulting uncertainty, probably entirely unintended, leaves readers to scrutinize the semantic content of the sentences $\underline{a}$ through $\underline{e}$ to try to puzzle out the intended relationships—and if that fails, to engage in utterly unnecessary historical legislative and other legal research to discern which interpretations are most appropriate. It is reminiscent of the mindless Humpty-Dumpty mentality that uses the digit "7" to represent the number seven

on one occasion, to represent the number thirty-two on another, to represent the number four and six-tenths on a third occasion, and to represent still others on other occasions—whatever is most appropriate in the context. Instead of using the signs that have been stipulated by consensus as the appropriate ones for use in indicating the designated numbers, the mindless Humpty-drafter has his own private codes and depends upon the context to determine what his chosen set of signs means. No sensible person would defend such a practice for communicating about numbers. Yet, that is precisely what legal drafters persist in doing in handling the structure of their written communications. They are seemingly innocent and unaware of the fact that some aspects of messages can be indicated with a degree of precision and exactness similar to that of numerical relationships. It bears repeating: to competently practice their craft, legal drafters must gain control of the relevant intellectual skills. What the drafter probably intended by section 22(c).1 was the following:

1.   If
      A.   psychiatric (mental health) service to an outpatient constitutes an active preventive, diagnostic, therapeutic, or rehabilitative service with respect to emotional or mental disorders,
     then
      B.   if
          1)   the service is furnished
              (a)   by a group practice organization, or
              (b)   by a hospital, or
              (c)   by a community mental health center or other mental health clinic which furnishes comprehensive mental health services, or
          2)   the service is furnished to a patient of a day care service with which the board has an agreement under section 49(a)(3),
   then
          3)   the service is a covered service, and
      C.   if
          1)   the service is furnished otherwise than in accordance with provision 1B1 or provision 1B2,
        then
          2)   the service is a covered service only to the extent of twenty consultations during a benefit period (as defined in regulations), and

2. if
    A. none of the sets of sufficient conditions set
        forth in provision 1 for reaching result 1B3 or
        result 1C2 are fulfilled,
    then
    B. the service is not a covered psychiatric (mental
        health) service to an outpatient.

This interpretation of the structure of section 22(c).1 is simple
and straightforward. Schematically, it is:
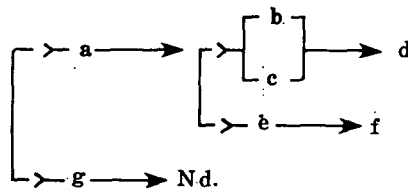
This interpretation indicates that there are

two alternative sets of sufficient conditions for reaching
result d—namely, set a and b and set a and c, and

one set of sufficient conditions for reaching result f—
namely, set a and e, and

one sufficient condition for reaching result Nd—namely
g.

Whatever interpretation of the structural relationships be-
tween the constituent sentences of section 22(c).1 is intended,
whether or not it is the one shown above, that intended inter-
pretation can be represented by a statement with structure as
precise, exact, and unambiguous as the one above. Competent
legal drafters should have the skill of expressing the between-
sentence structure of their texts with such precision, such exact-
ness, and such lack of ambiguity for use whenever it is deemed
prudent so to express the structure. Those charged with the re-
sponsibility of drafting statutes and regulations should have the
opportunity to become familiar with the relevant knowledge of
modern logic.

So much for the structure *within* sentences (PW and SW).
Now let us turn to the structure *between* sentences (PB and
SB). Short sentences will tend to minimize the likelihood that
drafters inadvertently incorporate ambiguity in the within-sen-
tence structure of the documents that they write. The effect,
however, is not all one way nor all in the positive direction. It
usually is a trade-off situation. Shorter sentences usually mean

more sentences, and as the number of sentences increases, the likelihood increases that the drafter will inadvertently incorporate ambiguity in the between-sentence structure or increase the complexity of the document by failing to express the structure that relates the ideas expressed in the separate sentences. When structure is left implicit, readers must figure it out from context, which only makes it harder to understand. Increased complexity and more between-sentence ambiguity do not necessarily accompany shortened sentence length and more sentences. Rather, they are merely the likely results for drafters who are amateurs in the use of logic.

Those who gain familiarity with modern logic will have attainment of the ideal within their grasp: short constituent sentences with between-sentence structure indicated explicitly and precisely. They will not be subject to the confinements of short sentences but will know how to assemble book-length sentences that will be models of clarity. Flexibility will characterize the drafters who know their logic in the way that an expert typist knows which fingers to depress—intuitively and immediately and without pausing to think about it. When the relevant intellectual skills are under control, drafters will become more competent. They will better manage the structure of the third kind (PB), which is illustrated in sections 3-201 and 3-202 of the Model Procurement Code.[2] The relevant parts read as follows:

Sec. 1.   Except as otherwise authorized by law, all State contracts shall be awarded by:
  (1)   competitively sealed bidding;
  (2)   competitive negotiation;
  (3)   noncompetitive negotiation; or
  (4)   small purchase procedures.

Sec. 2.   Contracts exceeding the amount provided by section 6 shall be awarded by competitive sealed bidding unless it is determined in writing that this method is not practicable.

The structural relationship between the sentence-part "Except as otherwise authorized by law" in section 1 and the first sentence of section 2 has been left implicit in the present version. Readers must determine for themselves from the semantic contents of the sentences of the two sections that the condition

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² MODEL PROCUREMENT CODE §§ 3-201 & -202 (2d Draft, 1977).

expressed by this sentence-part is meant to be a condition for the result expressed in section 2 as well as for the result expressed in section 1. A drafter sensitive to the problems of between-sentence structure could have easily made the relationships explicit by a synthesis of the two sections as follows:

If
1. it is not otherwise authorized by law,

then

2. all State contracts shall be awarded by:
    (A) competitive sealed bidding,
    (B) competitive negotiation,
    (C) noncompetitive negotiation, or
    (D) small purchase procedures, and

3. if
    A. it is not determined in writing that competitive sealed bidding is not practicable,
    then
    B. contracts exceeding the amount provided by section 6 shall be awarded by competitive sealed bidding.

The arrow-diagram of the provision would be:
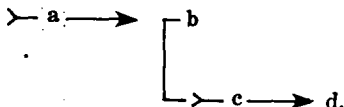
In this "normalized" version of the provision in which the structure between sentences is explicit and precise, as well as standardized and simplified, it is clear that result b̲ occurs when condition a̲ is fulfilled and result d̲ occurs when conditions a̲ and c̲ are fulfilled.

The example involving structure of the fourth kind (SB), in which the relationships involved are between constituent sentences of different sentences, is considerably more complex. It will facilitate and simplify discussion of this example if both the present version and the normalized version are available for reference. The example is New York's pioneering "Plain Language" statute that has been heralded as making "legalese illegal in consumer contracts."[3] The version of the statute used in the

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³ N.Y. GEN. OBL. LAWS § 5-702 (McKinney 1978). The experiments with the New York Plain Language provisions were done on the version that was scheduled to become effec-

experiments provides:

> b. Every written agreement entered into after June first, nineteen hundred seventy-eight, for the lease of space to be occupied for residential purposes, or to which a consumer is a party wherein the money, property or service which is the subject of the transaction is primarily for personal, family or household purposes must be:
>
> 1. Written in non-technical language and in a clear coherent manner using words with common and every day meanings;
>
> 2. Appropriately divided and captioned by its various sections.
>
> Any creditor, seller or lessor who fails to comply with the foregoing provisions of this subdivision shall be liable to a consumer who is a party to a written agreement gov-

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tive with respect to written agreements entered into after June 1, 1978. This version did not include the final amendments that were added before the statute became effective for written agreements entered into after November 1, 1978. From the viewpoint of the structural problems analyzed here, the final version is essentially the same. It provides:

§ 5-702. REQUIREMENTS FOR USE OF PLAIN LANGUAGE IN CONSUMER TRANSACTIONS.

a. Every written agreement entered into after *November* first, nineteen hundred seventy-eight, for the lease of space to be occupied for residential purposes, or to which a consumer is a party *and* the money, property or service which is the subject of the transaction is primarily for personal, family or household purposes must be:

1. Written in a clear and coherent manner using words with common and every day meanings;

2. Appropriately divided and captioned by its various sections.

Any creditor, seller or lessor who fails to comply with this subdivision shall be liable to a consumer who is a party to a written agreement governed by *this subdivision* in an amount equal to any actual damages sustained plus *a penalty of* fifty dollars. The total class action penalty against any such creditor, seller or lessor shall not exceed ten thousand dollars *in any class action or series of class actions arising out of the use by a creditor, seller or lessor of an agreement which fails to comply with this subdivision. No action under this subdivision* may be *brought* after both parties to the agreement have fully performed their obligation under such agreement, nor *shall* any creditor, seller or lessor who attempts in good faith to comply with this *subdivision be liable for such penalties.* This subdivision shall not apply to agreements involving amounts in excess of fifty thousand dollars *nor prohibit the use of words or phrases or forms of agreement required by state or federal law, rule or regulation or by a governmental instrumentality.*

b. A violation of the provisions of subdivision a of this section shall not render any such agreement void or voidable nor shall it constitute:

1. A defense to any action or proceeding to enforce such agreement; or

2. A defense to any action or proceeding for breach of such agreement.

c. In addition to the above, whenever the attorney general finds that there has been a violation of this section, he may proceed as provided in subdivision twelve of section sixty-three of the executive law.

erned by the provisions thereof in an amount equal to the sum of any actual damages sustained plus fifty dollars. The total class action penalty against any such creditor, seller or lessor shall not exceed ten thousand dollars. These penalties may be enforced only in a court of competent jurisdiction, but not after both parties to the agreement have fully performed their obligation under such agreement, nor against any creditor, seller or lessor who attempts in good faith to comply with this section. This subdivision shall not apply to agreements involving amounts in excess of fifty thousand dollars.

c.   A violation of the provisions of subdivision b of this section shall not render any such agreement void or voidable nor shall it constitute:

1.   A defense to any action or proceeding to enforce such agreement; or

2.   a defense to any action or proceeding for breach of such agreement.

There are at least eighteen structural relationships between the various sentences of this present version of the New York Plain Language statute that are left implicit in the sense that there is no structural language in the provision that explicitly links each result expressed to the conditions that must be fulfilled in order for that result to occur. Throughout this article it has been asserted that leaving structural relationships implicit, to be figured out from the context, tends to result in documents that are both more complex and more ambiguous. The performance of representative groups of readers in carefully controlled experiments is strong evidence for these claims. These experiments with the New York Plain Language statute will be considered in the next section.

