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LOGIC AND LAWS: RELIEF FROM STATUTORY OBFUSCATION

Ever-expanding use of the legislative process in recent years has resulted in a vast proliferation of statutes and regulations. The Public Acts of the First United States Congress (1789-91) filled only 203 pages.¹ The Public Acts of the Thirty-first Congress (1850-51) filled 227 pages,² those of the Sixty-first Congress (1909-11) filled 1459 pages,³ and those of the Ninety-first Congress (1969-71) filled 2938 pages.⁴ In addition, publication of new and recently amended federal regulations contributed to a *Federal Register* exceeding 45,000 pages in length in 1974. The growth of state statutory materials parallels this trend.

Unfortunately, the technology of statutory expression has failed to keep pace with the very technological changes which many of the statutes themselves regulate. With the increasing trend towards legislation as a means of effecting fundamental social change and the increased number and complexity of statutes,⁵ it is time to reassess tolerance of ambiguity and obscurity in statutes. As the body of statutory material continues to grow, it is important to take steps to assure that general statutory policies, as well as statutory details, are not obscured by the difficulty of communicating such a large mass of information. This note will examine the potential of normalization, a process whereby conditions and consequences in a statute are arranged and related in an orderly manner, as a means for improving the readability of statutes and relieving them of syntactic ambiguity.

I. SYNTACTIC AMBIGUITY

A. *The Nature of Syntactic Ambiguity*

There are at least three identifiable kinds of ambiguity. Semantic vagueness is the uncertainty which inheres in the flexible meanings of words. Subject as it is to all the difficulties of language and meaning, semantic vagueness is the source of much uncertainty and, consequently, of litigation. However, such semantically vague terms as "reasonable," "undue," "excessive," "good faith," and "sufficient" grant to the tribunal interpreting a statute a means of tempering otherwise harsh rules to achieve just re-

¹ 1 Stat. 1 *et seq.* (1789).

² 9 Stat. 421 *et seq.* (1850).

³ 36 Stat. 1 *et seq.* (1909).

⁴ 83 Stat. 1 *et seq.* (1969); 84 Stat. 1 *et seq.* (1970-71).

⁵ See Dickerson, *Electronic Computers and the Practical Lawyer*, 14 J. LEGAL ED. 485, 486 (1962).

sults.⁶ Vagueness of this nature is also one of the most important tools available to the draftsman desiring to promulgate a general rule for the adjudication of disputes best resolved on a case-by-case basis,⁷ and no system of justice could function without it.

Semantic ambiguity arises when words which give the reader choices between clear alternatives in word meanings are employed.⁸ Although conceptually distinct, in practice semantic vagueness and semantic ambiguity sometimes overlap.⁹ For example, in some contexts the statutory use of the term "domestic animal" may be both semantically vague and ambiguous. How domesticated must a formerly wild beast be in order to qualify as a domestic animal?¹⁰ A phrase may also be subject to semantic

⁶ For a typical example of the use of semantic vagueness, see *United States v. Ulysses*, 72 F.2d 705 (2d Cir. 1934), where the court was faced with deciding whether the novel *Ulysses* by James Joyce was an "obscene" book. Clearly, "obscene" books are not readily identifiable. The degree of identifiability is a function of the semantic vagueness of the words employed in a statute. The greater the semantic vagueness, the greater the flexibility a court is given to interpret a statute.

⁷ See Miller, *Statutory Language and the Purposive Use of Ambiguity*, 42 VA. L. REV. 23 (1956).

⁸ For an illustration of the complex statutory construction problems semantic ambiguity can create, see *Lawson v. Suwanee Fruit & Steamship Co.*, 336 U.S. 198 (1949), where an employee of the respondent company lost the sight in his left eye in an industrial accident. The employee had previously lost the use of his right eye in a nonindustrial accident, and the controverted issue involved the applicability of second-injury provisions under the Longshoremen's and Harbor Workers Compensation Act, 33 U.S.C. § 901 *et seq.* (1970). The Court held that recourse to a statutory definition of the word "disability" was inappropriate although the statute specifically defined "disability" for purposes of the Act. The Court accepted the broader common usage definition since strict adherence to the technical statutory definition would have yielded results incompatible with the purposes of the statute.

A similar construction problem arises when it is unclear whether a word is to be given its generic or specific meaning. In *Milton v. Milton*, 193 Miss. 563, 10 So. 2d 175 (1942), the court was asked to decide whether the words "my home place" used in a will referred to the home owned by the testator upon execution of the will or the one the testator owned and occupied at the time of his death.

⁹ Similarly, semantic ambiguity and syntactic ambiguity, which is discussed in the text accompanying notes 12-15 *infra*, may also overlap. The first criminal to be sentenced to death after Massachusetts changed the form of capital punishment from hanging to electrocution argued that electrocution was "unusual" and therefore constitutionally impermissible. The Massachusetts Supreme Court held that "the word 'unusual' must be construed with the word 'cruel' and cannot be taken so broadly as to prohibit every humane improvement not previously known in Massachusetts." *Storti v. Commonwealth*, 178 Mass. 549, 553 (1901). What makes this interpretation so startling is the fact that the court was construing not the United States Constitution, but the Massachusetts constitution, which prohibits "cruel or unusual punishments" (emphasis added). In other words, "or" can mean "and" in certain contexts.

¹⁰ This exact problem arose in *Commonwealth v. Massini*, 200 Pa. Super. 257, 188 A.2d 816 (1963), where the defendant was convicted of shooting his neighbor's cat under a Pennsylvania statute which made it a misdemeanor to "wilfully and maliciously kill, maim, or disfigure any domestic animal. . . ." Although the Statutory Construction Act specifically defined "domestic animal" as any "equine animal, bovine animal, sheep, goat and pig," the court below thought it could ignore the statutory definition because of the provision in § 33 of the Act that "Words and phrases shall be construed . . . according to their common and approved usage; . . ." The lower court, characterizing the problem as one of semantic vagueness, submitted to the jury the question of whether the cat had been a "domestic

ambiguity where statutory definitions, common law definitions, dictionary definitions, or common usage definitions vary.¹¹

The primary focus of this article, however, is on syntactic ambiguity. This ambiguity arises from the way in which the meaning of a sentence is influenced by the intended relationships between individual words and phrases used in the sentence, as distinct from the way in which the meaning of the sentence is influenced by the meaning of the individual words and phrases. Syntactic ambiguity is latent in a large number of statutes. For example, a statute which states "If *A* or *B* and *C* then *D*" could mean "If (*A* or *B*) and *C*, then *D*" or "If *A* or (*B* and *C*) then *D*." The difference might be fatal in the case of a statute which reads:

If a person kills another during the commission of a felony *or* kills another by means of a firearm *and* such killing is with premeditation, *then* such person shall be guilty of murder in the first degree.

Two possible interpretations of the above statute are schematically illustrated in Figure 1. The armed robber who accidentally stabs and kills a victim during a scuffle is a first-degree murderer under the second interpretation but not under the first.¹²

One need not resort to hypotheticals to produce examples of serious syntactic ambiguities. The first sentence of section 315(a) of the Federal Communications Act¹³ states:

If any licensee shall permit any person who is a legally qualified candidate for any public office to use a broadcasting station, he shall afford equal opportunities to all other such candidates for

animal." The superior court recognized that "domestic animal" may be semantically ambiguous, but that freedom to choose among alternative meanings was foreclosed by the Statutory Construction Act definition and the express exemption of § 33. Accordingly, it reversed, holding that the cat was not a domestic animal, and the defendant had therefore committed no crime.

¹¹ In *Simmons v. United States*, 308 F.2d 160 (4th Cir. 1962), Judge Sobeloff rejected the argument of the taxpayer that a \$25,000 prize he won was nontaxable by virtue of the "civic achievement" exception to the general rule taxing prizes and awards in section 74(b) of the 1954 Internal Revenue Code. In that case, a brewery had placed a specially tagged rock fish in Chesapeake Bay, offering a substantial sum and attendant publicity to the lucky fisherman who caught it. The taxpayer claimed that the feat was a "civic achievement." The court looked to the dictionary definition of "civic" in deciding that the promotion of beer sales was not a civic purpose.