Before that, it will be helpful to examine the normalized version of this statute in which eighteen of the between-sentence structural relationships, which were left implicit in the present version, have been made explicit and precise in the process of normalizing the statute.

If

A.   a written agreement entered into after June first, nineteen seventy-eight,

   (1)   is for the lease of space to be occupied for residential purposes, or

   (2)   is one to which a consumer is a party wherein

the money, property or service which is the
subject of the transaction is primarily for per-
sonal, family or household purposes, and

B.   that agreement does not involve an amount in excess
of fifty thousand dollars,

then

C.   that agreement must be written in non-technical
language and in a clear and coherent manner using
words with common and every day meanings, and

D.   that agreement must be appropriately divided and
captioned by its various sections, and

E.   if

(1) a creditor, seller or lessor fails to comply with
provision C or provision D, and

(2) that creditor, seller or lessor does not attempt in
good faith to comply with this section, and

(3) one of the parties to the agreement has not yet
fully performed his obligations under such
agreement,

then

(4) that creditor, seller or lessor shall be liable to a
consumer who is a party to a written agreement
governed by the provisions thereof in an amount
equal to the sum of any actual damages sus-
tained plus fifty dollars, and

(5) the total class action penalty against any such
creditor, seller or lessor shall not exceed ten
thousand dollars, and

(6) these penalties may be enforced only in a court
of competent jurisdiction, and

(7) the violation resulting from that failure to
comply

(A) shall not render any such agreement void or
voidable, and

(B) shall not constitute a defense to any action
or proceeding to enforce such agreement,
and

(C) shall not constitute a defense to any action
or proceeding for breach of such agreement.

The arrow-diagram of the New York Plain Language statute
is:

$$\succ a - b \longrightarrow \begin{array}{l} c \\ d \\ \succ e - f - g \longrightarrow \begin{array}{l} h \\ i \\ j \\ k \end{array} \end{array}$$
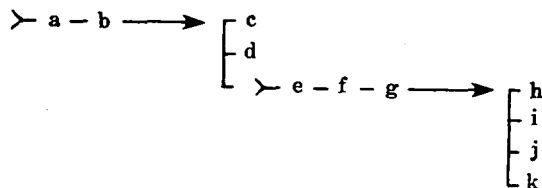
The between-sentence structure of this normalized version of the New York Plain Language statute is explicit and precise, as well as standardized and simplified. It makes crystal clear

(1) that when conditions a and b are fulfilled, results c and d occur, and

(2) that when conditions a, b, e, f, and g are fulfilled, results h, i, j, and k occur.

Although there are small wording changes in the constituent sentences of the normalized version, the principal difference between it and the present version is the explicitness and precision of the between-sentence structure. In the present version the following eighteen structural relationships are left implicit:

(1) that result c is dependent on fulfillment of condition b,

(2) that result d is dependent on fulfillment of condition b,

(3) that result h is dependent on fulfillment of conditions b, f, and g,

(4) that results i and k are dependent on fulfillment of conditions a, b, e, f, and g, and

(5) that result j is dependent on fulfillment of conditions a, b and e.

However, in the normalized version all eighteen of these structural relationships are made explicit and precise. The interesting question, of course, is what difference does it produce in terms of making the statute easier to understand? The answer, which should interest everyone who wants to make legal documents clearer, is provided in the next section.

II. EXPERIMENTAL RESULTS COMPARING PRESENT AND NORMALIZED VERSIONS OF THE NEW YORK PLAIN LANGUAGE STATUTE

The subjects who participated in the experiment to compare

performance in understanding the New York Plain Language statute drafted in normalized form with performance in understanding the present form of the statute were lay persons, law students, and lawyers. Half of each of the three groups worked with the normalized version and the other half worked with the present version. The groups working with the normalized versions proceeded in the following sequence:

(1)   memorandum on normalization.
(2)   normalized version of statute with test questions.

The groups working with the present versions of the statute proceeded in the following sequence:

(1)   present version of statute with test questions.
(2)   memorandum on normalization.

The memorandum on normalization (Appendix A) is intended to familiarize the subjects with provisions written in normalized form and to provide some practice in working with such provisions. When subjects finished the first phase of the experiment, they handed in their results and received the materials for the second phase. A record of the time spent on each phase was recorded. All subjects attempted to answer the same ten questions (Appendix B) on the basis of the version of the statute that they had available. The questions were all of the same form. A set of conditions was given along with a set of results, and the subjects were asked to indicate which of the results occurred by virtue of the statutory provision when all of the given conditions were fulfilled. Performance of the subjects was compared on the basis of their accuracy and speed in answering the ten questions.[4]

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[4] Results on similar comparisons of performance on normalized and present versions of sections of the Internal Revenue Code indicate that law students perform about 20% faster and about 30% more accurately when using normalized versions than when using present versions. Results of pilot experiments with law students on the New York Plain Language statute show even greater differences in accuracy, but no differences in speed. These pilot results tend to be confirmed by the partial data now available from 89 subjects in the full experimental run, which show that all three groups — lawyers, law students and lay persons — work about 80% more accurately when the statute is expressed in normalized form than they do when it is expressed in its current form, with no significant change in the time taken to analyze and answer the questions. Thus, preliminary analysis of the New York Plain Language statute data indicates that normalizing the statute would substantially improve the accuracy with which relevant groups of persons read and understand it, at no sacrifice in time spent.

III. The Pervasiveness of Structural Ambiguity

The presence of structural ambiguity in written legal materials is surprisingly frequent. Unlike the uncertainty that is deliberately incorporated in statutes, regulations, and other legal documents by the conscious choice of vague terms, the uncertainty that results from structural ambiguity appears in most instances to be inadvertent. It is surprising that a profession that holds itself out as expert in the art of communicating so frequently produces written legal documents that are so riddled with inadvertent structural ambiguity. Lawyers are probably more sensitive than any other professional group to the semantic dimension of a written message, but they have a definite blind spot with respect to the structural dimension. Very few law students are exposed to the relevant knowledge for skillfully handling structural problems, because instruction in modern logic is still a rarity in American law schools. The somewhat detailed consideration of one example, the term "unless," indicates why some training in modern logic is so useful. The problem of structural ambiguity is a subtle and complex one that simply is not handled adequately by common sense alone.

In a seminar on Symbolic Logic and Legal Communication, I indicate to the participants that grades will depend upon three things: weekly homework problems, a final examination, and a seminar paper. I further indicate:

> Students will not receive A's, unless they write good seminar papers.

The context in which the "unless" appears in the above statement makes it clear just what structure the use of the term is intended to convey. Abbreviating its constituent sentences by the letters "a" and "c," the form of the sentence is:

> a, unless c.

The "unless" is clearly intended as a "weak" unless, rather than as a "strong" unless. It is meant to assert merely:

> If not c then a.

It is not meant to assert the stronger proposition:

> If not c then a, and if c then not a.

The first proposition is stronger than the second in the sense that the second proposition is logically deducible from the first but not vice-versa. That is, the stronger one says all that the weaker one says, and also says something more. So interpreted, the sentence is saying merely:

> If they do not write good seminar papers,
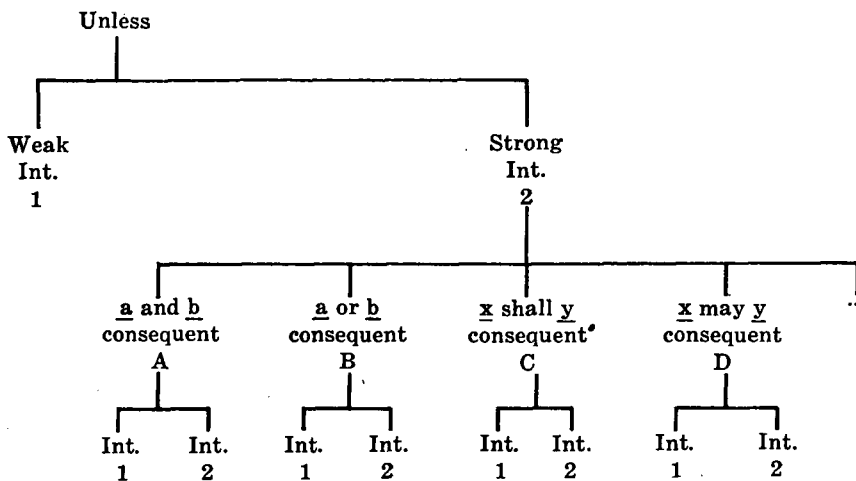> then students will not receive A's.

It is not also saying:

> If they write good seminar papers,
> then students will receive A's.

In this instance the rest of the context makes it clear that grades depend upon other considerations besides the quality of the seminar paper. Sometimes, however, the context simply does not help to determine whether the weak "unless" or the strong "unless" is intended. In most instances in legal usage, it turns out to be a strong "unless." But determining whether the "unless" is weak or strong is only the threshold question.

This is when the complexity starts. Here, we will consider only nine examples; a complete analysis of "unless" would be entirely too lengthy for presentation here. The nine considered are summarized in Figure 1 below. For each instance shown in Figure 1 the "unless" may either be relating constituent sentences to each other, a sentence-part to a constituent sentence, or sentence-parts to each other.

Figure 1

Interpretations of "Unless"

```
                        Unless
                          │
        ┌─────────────────┴─────────────┐
      Weak                           Strong
      Int.                             Int.
       1                                2
                                        │
                   ┌────────┬───────────┼───────────┬──────── ...
               a and b    a or b     x shall y     x may y
             consequent  consequent consequent*  consequent
                  A          B           C            D
                  │          │           │            │
               ┌──┴──┐    ┌──┴──┐     ┌──┴──┐      ┌──┴──┐
             Int.  Int.  Int.  Int.  Int.  Int.   Int.  Int.
              1     2     1     2     1     2      1     2
```

The example involving grades and seminar papers above is an example of Interpretation 1 of "unless," the weak interpretation, as is the example below that deals with when a writ of habeas corpus need not be entertained by federal courts. The other eight interpretations shown in Figure 1, for which examples are given below, are Interpretations 2A1, 2A2, 2B1, 2B2, 2C1, 2C2, 2D1, and 2D2.

Interpretation 1

28 U.S.C. § 2244(b), which deals with finality of judicial determinations, provides:

> When after an evidentiary hearing on the merits of a material factual issue, or after a hearing on the merits of an issue of law, a person in custody pursuant to the judgment of a state court has been denied by a court of the United States or a justice or judge of the United States release from custody or other remedy on an application for a writ of habeas corpus, *a subsequent application for a writ of habeas corpus in behalf of such person need not be entertained by a court of the United States or a justice or judge of the United States* (x need not y) unless *the application alleges and is predicated on a factual or other ground not adjudicated on the hearing of the earlier application for the writ* (c2), and unless

*the court, justice, or judge is satisfied that the applicant
has not on the earlier application deliberately withheld
the newly asserted ground or otherwise abused the writ
(c3).*[5]

The between-sentence structure of this provision is of the form:

When c_1, x need not y unless c_2, and unless c_3.

The first occurrence of the term "unless" is clearly intended as a
weak "unless." Appropriately interpreted, the provision does not
provide that alleging a new ground, not adjudicated at the ear-
lier hearing, alone is to be a sufficient condition for requiring
that an application for a writ of habeas corpus be entertained.
Rather, it requires also that the court, justice, or judge be satis-
fied that the applicant has not abused the writ on the earlier
application. The drafter could have stated the intended struc-
ture more clearly in the following form:

When c_1, then if and only if c_2 and c_3 then x shall y.

Interpretation 2A1

The first interpretation of a strong "unless" with a conjunctive
consequent is interpreting a statement of the form:

(a and b) unless c.

Interpretation 2A1 interprets such a form of statement to mean:

If not c then (a and b), and
if c then not (a and b).

which is logically equivalent to:

If not c then (a and b), and
if c then (not a or not b).

and also logically equivalent to:

(a and b) if and only if not c.

The abbreviation that logicians use for "if and only if" is the

[5] 28 U.S.C. § 2244(b) (1976).

convenient shorthand term, "IFF." So, Interpretation 2A1 can be regarded as the IFF interpretation of:

(a and b) unless c.

Notice that the second conjunct of this interpretation has a consequent that is a disjunction; it is of the form:

not a or not b.

It is extremely rare in legal materials to have results of this form, in effect, to have at least one of two results (perhaps both) occur when some conditions are fulfilled, but not specify which one. So, this Interpretation 2A1 should be expected to be encountered only very rarely.

Interpretation 2A2

The second interpretation of a strong "unless" with a conjunctive consequent is also interpreting a statement of the form:

(a and b) unless c.

Interpretation 2A2 interprets a statement of such form to mean:

If not c then (a and b), and
if c then (not a and not b),

which is *not* logically equivalent to:

(a and b) if and only if not c,

but is stronger than it. Since Interpretation 2A1 is logically equivalent to this "if and only if" statement, Interpretation 2A2 is a stronger interpretation of "unless" than Interpretation 2A1. So, it is appropriate to regard Interpretation 2A2 as the IFF+ interpretation of:

(a and b) unless c,

where the definition of IFF+ is:

(a and b) IFF+ not c = df if not c then (a and b), and
                                    if c then (not a and not b).

Such an interpretation, in effect, occurred in a statement of this form in *Brekken v. Reader's Digest Special Products, Inc.,*[6] in which the court was faced with interpreting the following language from an employment contract between the parties:

> *This agreement shall be effective from the date of execution* (a̲1) and *shall remain in effect for a period of twelve months* (a̲2') and *will be automatically renewed for twelve-month terms* (b̲) unless *sooner terminated* (c̲').[7]

Brekken, who was dismissed by his employer within the first year of his employment, argued that the "unless sooner terminated" language only modified the sentence-part, "will be automatically renewed for twelve-month terms," but not the sentence-part referring to the initial twelve-month period. However, the court concluded:

> It cannot be doubted as plaintiffs assert that they expected their employment to continue for at least one year, but that was merely an expectation and not a right guaranteed by the contracts which they signed. Clearly the phrase "unless sooner terminated" relates to the whole sentence of which that phrase is a part. The court below correctly construed each of these contracts as being terminable at will.[8]

Thus, the court decided in effect:

> If the agreement is sooner terminated, then it is not so that it shall remain in effect for a period of twelve months.

That is:

> If c̲, then not a̲2,

which is logically deducible from the second conjunct of a variation of Interpretation 2A2,

> If c̲, then not a̲1 and not a̲2 and not b̲,

---

[6] 353 F.2d 505 (7th Cir. 1965).

[7] *Id.* at 506.

[8] *Id.*

but would not be logically deducible from Interpretation 2A1.

Interpretation 2A1

1. This agreement shall be effective from the date of execution, and
2. it shall remain in effect for a period of twelve months, and
3. if and only if
   A. it is not sooner terminated, then
   B. it will be automatically renewed for twelve-month terms.

Interpretation 2A2

1. If
   A. the agreement is sooner terminated, then
   B. it shall be effective from the date of execution, and
   C. it shall remain in effect for a period of twelve months, and
   D. it will be automatically renewed for twelve-month terms, and

2. if
   A. the agreement is not sooner terminated, then
   B. it is not so that it shall be effective from the date of execution, and
   C. it is not so that it shall remain in effect for a period of twelve months, and
   D. it is not so that it will be automatically renewed for twelve-month terms.[9]

Thus the court in effect chose Interpretation 2A2 of the applicable language, because the decision that it made would not have been logically deducible from the weaker interpretation.

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[9] With an appropriate definition of "IF. . ., THEN (. . ., AND. . .), BUT OTHER-WISE—NOT" Interpretation 2A2 might be expressed more elegantly as follows:
   IF
      1. this agreement is not sooner terminated,
   THEN
      2. it shall be effective from the date of execution, AND
      3. it shall remain in effect for a period of twelve months, AND
      4. it will be automatically renewed for twelve-month terms, BUT
   OTHERWISE—NOT.

Interpretation 2B1

The first interpretation of a strong "unless" with a disjunctive consequent is the IFF interpretation of:

(a or b) unless c.

Interpretation 2B1 interprets this form of statement to mean:

If not c then (a or b), and
if c then not (a or b),

which is logically equivalent to:

If not c then (a or b), and
if c then (not a and not b),

and also is logically equivalent to:

(a or b) unless c.

Note that the second conjunct of Interpretation 2B1 (the IFF interpretation of "(a or b) unless c") is logically equivalent to the second conjunct of Interpretation 2A2 (the IFF+ interpretation of "(a and b) unless c"). They both are logically equivalent to:

If c then (not a and not b).

Thus, Interpretation 2B1 is weaker than Interpretation 2A2, because 2B1's first conjunct "if not c then (a or b)" is deducible from 2A2's first conjunct "if not c then (a and b)," but not vice-versa.

Interpretation 2B1 is neither stronger nor weaker than Interpretation 2A1 (the IFF interpretation of "(a and b) unless c"), because:

1. the first conjunct of 2B1, "if not c then (a or b)," is deducible from the first conjunct of 2A1, "if not c then (a and b)," but not vice-versa and

2. the second conjunct of 2A1, "if c then (not a or not b)," is deducible from the second conjunct of 2B1, "if c then (not a and not b)," but not vice-versa.

A variation of a 2B1 Interpretation of "unless" occurs in a

New York State statute dealing with sheriffs and constables. The statute provides that

> *The sheriff* (w) need not *attend* (x) or *designate officers to attend* (y) *terms of court in Erie County* (z) unless *requested* (c').[10]

The within-sentence structure of this provision is of the form:

> w need not (x or y) z unless c'.

The " . . . need not . . . " language of this provision says the same thing as the " . . . is permitted to not . . . " sense of " . . . may not . . . ." Therefore, the second conjunct of this 2B1 Interpretation of "unless," namely:

> If c, then it is not so that w need not (x or y) z,

says the same thing as:

> If c, then it is not so that w is permitted to not (x or y) z,

which, in turn, is logically equivalent to:

> If c, then (it is not so that w is permitted to not x z, and it is not so that w is permitted to not y z),

which, in turn, is logically equivalent to:

> If c, then (w shall x z, and w shall y z).

Thus, this provision of the form:

> (. . . or . . .) unless c.

gets the characteristic 2B1 Interpretation of its second conjunct, namely:

> If c, then (not . . . and not . . .),

resulting in the following interpretation of the statute:

1. If
   A. the sheriff is not requested to do so,

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[10] N.Y. JUD. LAWS § 405 (McKinney 1968).

then
   B. he need not attend or designate officers to attend
      terms of court, and
2. if
   A. he is requested to do so,
   then
   B. he shall attend, and
   C. he shall designate officers to attend.

Interpretation 2B2

The second interpretation of a strong "unless" with a disjunctive consequent is also interpreting a statement of the form:

(a or b) unless c.

Interpretation 2B2 interprets this form of statement to mean:

If not c then (a or b), and
if c then (not a or not b),

which is *not* logically equivalent to:

(a or b) if and only if not c,

but weaker than it. Since Interpretation 2B1 is logically equivalent to this "if and only if" statement, Interpretation 2B2 is a weaker interpretation of "unless" than Interpretation 2B1. So, it is appropriate to regard Interpretation 2B2 as the IFF— interpretation of:

(a or b) unless c.

Note, however, that the second conjunct of Interpretation 2B2 (the IFF— interpretation of "(a or b) unless c") is logically equivalent to the second conjunct of Interpretation 2A1 (the IFF interpretation of "(a and b) unless c"). They both are logically equivalent to:

If c then (not a or not b),

where the definition of IFF— is:

(a or b) IFF— not c =df if not c then (a or b), and
                             if c then (not a or not b).

Thus, Interpretation 2B2 is weaker than Interpretation 2A1, because 2B2's first conjunct "if not c then (a or b)" is deducible from 2A1's first conjunct "if not c then (a and b)," but not vice-versa.

Like Interpretation 2A1, Interpretation 2B2 has a second conjunct that has a consequent that is a disjunction. This interpretation should be expected to be encountered only very rarely, because statutes, regulations, and other norms rarely have disjunctive consequences.

Interpretation 2C1

The first interpretation of a strong "unless" with a normative consequent imposing an obligation interprets a statement of the form:

> x shall y unless c.

Interpretation 2C1 interprets this form of statement to mean:

> If not c then x shall y, and
> if c then it is not so that x shall y,

which is logically equivalent to:

> x shall y if and only if not c.

Thus, it is appropriate to regard Interpretation 2C1 as the IFF interpretation of:

> x shall y unless c.

Such an interpretation occurred in *Farmer v. Arabian American Oil Co.*,[11] where the Court was faced with interpreting the language of Federal Rule of Civil Procedure 54(d) (among other things) which provides: "Except when express provision therefore is made either in a statute of the United States or in these rules, costs shall be allowed as of course to the prevailing party unless the court otherwise directs . . . . " Since there were no express contrary provisions, the Court concerned itself with the latter part of the rule that reads:

> *costs shall be allowed as of course to the*

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[11] 379 U.S. 227, 235-36 (1964).

prevailing party (x̲ shall y̲) unless *the court otherwise directs.* . . . (c̲)

In holding that the trial court judge acted properly by allowing only partial costs of a prevailing litigant, the Court declared: "Therefore, the discretion given district judges to tax costs should be sparingly exercised with reference to expenses not specifically allowed by statute . . . . We therefore hold that judge Weinfeld's order assessing only appropriate expenses should have been affirmed by the Court of Appeals." Thus, the Court decided:

> If the court otherwise directs, then it is not so that costs
> shall be allowed as of course to the prevailing party,

which is the second conjunct of Interpretation 2C1 (the IFF interpretation of "x̲ shall y̲ unless c̲"), whose interpretation is:

> If not c̲, then x̲ shall y̲, and
> if c̲, then it is not so that x̲ shall y̲.