¹² Professor Layman E. Allen discusses a similar kind of problem with the California Pimping Statute which states: "Any person who, knowing another person is a prostitute, . . . solicits or receives compensation for soliciting for such person, is guilty of pimping, a felony. . . ." CAL. PENAL CODE § 266h (West 1953), *as amended*, CAL. PENAL CODE § 266h (West 1969). Is a man who had the requisite knowledge and who solicited for a prostitute guilty of pimping? It depends. If the statute means that anyone who [solicits for her] OR [receives compensation for soliciting for her] is guilty of pimping, then he is guilty. But if it means that the crime of pimping is committed by one who [solicits compensation for soliciting for her] OR [receives compensation for soliciting for her], then the contrary result is reached. This precise issue was litigated in *People v. Smith*, 44 Cal. 2d 77, 279 P.2d 33 (1955). Allen, *Law, Logic and Learning*, 31 HARV. L. RECORD, Oct. 6, 1960, at 10.

¹³ 47 U.S.C. § 315 (1970).

that office in the use of such broadcasting station: *Provided*, That such licensee shall have no power of censorship over the material broadcast under the provisions of this section.

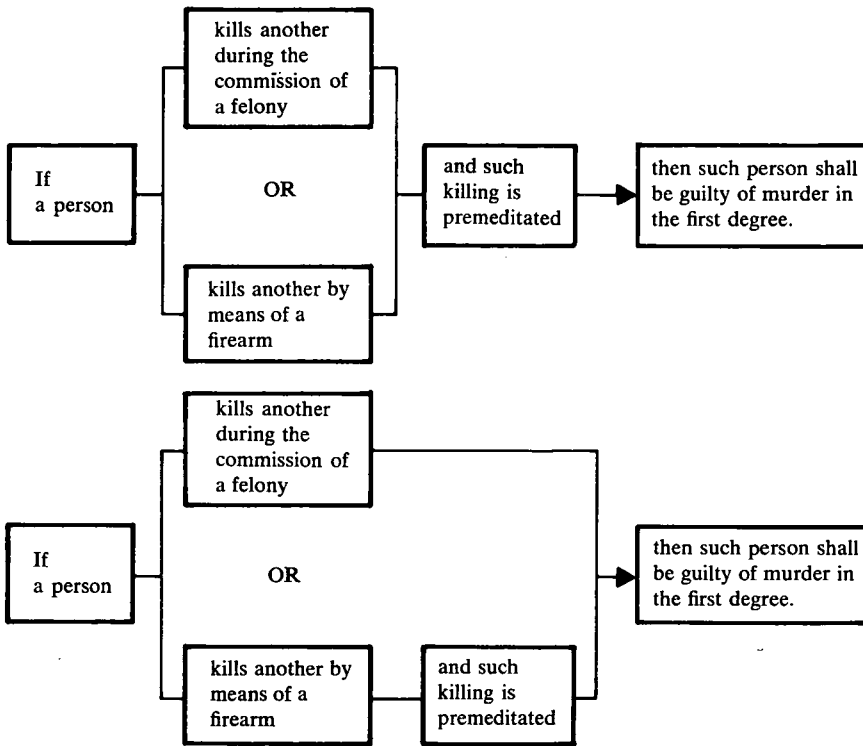


FIGURE 1

Expressed in a shorthand notation where letters refer to clauses in the above text, the statute has the following form:

If *A,B*: *Provided*, That *C*.

There are at least three logically plausible alternative interpretations of this sentence:¹⁴

Alternative 1: (If *A*, then *B*) and *C*.

IF

A. any licensee shall permit any person who is a legally qualified candidate for any public office to use a broadcasting station,

THEN

B. such licensee shall afford equal opportunities to all other such candidates for that office in the use of such broadcasting station,

¹⁴ The author is indebted to Layman E. Allen for this example.

AND

C. such licensee shall have no power of censorship over the material broadcast under the provisions of this section.

Alternative 2: If A, then (B and C).

IF

A. any licensee shall permit any person who is a legally qualified candidate for any public office to use a broadcasting station,

THEN

B. such licensee shall afford equal opportunities to all other such candidates for that office in the use of such broadcasting station, and

C. such licensee shall have no power of censorship over the material broadcast under the provisions of this section.

Alternative 3: (If A, then B) if C, which is logically equivalent to: if (A and C), then B.

IF

A. any licensee shall permit any person who is a legally qualified candidate for any public office to use a broadcasting station, and

C. such licensee shall have no power of censorship over the material broadcast under the provisions of this section,

THEN

B. such licensee shall afford equal opportunities to all other such candidates for that office in the use of such broadcasting station.