Thus, the Court in effect chose Interpretation 2C1 of the applicable language, because the stronger interpretation, Interpretation 2C2, would have prohibited the award of the partial costs that were approved.

Interpretation 2C2

The second interpretation of a strong "unless" that interprets a statement of the form:

> x̲ shall y̲ unless c̲,

is Interpretation 2C2, which interprets this form of statement to mean:

> If not c̲ then x̲ shall y̲, and
> if c̲ then x̲ shall not y̲,

which is *not* logically equivalent to:

> x̲ shall y̲ if and only if not c̲,

but stronger than it. Since Interpretation 2C1 is logically equivalent to this "if and only if" statement, Interpretation 2C2

is a stronger interpretation of "unless" than Interpretation 2C1. So, it is appropriate to regard Interpretation 2C2 as the IFF+ interpretation of:

x shall y unless c,

where the definition of IFF+ in this context is:

x shall y IFF+ not c =df   if not c then x shall y, and
                           if c then x shall not y.

There are two variations of Interpretation 2C2, namely: 2C2' and 2C2". They are interpretations like 2C2 but are interpretations of the forms:

x shall not y unless not c

and

x shall not y unless c,

respectively.

A variation of Interpretation 2C2 occurs in a provision cited in *State Bar Grievance Administrator v. Woll.*[12] The relevant part of the provision is:

> *"an action shall not be dismissed at the plaintiff's instance* (x shall not y) unless *by order of the court upon such terms and conditions as the court deems proper* (c')."[13]

The provision is of the form:

x shall not y unless c',

and its appropriate interpretation is a 2C2" Interpretation, which is:

If not c then x shall not y, and
if c then x shall y.

By Interpretation 2C2" the provision is being interpreted as

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[12] 401 Mich. 155 (1977).
[13] GEN. CT. R. § 504.1(2) (1963).

asserting:

1. If
   A. the court does not order dismissal of an action upon such terms and conditions as the court deems proper, then
   B. the action shall not be dismissed at the plaintiff's instance, and
2. if
   A. the court orders dismissal of an action, then
   B. the action shall be dismissed at the plaintiff's instance upon such terms and conditions as the court deems proper.

Interpretation 2D1

The first interpretation of a strong "unless" with a normative consequent extending permission is interpreting a statement of the form:

x may y unless c.

Interpretation 2D1 interprets this form of statement to mean:

If not c then x may y, and
if c then it is not so that x may y,

which is logically equivalent to:

x may y if and only if not c.

Thus, it is appropriate to regard Interpretation 2D1 as the IFF interpretation of:

x may y unless c.

There is an interesting relationship between Interpretation 2D1 and the 2C1' variation of Interpretation 2C1. This variation interprets a statement of the form:

x shall not y unless not c.

Interpretation 2C1' interprets this form of statement to mean:

If not c then it is not so that x shall not y, and
if c then x shall not y,

which is logically equivalent to:

If not c then x may y, and
if c then it is not so that x may y.

Thus, Interpretation 2D1 (the IFF interpretation of "x may y unless c") is logically equivalent to Interpretation 2C1′ (the IFF interpretation of "x shall not y unless not c"), because both are logically equivalent to:

x may y if and only if not c.

Interpretation 2C2 (the IFF+ interpretation of "x shall y unless c") is stronger than Interpretation 2D1 (the IFF interpretation of "x may y unless c"), because

1. their second conjuncts, "if c then x shall not y" and "if c then it is not so that x may y," are logically equivalent, and
2. the first conjunct of 2D1, "if not c then x may y," is deducible from the first conjunct of 2C2, "if not c then x shall y," but not vice-versa.

The relationships between Interpretations 2C1, 2C1′, 2C2, and 2D1 can be summarized by

$$2C2$$
$$\swarrow \qquad \searrow$$
$$2C1 \qquad 2D1 \longleftrightarrow 2C1'$$
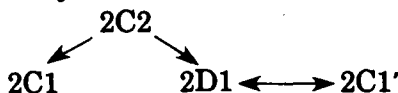
where "$x \longrightarrow y$" indicates "x is stronger than y,"
and "$x \longleftrightarrow y$" indicates "x is logically equivalent to y."

A 2D1 Interpretation of "unless" occurs in 28 U.S.C. § 1732 which deals with records made in the regular course of business and provides in pertinent part:

If any business, institution, member of a profession or calling, of any department or agency of government, in the regular course of business or activity has kept or recorded any memorandum, writing, entry, print, representation or combination thereof, of any act, transaction, occurrence, or event, and in the regular course of business has caused any or all of the same to be recorded, copied,

or reproduced by any photographic, photostatic, micro-film, micro-card, minature photographic, or other process which accurately reproduces or forms a durable medium for so reproducing the original, *the original may be destroyed in the regular course of business* (x may y) unless *its preservation is required by law* (c2).[14]

This provision's between-sentence structure is of the form:

If c_1, then x may y unless c_2.

The 2D1 Interpretation of the consequent is of the form:

If not c_2 then x may y, and
if c_2 then it is not so that x may y,

which is logically equivalent to:

If and only if not c_2, then x may y.

Thus, the 2D1 Interpretation of the consequent of the provision is:

If and only if
1. the original's preservation is not required by law, then
2. it may be destroyed in the regular course of business.

Interpretation 2D2

The second interpretation of a strong "unless" that interprets a statement of the form:

x may y unless c,

is Interpretation 2D2, which interprets this form of statement to mean:

If not c then x may y, and
if c then x may not y.

Unfortunately, in ordinary language a statement of the form "x may not y" is interpreted most frequently as "x must not y."

_____

14 28 U.S.C. § 1732 (1976).

This is unfortunate because it blurs the distinction between "$\underline{x}$ may not $\underline{y}$" and "$\underline{x}$ shall not $\underline{y}$." In one version of the proposed new bankruptcy legislation, for example, "$\underline{x}$ may not $\underline{y}$" is by definition stipulated to have this unfortunate ordinary language interpretation, blurring a distinction that is central to the clear understanding of normative prose. The other interpretation of "$\underline{x}$ may not $\underline{y}$," which is the one intended in the second part of Interpretation 2D2, is "$\underline{x}$ is permitted to not $\underline{y}$." Since this second interpretation of "$\underline{x}$ may not $\underline{y}$" is logically equivalent to:

It is not so that $\underline{x}$ shall $\underline{y}$.

Interpretation 2D2 is logically equivalent to:

If not $\underline{c}$ then $\underline{x}$ may $\underline{y}$, and
if $\underline{c}$ then it is not so that $\underline{x}$ shall $\underline{y}$,

which is *not* logically equivalent to:

If and only if not $\underline{c}$, then $\underline{x}$ may $\underline{y}$,

but is weaker than it. Since Interpretation 2D1 is logically equivalent to this "if and only if" statement, Interpretation 2D2 is a weaker interpretation of "unless" than Interpretation 2D1. So, it is appropriate to regard Interpretation 2D2 as the IFF— interpretation of:

$\underline{x}$ may $\underline{y}$ unless $\underline{c}$,

where the definition of IFF— in this context is:

$\underline{x}$ may $\underline{y}$ IFF— not $\underline{c}$ =df   if not $\underline{c}$ then $\underline{x}$ may $\underline{y}$, and
                                    if $\underline{c}$ then it is not so that
                                    $\underline{x}$ shall $\underline{y}$.

Thus,
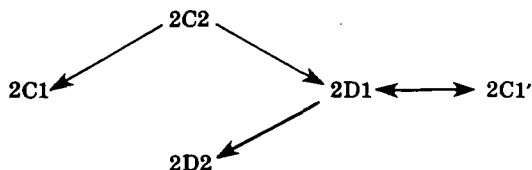
There is a 2D2 Interpretation of "unless" in 28 U.S.C. § 2461(b), which deals with modes of recovery for seizures of

property within the admiralty and maritime jurisdiction of the United States. The provision reads:

> Unless *otherwise provided by Act of Congress* (c1') whenever *a forfeiture of property is prescribed as a penalty for violation of an Act of Congress* (c2) and *the seizure takes place on the high seas or on navigable waters within the admiralty and maritime jurisdiction of the United States* (c3), *such forfeiture may be enforced by libel in admiralty* (x may y) but in cases of *seizures on land* (c4) *the forfeiture may be enforced by a proceeding by libel which shall conform as near as may be to proceedings in admiralty* (w may z).[15]

Its form is:

> Unless $\underline{c1'}$, whenever $\underline{c2}$ and $\underline{c3}$, $\underline{x}$ may $\underline{y}$ but in cases of $\underline{c4'}$ $\underline{w}$ may $\underline{z}$.

The form of the relevant part is:

> Unless $\underline{c1'}$, . . . $\underline{x}$ may $\underline{y}$.

The form of Interpretation 2D2 of this part is:

> If not $\underline{c1}$ then . . . $\underline{x}$ may $\underline{y}$, and
>
> if $\underline{c}$ then . . . $\underline{x}$ may not $\underline{y}$. ("may not" in the sense of "need not")

Thus, the 2D2 Interpretation of the provision is:

1. If
   A. it is not otherwise provided by Act of Congress, then
   B. such forfeiture may be enforced by libel in admiralty, and

2. if
   A. it is otherwise provided by Act of Congress, then
   B. such forfeiture need not be enforced by libel in admiralty.

This, of course, assumes that the provision otherwise by Act of

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[15] *Id.* § 2461(b) (1976).

Congress specifies that enforcement need not be by libel in admiralty. If the Act of Congress providing otherwise specifies that the enforcement *must* be by libel in admiralty, then the appropriate interpretation would be a 2D1 Interpretation. This highlights the ambiguity of "providing otherwise" than an "x̱ may y̱" result by an Act of Congress. The "provision otherwise" may specify:

x̱ shall refrain from doing y̱,

or it may only specify the weaker:

x̱ may refrain from doing y̱.

But both are "provisions otherwise" and they lead to different interpretations.