In alternative 1, C is an unconditional result. Under this interpretation the broadcaster is not compelled to permit any candidate to use his station, but as soon as he allows the first he is compelled to give equal opportunities to other candidates. Whether or not he allows candidates to use the station, if he broadcasts material which falls under certain provisions of the Act, he may not exercise censorship powers.

In the second alternative, the censorship provision C is a conditional result, and is invoked only after the station owner has permitted at least one qualified candidate to use the facilities. At any time prior to allowing a candidate to broadcast, the licensee is not prohibited by the provisions of this Act from censoring any broadcast.

The third alternative interpretation construes C as a condition precedent to requiring the broadcaster to afford equal opportunity to other candidates. If the licensee allows at least one qualified candidate to broadcast, and if he has no power of censorship, only then is he required to grant other candidates the use of the station. The use of the word "shall" in the phrase "such licensee shall have no power of censorship" does not preclude interpreting clause C as a condition since "shall" is also used in clause A, which is clearly a condition.

Although the three alternative interpretations are not equally persuasive, a case sufficiently strong to give rise to litigation can be made for each. It should not be necessary to require a court decision to inform broadcasters

whether the censorship prohibition is a condition, a conditional consequence, or an unconditional consequence.¹⁵

B. Sources of Syntactic Ambiguity

There are numerous sources of syntactic ambiguity in legislation, not all of which appear unintentionally. The nature of the political process is such that it demands continual policy compromises. Rather than expressing such policy syntheses in strictly semantically vague or ambiguous forms and allowing the courts to transform general legislative directives into specific case-by-case adjudications, legislators occasionally fall prey to a false sense of economy which results in syntactic ambiguity—each side hoping that it will later be able to stretch the language in order to attain a desired political objective.¹⁶ In such cases, the courts are saddled with the extra burden of making policy decisions which should properly be left to accountable elected representatives.¹⁷

Syntactic ambiguity also arises from limitations of the prose form in which statutes are typically written. Prose is essentially a linear thought stream whereas statutes often express multiple relationships. While the use of prose in statutory drafting need not be denigrated, the use of some tools of mathematics and symbolic logic can add clarity to statutes by facilitating the clear expression of multiple relationships.¹⁸

¹⁵ In *Finsilver, Still & Moss, Inc. v. Goldberg, Maas & Co., Inc.*, 253 N.Y. 382, 392, 171 N.E. 479, 482 (1930), Justice Cardozo aptly lamented: "The task of judicial construction would be easier if statutes were invariably drafted with unity of plan and precision of expression." He might also have added that the task would not only be easier but in many cases completely unnecessary.

For a discussion of other syntactic ambiguities, see Ely, *The Limits of Logic: Syntactic Ambiguity in Article One of the U.S. Constitution*, 63 MODERN USES OF LOGIC IN LAW 117 (Sept. 1963); Miller, *Two Examples of Syntactic Ambiguities in International Agreements*, 62 MODERN USES OF LOGIC IN LAW 72 (June 1962); Stern, *Syntactic Ambiguity in Section 5(a) of the Clayton Act*, 60 MODERN USES OF LOGIC IN LAW 129 (Dec. 1960). *Modern Uses of Logic in Law* is the former name of the American Bar Association Special Committee on Electronic Data Retrieval newsletter. In 1966 it became the *Jurimetrics Journal*.

¹⁶ Perhaps it is unfair to impute such motives to all legislators. Edward Craft, a former counsel to the United States House of Representatives and a principal draftsman of the 1954 Internal Revenue Code, has stated to the author that ambiguity is sometimes recognized but left unresolved by draftsmen because they lack the requisite authority to make policy decisions and are unable to obtain the needed decisions before drafts are actually adopted into law.

¹⁷ At least one commentator finds it to be a reasonable conclusion that the introduction of ambiguity into statutes is a deliberate delegation of authority from the legislature to the judiciary. Miller, *supra* note 7, at 30.

¹⁸ Professor Allen states that the usefulness of modern symbolic logic is shown in the following ways: It brings to light the precise issues faced in questions of law, it permits these issues to be formulated in relatively precise and unambiguous terms, and it marks the limits within which a situation is open for judicial choice and discretion. Allen & Orechkoff, *Toward a More Systematic Drafting and Interpreting of the Internal Revenue Code: Expenses, Losses, and Bad Debts*, 25 U. CHI. L. REV. 1, 62 (1957). His last point is especially pertinent. Ill-formulated statutes can give rise to policy questions disguised as technical construction questions and to equally muddled answers by courts seeking to avoid the appearance of judicial legislation by converting the issue to "simple" construction of a statute.