Interpretation 2D2 (the IFF− interpretation of "x̱ may y̱ unless c̱") is weaker than Interpretation 2C1 (the IFF interpretation of "x̱ shall y̱ unless c̱"), because

1. the second conjunct of 2D2, "if c̱ then x̱ may not y̱," (the "need not" sense of "may not") is logically equivalent to the second conjunct of 2C1, "if c̱ then it is not so that x̱ shall y̱," and
2. the first conjunct of 2D2, "if not c̱ then x̱ may y̱," is deducible from the first conjunct of 2C1, "if not c̱ then x̱ shall y̱," but not vice-versa.

Interpretation 2D2 also has an interesting relationship to Interpretation 2D2′ (the IFF− interpretation of "x̱ may not *i.e.*, need not y̱ unless not c̱"). They are logically equivalent to each other because both are logically equivalent to:

If not c̱ then x̱ may y̱, and
if c̱ then it is not so that x̱ shall y̱.

There are also some other interesting relationships of this sort. Interpretation 2C1 (the IFF interpretation of "x̱ shall y̱ unless c̱") is logically equivalent to Interpretation 2D1′ (the IFF interpretation of "x̱ may not y̱ unless not c̱") because both are logically equivalent to:

x̱ shall y̱ if and only if not c̱.

Also, Interpretation 2C2 (the IFF+ interpretation of "x̲ shall y̲ unless c̲") is logically equivalent to Interpretation 2C̄2′ (the IFF+ interpretation of "x̲ shall not y̲ unless not c̲"), because both are logically equivalent to:

If not c̲ then x̲ shall y̲, and
if c̲ then x̲ shall not y̲.

In summary, where

" ⟷ " indicates "is logically equivalent to"

and   " ⟶ " indicates "is stronger than"

2C1   2D1′
IFF of   ⟷   IFF of
x̲ shall y̲ unless c̲.   x̲ may not y̲ unless not c̲.

2C2   2C2′
IFF+ of   ⟷   IFF of
x̲ shall y̲ unless c̲.   x̲ shall not y̲ unless not c̲.

2D1   2C1′
IFF of   ⟷   IFF of
x̲ may y̲ unless c̲.   x̲ shall not y̲ unless not c̲.

2D2   2D2′
IFF− of   ⟷   IFF− of
x̲ may y̲ unless c̲.   x̲ may not y̲ unless not c̲.

2A2
IFF+ of
(a and b) unless c.

2A1
IFF of
(a and b) unless c.

2B1
IFF of
(a or b) unless c.

2B2
IFF− of
(a or b) unless c.

2C2
IFF+ of
x shall y unless c.

2C1
IFF of
x shall y unless c.

2D1
IFF of
x may y unless c.

2D2
IFF− of
x may y unless c.

2C2″
IFF+ of
x shall not y unless c.

2C1″
IFF of
x shall not y unless c.

2D1″
IFF of
x may not y unless c.

2D2″
IFF− of
x may not y unless c.
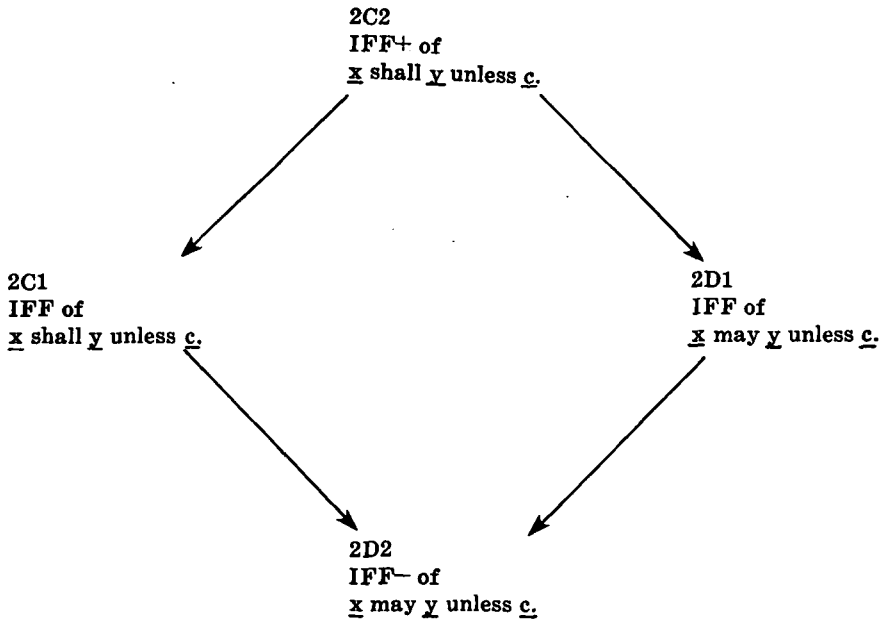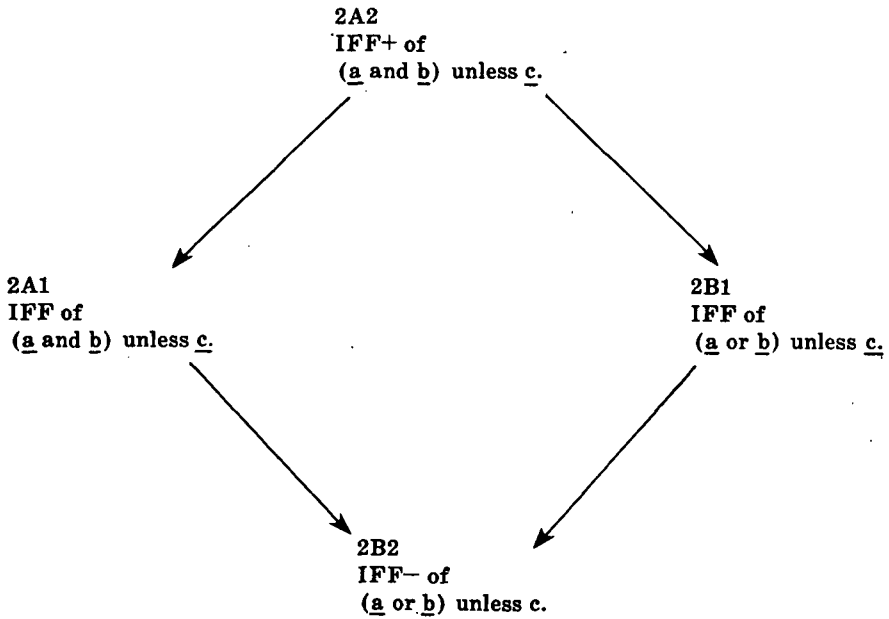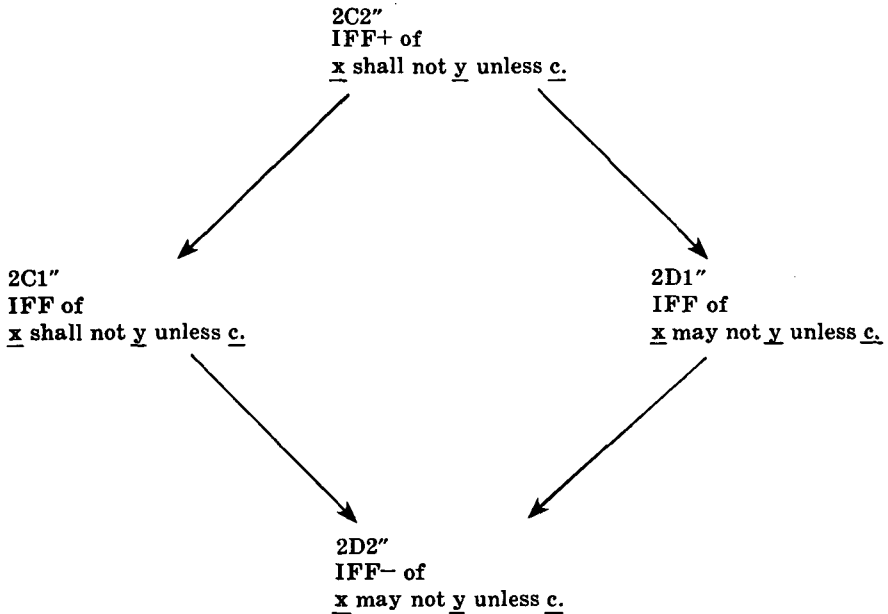
In all of the cases considered above as they would occur in natural prose, there is a question, in effect, about where the parentheses are intended to be placed. For example:

a and b unless c,

may either be:

(a and b) unless c,

or

a and (b unless c).

That the problem is a real one is illustrated in *In Re Kurtzman's Estate*,[16] in which the court was faced with interpreting the following language:

> *The degree of kindred shall be computed according to the rules of the civil law* (a), *and the kindred of the half blood shall inherit equally with those of the whole blood*

---

[16] 65 Wash. 2d 260, 396 P.2d 786 (1964).

in the same degree (b), unless *the inheritance comes to the intestate by descent, devise, or gift from one of his ancestors, or kindred of such ancestor's blood, in which case all those who are not of the blood of such ancestors shall be excluded from such inheritance:* (c) . . . .[17]

The "a and b" provision had been adopted by the first territorial legislature in 1854. The "unless c" provision was added by the Washington state legislature in 1945. The question presented in effect was whether the appropriate interpretation was:

(a and b) unless c,

or

a and (b unless c).

The court in effect chose the latter interpretation.

IV. DEFINING THE STRUCTURAL WORDS

It is possible for legal drafters to make the structure of their documents clear by using carefully defined structural words to achieve structure that is explicit and precise. But such clear structure is rarely encountered because legal drafters rarely define their structural terms. Instead they rely upon the context to indicate the appropriate interpretation among competing alternatives. Frequently the context will be at war with the interpretation that results from logical deduction. The contextual interpretation will be one that is either stronger than or weaker than the logical interpretation, as was the case with various examples of the use of the term "unless" in the prior section. For lawyers who are already accustomed to dealing with defined terms in statutes, regulations, and other legal documents, it is a small step to extend the practice of defining words to include structural words as well as content words.

At present the most common method for indicating a defined term in legal text is to capitalize its initial letter and to have its uncapitalized occurrences indicate usage in an ordinary language sense. This practice is better than not using any special indicator at all, but it is not entirely satisfactory. In the first place, when this practice is used and a particular term has been defined, the occurrence of the term with its initial letter capital-

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[17] *Id.* at 262, 396 P.2d at 789.

ized will not always be unambiguous; such an occurrence will not always indicate its use in the defined sense. There may be grammatical reasons why it is capitalized, such as its occurrence as the first word of the sentence. In those instances it will be unclear whether the capitalized term is intended in its defined sense or in its ordinary language sense. This type of problem is relatively rare. A second kind of problem is much more pervasive. This is the uncertainty that results when such a capitalization convention is being used and occurrences of defined terms are uncapitalized. Such uncapitalized occurrences of defined terms may indicate any one of the three following sets of circumstances:

(1)   that the drafter
    (A)   considered the question of whether this occurrence of the defined term was intended in its defined sense or in its ordinary language sense, and
    (B)   decided that the course of wisdom in this instance was to communicate clearly to readers whether this occurrence of the term was intended in its defined sense or in its ordinary language sense, and
    (C)   was communicating that the term was intended in its ordinary language sense, or

(2)   that the drafter
    (A)   considered the question of whether this occurrence of the defined term was intended in its defined sense or in its ordinary language sense, and
    (B)   decided that the course of wisdom in this instance was *not* to communicate clearly to readers whether this occurrence of the term was intended in its defined sense or in its ordinary language sense, but to be ambiguous as to which and to introduce uncertainty deliberately in this respect, or

(3)   that the drafter had simply *not* considered the question of whether this occurrence of the defined termed was intended in its defined sense or in its ordinary language sense (or did not wish to communicate his considered choice of whether or not to be deliberately ambiguous).

It is helpful in seeking to achieve clear structure to consider a method for defining structural terms that eliminates both of these problems and that indicates explicitly and precisely which of various defined senses of a structural term are intended in particular occurrences. First, it is useful to have some clear and unambiguous way to indicate defined terms, such as:

1. using all capitalized letters,
2. using italics,
3. using underlined letters,
4. using boldface letters, and
5. using other means.

They each can be used in a manner that will be explicit, precise, and unambiguous. We shall use capitalized letters. Thus, for example, "AND" will be used to indicate a defined sense of the structural term "and," and "OR" will be used to indicate a defined sense of the structural term "or."

Second, it is helpful to have available some precise diagramatic notation to indicate "pictures" of structural terms used in their defined senses. The arrow diagrams used for this purpose will be simple and easily learned. There is only one thing that needs to be understood in order to "read" such a picture: each pathway between the tail of an arrow,">—," and the head of an arrow,"—►," indicates a sufficient set of conditions for reaching the set of results to the right of the arrowhead. Although this arrow diagram notation is simple, it is nevertheless quite sophisticated. It is functionally equivalent to the widely-known parentheses-free notation for propositional logic of the Polish logician, Jan Lukasiewicz. Thus, ">—C →R" will indicate:

IF the set of conditions indicated by "C" are fulfilled,
THEN the set of results indicated by "R" occur.

Elementary norms are those that have only one set of sufficient conditions and one result. The most simple elementary norm is the one that has only one condition. An example of such a simple elementary norm is one of the form:

IF a THEN b,

which is represented by the arrow diagram:

>— a ——► b.

A slightly more complex elementary norm is one that has more than one condition in its sufficient set of conditions and these conditions are conjoined — that is, such conditions are related to each other by the logical relationship, which is another way of saying structural relationship, of conjunction, which

  (a) will be indicated in text by the term "AND" and
  (b) will be indicated in the antecedents of arrow diagrams by "−."

An example of a complex elementary norm is one of the form:

  IF a̲ AND b̲ THEN c̲,

which is represented by the arrow diagram:

  >−a−b⟶c.

Compound norms are combinations of two or more elementary norms. There are various kinds of compound norms which are either

  (a) conjunctions of other norms or
  (b) logically equivalent to conjunctions of other norms.

One kind of a compound norm is the norm with a conjunctive consequent. Occurrence of conjunction in a consequent

  (a) will be indicated in text by the term "AND" and
  (b) will be indicated in arrow diagrams by "[."

An example of such a compound norm is one of the form:

  IF a̲ THEN (b̲ and c̲),

which is represented by the arrow diagram:

  >−a⟶[b
         c.

This first example of a compound norm is logically equivalent to the conjunction of two simple elementary norms of the form:

IF a THEN b, AND IF a THEN c,

which is represented by:

$$
\left[\begin{array}{l} \succ a \longrightarrow b \\ \succ a \longrightarrow c. \end{array}\right.
$$
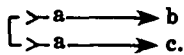
A compound norm with a conjunctive consequent is equivalent to the conjunction of two norms, because its antecedent pathway leads to each of its two results.
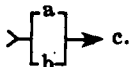
A second kind of compound norm is one with a disjunctive antecedent. The logical relationship of disjunction

(a)   will be indicated in text by the term "OR" and
(b)   will be indicated both in the antecedents and conse-
quents of arrow diagrams by "[ ]."

An example of this second kind of compound norm is one. of the form:

IF a OR b THEN c,

which is represented by:

$$
\succ \left[\begin{array}{c} a \\ b \end{array}\right] \blacktriangleright c.
$$

This example of a compound norm of the second kind is logically equivalent to the conjunction of two simple elementary norms of the form:

IF a THEN c, AND IF b THEN c,

which is represented by:

$$
\left[\begin{array}{l} \succ a \longrightarrow c \\ \succ b \longrightarrow c. \end{array}\right.
$$
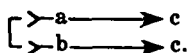
A compound norm with a disjunctive antecedent is equivalent to the conjunction of two norms, because there are two pathways
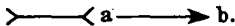
leading to its result.

A third kind of compound norm is one that is a biconditional. The biconditional relationship

(a)   will be indicated in text by the terms "IF AND ONLY IF . . . THEN . . ." and
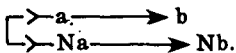(b)   will be indicated in arrow diagrams by " $\succ$——$\prec$
. . . ——▶ ."

An example of a compound norm of this third kind is one of the form:

IF AND ONLY IF a THEN b,

which is represented by:

$\succ$——$\prec$ a ——▶ b.

This example of a compound norm of the third kind is logically equivalent to the conjunction of two simple elementary norms of the form:

⌐$\succ$—a ——▶ b
└$\succ$—Na ——▶ Nb.

A compound norm that is a biconditional is equivalent to the conjunction of two norms because it is really an abbreviation for the pair of norms expressed by the conjunction of a conditional relationship between a set of conditions and a result, and a second conditional relationship between the negation of that set of conditions and the negation of that result.

The negation of a condition or a result

(a)   will be indicated by prefixing the text that expresses that condition or result by the terms "IT IS NOT SO THAT" or by inserting the term "NOT" in an appropriate place in the text and
(b)   will be indicated in arrow diagrams by "N."

To keep expressions as simple as possible, only conditionals, single conditions, and single results will be negated. All other

negations will be transformed into logically equivalent expressions that contain these three kinds of permitted negations. Negations of conjunctions will be transformed into disjunctions of negates, which is to say:

$$N \left[\begin{array}{l} a \\ b \end{array} \right.$$

will be transformed and expressed as:

$$\left[\begin{array}{l} Na \\ Nb \end{array} \right].$$

Negations of disjunctions will be transformed into conjunctions of negates, which is to say:

$$N \left[\begin{array}{l} a \text{---} \\ b \text{---} \end{array} \right.$$

will be transformed and expressed as:

$$\left[\begin{array}{l} Na \\ Nb. \end{array} \right.$$

Negations of biconditionals will be transformed into disjunctions of negates of conditionals, which is to say:

$$N \succ \!\!\!\!\prec a \longrightarrow b$$

will be transformed and expressed as:

$$\left[\begin{array}{l} N \succ \text{---} a \longrightarrow b \\ N \succ \text{---} Na \longrightarrow Nb \end{array} \right].$$
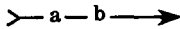
Finally, there are the conditional relationships that have already been exemplified several times. The conditional relationship

(a) will be indicated in text by the terms "IF . . . THEN . . ." and

(b) will be indicated in arrow diagrams by ">⎯. . . ⎯>. . . ."

Conditionals may be of simple elementary norms of the form:

IF a AND b THEN c,

represented by:
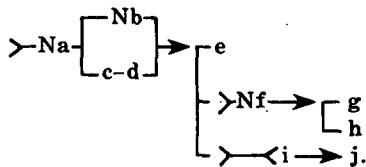
>⎯ a ⎯ b ⎯>

or they may be of compound norms that contain examples of some or all of these five elementary structural relationships, for example, of the form:

IF (NOT a AND (NOT b OR (c AND d))) THEN (e AND (IF NOT f THEN (g AND h)) AND (IF AND ONLY IF i THEN j)),

which is represented by:

>⎯Na⎡⎺Nb⎺⎤⎯>⎯e
      ⎣_c-d_⎦   ⊢ >Nf⎯>⎡g
                          ⎣h
                 ⎣ >⎯<i ⎯> j.

The horizontal parenthesized version of the form of such a compound conditional can also be expressed in a vertical form

(a) that is a blend of the horizontal version and its representation by an arrow diagram and

(b) that achieves the structural function of the parentheses by indentations of the left margin and punctuation (periods and right parentheses):

```
IF
1. Na, AND
2. A) Nb, OR
   B) 1. c, AND
      2. d,
THEN
3. e, AND
4. IF
   A. Nf,
   THEN
   B. g, AND
   C. h, AND
5. IF AND ONLY IF
   A. i,
   THEN
   B. j.
```

This vertical form is useful, because it completely parallels the "normalized" version of a norm and can be used as an outline abbreviation of a normalized norm.

Normalized versions of norms, which clearly express the between-sentence structure of the text by explicit and precise indicators, can be achieved by using the five elementary structural terms summarized in Table 2 below.

Table 2

The Five Elementary Between-Sentence Structural Terms

Structural Relationship	Indicator in Text	Diagrammatic Representation
conditional	IF ... THEN ...	›— ··· ——➤ ···
conjunction	... AND ... (consequent)	⌈ ···
conjunction	... AND ... (antecedent)	... — ...
disjunction	... OR ...	⌈ ··· ⌉
negation	NOT ...	N ..
biconditional	IF AND ONLY IF ... THEN ...	›—‹ ··· ——➤ ···

These five structural terms are sufficient to achieve clarity of between-sentence structure, but if drafters wish to use other terms also, those other terms can be explicitly defined in terms of these five elementary ones. For example, a drafter may wish to use a defined "WHEN . . . THEN . . ." or a defined "WHEN AND ONLY . . . WHEN . . . THEN . . ." to clarify the structure of a statement like the following:

  (c) Upon completion of the investigation a copy of the investigative report will be supplied to both the insured and the insurer.[18]

A statement of the following form:

WHEN a THEN b.   =df   IF a THEN b
                          within a reasonable time,

can be used to indicate that a term of the form "WHEN a THEN b" is equal to, by definition, "IF a THEN b within a reasonable time." The defined term would be represented by:

$$\succ\!\!-a\longrightarrow b.$$
$$\underline{w}$$

Similarly, "WHEN AND ONLY WHEN . . . THEN . . ." can be defined:

WHEN AND ONLY   WHEN a THEN b, AND
WHEN a THEN b.   =df   WHEN Na THEN Nb.

The defined term would be represented by:

$$\succ\!\!-\!\!<a\longrightarrow b.$$
$$\underline{w}$$

With two such definitions available, it is easy to express the clar-

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[18] PENN. CODE, tit. 31, § 61.6(c) (1979).

ification of whether the "Upon . . . ." statement above was intended to assert the stronger or the weaker of the two.

Similar uncertainties, like those accompanying usage of the term "unless" exemplified in the previous section, can be resolved with stipulated definitions of this sort together with subscripts. The definitions below can be used to indicate the structural interpretations listed in the right column.

Defined Term	Interpretation
UNLESS $_w$	Weak "unless"
UNLESS $_i$	Strong IFF "unless"
UNLESS $_+$	Strong IFF+ "unless"
UNLESS $_-$	Strong IFF− "unless"
UNLESS $_{ii}$	Strong IFF "unless" with respect to both items
	(For example, in " (a AND x shall y) UNLESS c' the "UNLESS ii" indicates the strong IFF interpretation of "unless" with respect to the 'and' and the strong IFF interpretation with respect to the "shall."
UNLESS $_{i+}$	Strong IFF "unless" with respect to the first item and strong IFF+ "unless" with respect to the second
UNLESS $_{i-}$	Strong IFF "unless" with respect to the first item and strong IFF− "unless" with respect to the second
UNLESS $_{+i}$	Strong IFF+ "unless" with respect to the first item and strong IFF "unless" with respect to the second
UNLESS $_{++}$	Strong IFF+ "unless" with respect to both items
UNLESS $_{+-}$	Strong IFF+ "unless" with respect to the first item and strong IFF− "unless" with respect to the second
UNLESS $_{-i}$	Strong IFF− "unless" with respect to the first item and strong IFF "unless" with respect to the second
UNLESS $_{-+}$	Strong IFF− "unless" with respect to the first item and strong IFF+ "unless" with respect to the second
UNLESS $_-$	Strong IFF− "unless" with respect to both items
UNLESS $_{+i-}$	Strong IFF+ "unless" with respect to the first item, strong IFF 'unless' with respect to the second, and strong IFF− "unless" with respect to the third

and so on for the twenty six other "UNLESS's" with triple subscripts and the others with more than three subscripts.

> (For example, in "(x shall y AND w may z)
> UNLESS$_{+ i - c}$" the "UNLESS$_{+ i}$ "indicates the
> strong IFF+ interpretation of "unless" with
> respect to the "shall," the strong IFF interpre-
> tation with respect to the "and," and the strong
> IFF− interpretation with respect to the "may.")

These notational conventions would lead to definitions such as the following:

x shall y UNLESS$_w$ c.	=df	IF NOT c THEN x shall y.
x shall y UNLESS$_i$ c.	=df	IF AND ONLY IF NOT c THEN x shall y.
x shall y UNLESS$_+$ c.	=df	IF NOT c THEN x shall y, AND IF c THEN x shall NOT y.
(a AND x shall y) UNLESS$_{i+}$ c.	=df	(If NOT c, THEN a AND x shall y) AND (IF c, THEN NOT a OR x shall NOT y).
(x shall y AND w may z) UNLESS$_{+i -}$ c.	=df	(IF NOT c, THEN x shall y AND w may z) AND (IF c, THEN x shall NOT y OR w MAY NOT z).
(x shall y AND w may z) UNLESS$_{i+i}$ c.	=df	(IF NOT c, THEN x shall y AND w may z) AND (IF c, THEN IT IS NOT SO THAT x shall y AND IT IS NOT SO THAT w may z).

etc. for the others.

The uncertainties that arise when a defined term is being used in an undefined sense can also be resolved by means of a pair of subscripting conventions: the subscript "o" can be used to indicate an intent to use a defined term in its (o)rdinary language sense, and the subscript "a," to indicate an intent to be (a)mbiguous. Thus, the undefined usages of the defined "UN-LESS" can be clearly indicated by the terms summarized in Table 3.

Table 3

Clear Indicators of Undefined Usages of Defined Terms

Indicator Terms	Intended Interpretations
UNLESS$_o$	The defined term "UNLESS" is being used on this occasion in its ordinary language sense.
UNLESS $_a$	The defined term "UNLESS" is being used ambiguously on this occasion: whether it is more appropriate to interpret it as being used in its ordinary language sense or being used in one of its DEFINED senses is deliberately left to the reader to interpret from the total context.
unless	The unsubscripted "unless" indicates either that the writer has simply not considered the question of which sense he or she is using the term or
•	that, although he or she has considered the question, he or she does not wish to communicate whether or not the term is being used ambiguously.

For purposes of most legal drafting tasks it is simpler (and clearer) just to use the five elementary structural terms rather than to include additional definitions. Those five are sufficient for expressing statutes, regulations, and other legal documents in normalized form and are the best choices for most tasks. Only for rare and relatively complex tasks will addition of the complexity of more definitions be worthwhile and ultimately result in a clearer document.
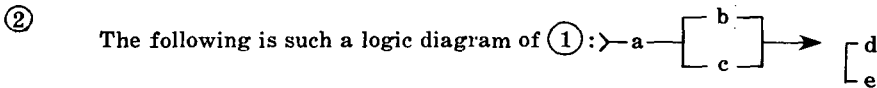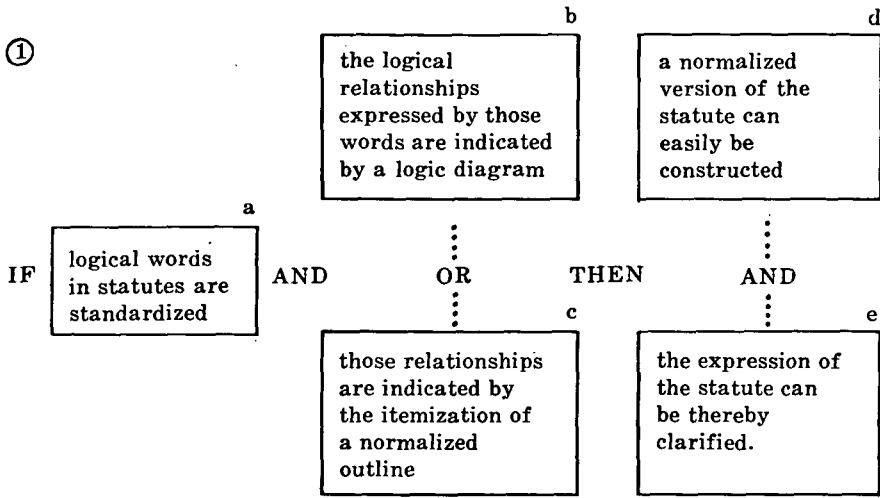
CONCLUSION

At present most legal drafters are little better than rank amateurs in handling the structure of the texts they draft. Their performance in dealing with structure simply does not pass muster. There are relevant intellectual skills that can help improve this embarrassing, disgraceful, and irresponsible performance, which perhaps in the not too distant future will also be legally vulnerable.[19] It is long past the time that these skills should be mastered by those entrusted with performing one of society's most sensitive tasks. Understanding of, and deftness in the use of some of the techniques of modern logic are central among the

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[19] Note, *Attorney Malpractice in California: The Liability of a Lawyer Who Drafts an Imprecise Contract or Will*, 24 U.C.L.A. L. REV. 422 (1976).

skills relevant for improving the structure of legal drafting. Bringing logic to bear will not remove all uncertainty from legal documents. That is neither possible nor would it be wise. Desirable flexibility can be deliberately retained by the choice of general or vague content words, but the inadvertent uncertainties that slip in by way of inept handling of structural aspects will be minimized. In the quest for structure that is so clear that language may be truly plain, insight about need alone is not enough. Those bent on meaningful reform must master the relevant intellectual skills. It may also help to seek the serenity to accept the things that cannot be changed, the courage and ability to change those things that should be, and the wisdom to know the difference.

Appendix A

NORMALIZED STATUTES

①

IF │ logical words in statutes are standardized │ **a**

AND

│ the logical relationships expressed by those words are indicated by a logic diagram │ **b**

OR

│ those relationships are indicated by the itemization of a normalized outline │ **c**

THEN

│ a normalized version of the statute can easily be constructed │ **d**

AND

│ the expression of the statute can be thereby clarified. │ **e**

② The following is such a logic diagram of ① : ⟩─a─⎡ b / c ⎤─➤ ⎡ d / e

Each pathway between the ⟩─── and the ───➤ in the diagram represents a sufficient set of conditions for reaching the results to the right of the ───➤. Thus **a-b** and **a-c** each represent sufficient sets of conditions for getting to result **d** and to result **e**.

③ The following is an itemized normalized outline of ① :

IF
1. (a), AND
2. A) (b), OR
   B) (c),
THEN
3. (d), AND
4. (e).

(The itemization is the shaded part. A pair of numerals or capital letters followed by a pair of periods accompanies AND-connections between sentences, whereas a pair of numerals or capital letters followed by a pair of right parentheses accompanies OR-connections.)

④ The following is a normalized version of ① :

IF
1. logical words in a statute are standardized, AND
2. A) the logical relationships expressed by those words are indicated by a logic diagram, OR
   B) those relationships are indicated by the itemization of a normalized outline,
THEN
3. a normalized version of the statute can easily be constructed, AND
4. the expression of the statute can thereby be clarified.

⑤ ① and ② exemplify four of the eight standardized ways of indicating logical relationships between sentences. The complete list of the logical words and their diagrammatic representations follows:

1. ... AND ... (between conditions)

2. ... AND ... (between results)

3. ... OR ...

4. NOT ...   N ...

5. ... IF ...

6. ... IF AND ONLY IF ...

7. IF ... THEN ...

8. IF AND ONLY IF ... THEN ...

⑥ Consider the following arrow diagram of a statute;
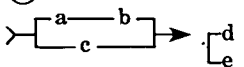
One pathway leading to result d̲ is a̲-b̲.
    A. What is the other pathway leading to d̲, and what two pathways lead to e̲?
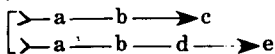   (See answers below.)
The combinations of circumstances that define a situation are specified by sets of fulfilled conditions. To distinguish combinations from pathways, the sets of letters that represent such combinations are enclosed in parentheses. Do each of the following combinations lead to result e̲ by virtue of the statute above?
    B. (a)
    C. (a-b)   If yes, by virtue of which pathway?
    D. (a-b-c)

⑦ Sometimes a result in a statute is itself a complex " ... then ..." statement. For example:
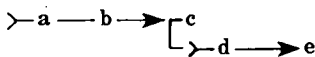
The combination (a-b) leads to result c̲ by the a̲-b̲ pathway, but it does not lead to result e̲, because it is not specified whether d̲ or N̲d̲ is the case in (a-b). Because the statute represented is equivalent to:

Answers to ⑥ :
    A. c̲, and a̲-b̲, c̲.
    B. N̄o.
    C. Yes, by a̲-b̲.
   D. Yes, by a̲-b̲ and by c̲.

condition d must also be fulfilled to reach result e. Which results (by which pathways) does combination (a-b-d) lead to by virtue of this statute? (See answers below.)

⑧ There are two steps in using a normalized statute to determine whether given . legal results occur by virtue of that statute in a specified situation:

Step 1   Determine the combination that represents the circumstances of that situation.

Step 2   Determine whether that combination fulfills the conditions of one of the pathways of the arrow diagram of that normalized statute.

⑨ Consider the following normalized statute, the corresponding arrow diagram, and the given factual situation:

	IF
a	1. a person is convicted of assault,
	THEN
b	2. that person shall be imprisoned for a term of not less than six nor more than ten years, AND
	3. IF
c	A) the assault was committed with a firearm, OR
d	B) the person has a prior felony conviction,
	THEN
e	c) that person shall not be eligible for parole during the first five years of imprisonment.
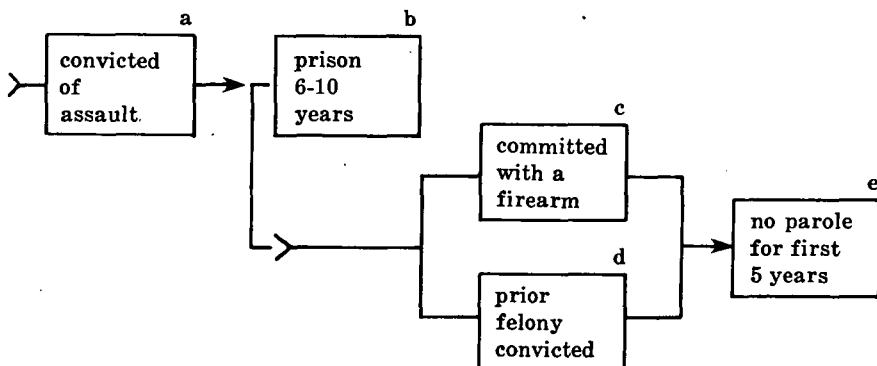
THE SITUATION

Jones, who on two prior occasions had been convicted of a felony, was arrested and tried for aggravated assault stemming from a knifing incident. After many trial delays, he was ultimately convicted on a lesser charge of assault. Which results occur by virtue of the statute above?

THE ANALYSIS

Step 1   The combination that represents the situation is (a-d), i.e.,
             a. convicted of assault, and
             d. prior felony conviction

Answers to ⑦ :
    To result c by a-b; and to result e by a-b-d.

Step 2   Combination (a-d) leads to result b̲ by pathway a̲, and to result e̲ by pathway a̲-d̲.

⑩ See how well you understand the interpretation of arrow diagrams by working through the following example and comparing your answers with those given below. Where you differ, be sure you understand why the answer given is correct.
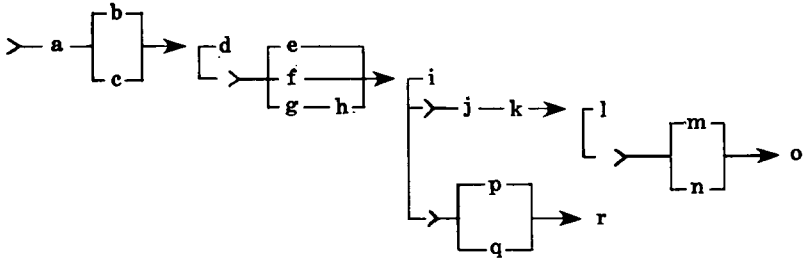
In each case, which results occur by virtue of the statute above? By which pathway? (Check each one as you do it, reading both the positive and negative parts of the answer carefully and being sure that you understand why the non-occurring results fail to occur.)

A. (a-b-e-h-j-m-n)   _____
B. (a-b-c-f-j-k-m)   _____
C. (a-c-e-g-h-k-m-p) _____
D. (b-c-e-f-j-k-m-q) _____
E. (a-b-f-j-k-n-p)   _____
F. (a-b-c-g-j-k-m-q) _____

Answers to ⑩ :

A. d̲ by a̲-b̲; i̲ by a̲-b̲-e̲. But not l̲ (k̲ is necessary), nor o̲ (k̲ is necessary), nor r̲ (p̲ or q̲ is necessary).

B. d̲ by a̲-b̲ and by a̲-c̲; i̲ by a̲-b̲-f̲ and by a̲-c̲-f̲; l̲ by a̲-b̲-f̲-j̲-k̲ and by a̲-c̲-f̲-j̲-k̲; o̲ by a̲-b̲-f̲-j̲-k̲-m̲ and by a̲-c̲-f̲-j̲-k̲-m̲. But not r̲ (p̲ or q̲ is necessary).

C. d̲ by a̲-c̲; i̲ by a̲-c̲-e̲ and by a̲-c̲-g̲-h̲; r̲ by a̲-c̲-e̲-p̲ and by a̲-c̲-g̲-h̲-p̲. But not l̲ nor o̲ (j̲ is necessary).

D. None. (a̲ is necessary for each of the results).

E. d̲ by a̲-b̲; i̲ by a̲-b̲-f̲; l̲ by a̲-b̲-f̲-j̲-k̲; o̲ by a̲-b̲-f̲-j̲-k̲-n̲; r̲ by a̲-b̲-f̲-p̲;

F. d̲ by a̲-b̲ and by a̲-c̲. But not i̲ nor l̲ nor o̲ nor r̲ (e̲ or f̲ or h̲ is necessary).

Appendix B

1. FIRST fill out the biographical information.

NAME:_____   CLASS YEAR 1st____2nd____3rd_____
ADDRESS:_____   TELEPHONE:_____

_____

_____

2. THEN mark here the last number written on the board. ▶ [_____]

3. THEN use Sheet 2 to answer the questions below.

PROBLEMS

Given

   a. that a consumer signed a 25-year home mortgage agreement with a savings bank on February 20, 1979 for purchase of a new family residence,

   b. that the savings bank did not make a good faith effort to use a mortgage agreement that was appropriately captioned by its various sections, and the form actually used was confusing to the consumer as a result, and

   c. that after January, 1981, the consumer refused to make further payments, claiming that he was misled by the prepayment terms stated in the agreement,

which of the following results occur by virtue of the quoted parts of Section 5-701?

   d. The agreement must be written in non-technical language and in a clear and coherent manner using words with common and every day meanings. ....   1. ☐ ☐   (yes no)

   e. The savings bank shall be liable to the consumer in an amount equal to the sum of the actual damages plus $50. .   2. ☐ ☐

   f. Even if (b) is a violation, it shall not constitute a defense to any action or proceeding to enforce the agreement. 3. ☐ ☐

Given

   a. that a consumer signed a written agreement on July 31, 1978 for the purchase of a $450 household freezer and a quantity of frozen food,

   b. that the agreement used words in a technical sense and outside their common and every day meanings, in spite of the seller's good faith attempt to comply with the requirements of Section 5-701 with respect to how agreements are to be written, and

   c. that two months later the consumer brought suit claiming that the seller had delivered a defective freezer and no freezer food,

does the following result occur by virtue of the quoted parts of Section 5-701?

   d. Even if (b) is a violation, it shall not render the agreement void or voidable. .... 4. ☐ ☐   (yes no)

Given

  a. that a consumer agreed in writing on October 24, 1978 to purchase a Sky Stream travel trailer from the local dealer for $8500 to use on a trip to the Rockies,

  b. that the dealer made no attempt to comply with Section 5-701, but merely copied the complicated technical language from a similar agreement that he used in the sale of boat trailers, and

  c. that the consumer sued the dealer shortly afterwards on the grounds that the dealer had not delivered a special refrigerator unit with the trailer as promised in the writing,

does the following result occur by virtue of the quoted parts of Section 5-701?

  d. The seller shall be liable to the buyer in an amount equal to the sum of the actual damages plus $50. .... 5.   yes   no
                                                              □   □

Given

  a. that a borrower entered into a written agreement for a $5,000 loan from a bank,

  b. that the bank did not in good faith attempt to draft the agreement in a clear and coherent manner, and the document the borrower signed was unclear and filled with technical language, and

  c. that the borrower sued the bank before completing his loan repayment claiming that the loan agreement was poorly drafted and unconscionable,

does the following result occur by virtue of the quoted parts of Section 5-701?

  d. The agreement must be appropriately divided and captioned by its various sections. .... 6.   yes   no
                                                              □   □

Given

  a. that a consumer signed a written agreement on July 31, 1978 to purchase a yacht for personal and family use,

  b. that the agreement was written in complex technical language since the seller did not make a good faith effort to rewrite an older, standard form agreement, and

  c. that on October 1, 1978 the consumer brought suit to rescind the contract because the seller failed to deliver the yacht when promised even though the buyer had put the $55,000 purchase money in escrow as agreed,

does the following result occur by virtue of the quoted parts of Section 5-701?

  d. Even if (b) is a violation, it shall not constitute a defense to any action or proceeding for breach of such agreement. . 7.   yes   no
                                                              □   □

Given

  a. that a consumer signed a written agreement in September 7, 1978 to enroll in a group health insurance plan providing for benefits up to a maximum of $50,000 for payment of $155 annual premiums,

  b. that the instrument he signed was a complicated form agreement using technical language, and

  c. that one week later the buyer decided not to enroll in the health insurance plan, because he was unsure of the financial condition of the insurance company,

which of the following results occur by virtue of the quoted parts of Section 5-701?

    d. Even if (b) is a violation, it shall not render the agreement   yes no
      void or voidable. .... 8. ☐   ☐

    e. The agreement must be appropriately divided and captioned
      by its various sections. .... 9. ☐   ☐

Given

    a. that a 3-year lease agreement is entered into for rental of a building for non-residential purposes at the rate of $1,000 per month,

    b. that the agreement was made on July 31, 1978, but on December 12, 1981 the lessee brought suit claiming damages and $50 on the grounds that the lessor failed to repair a leaky roof, and

    c. that the lessor has not make a good faith effort to write the lease in non-technical language, and it is not so written,

does the following result occur by virtue of the quoted parts of Section 5-701?

    d. Even if (c) is a violation, it shall not constitute a defense to   yes no
      any action or proceeding to enforce such agreement. ..... 10. ☐   ☐

Please mark here the last time number written on the board.	▶	