For a very spirited debate on the general utility of symbolic logic applications in

Tradition has been responsible for many drafting forms which render statutes syntactically ambiguous. For example, although provisos are disfavored by modern draftsmen as unduly complex, their use persists in spite of the obvious difficulty in defining the scope of the proviso.¹⁹ The tendency to borrow heavily from existing statutes in other jurisdictions exacerbates the problem.

Oversight has also contributed significantly to the problem of syntactic ambiguity. Most lawyers receive little or no formal training in symbolic logic techniques.²⁰ The intuitive skills possessed by most lawyers are adequate most of the time, but there is a serious need for a more systematic approach. In the late 1930's the Prudential Life Insurance Company was using two sets of rules devised to take care of all possible cases of premium schedule rearrangements by policyholders. A mathematician analyzed the supposedly equivalent rules and demonstrated that in four possible situations the revised rules yielded different results.²¹ This is not to say that the insurance company lawyers, given enough time, could not have done the same. Rather, it is to emphasize that there are techniques more efficient than trial and error for analyzing and expressing relationships between various sets of conditions and their associated consequences.

C. Costs of Syntactic Ambiguity

It is virtually impossible to quantify the total real costs to society resulting from syntactically ambiguous statutes. There are, however, several fairly obvious identifiable costs. To the extent that courts are forced to repeat the work of the legislature in deciding what a statute would have said had it been clearly expressed, syntactic ambiguity represents a burden to society. This burden manifests itself in the rising expense of legal services. Good advocacy requires substantial research, and research time is frequently consumed in studying ambiguous statutes and reviewing cases which clarify the

law (and one in which the last shots have probably not yet been fired), see Summers, *A Note on Symbolic Logic and the Law*, 13 J. LEGAL ED. 486 (1961); Allen, *Symbolic Logic and the Law: A Reply*, 15 J. LEGAL ED. 47 (1962); Tammelo, *Syntactic Ambiguity, Conceptual Vagueness, and the Lawyer's Hard Thinking*, 15 J. LEGAL ED. 56 (1962); Summers, *Symbolic Logic and Law: A Reply to Professors Allen and Tammelo*, 15 J. LEGAL ED. 60 (1962).

¹⁹ In *Georgia Railroad & Banking Co. v. Smith*, 128 U.S. 174, 181 (1888) the Court stated:

The difficulty . . . arises from the doubt attached to the meaning of the term "provided." The general purpose of a proviso, as is well known, is to except the clause covered by it from the general provisions of a statute, or from some provisions of it, or to qualify the operation of the statute in some particular. But it is often used in other senses. It is a common practice . . . to precede . . . proposed amendments with the term "provided," so as to declare that, notwithstanding existing provisions, the one thus expressed is to prevail, thus having no greater significance than would be attached to the conjunction "but" or "and" in the same place, and simply serving to separate or distinguish the different paragraphs or sentences.

²⁰ See generally Scott, *A Plea for the Study of Logic*, 21 J. LEGAL ED. 206 (1968).

²¹ Pfeiffer, *Symbolic Logic*, SCIENTIFIC AM., Dec. 1950, at 22.

ambiguities.²² The mark of a well-drafted statute, contract, or will is that it seldom reaches a court since all parties are able to agree on its interpretation. Proper use of semantic vagueness allows unresolved questions to be treated as policy issues for which proper recourse is had in the legislature or through further negotiation.

The cost which is hardest to define, but which is perhaps the greatest, is the loss of public respect for the law. Underlying this disrespect is often resentment of legal jargon²³ and a deep and abiding suspicion that the law is deliberately placed beyond the reach of the public in order to promote the financial interests of members of the bar.²⁴ This article will describe a method of expression which does not produce syntactic ambiguity and which contributes to more readable, and, hopefully, more acceptable statutes.

II. STATUTORY NORMALIZATION

A. Historical Developments

There have been several attempts during the last quarter-century to develop methods for clarifying statutes through syntactic manipulations. One of the earliest was known as "systematic pulverization."²⁵ As the name implies, this method involves breaking complex sentences into simpler statements of legal conditions or consequences. If necessary, the statements are reworded. Then they are recombined into an outline form using only six logical connectives: conjunction ($A \& B$), inclusive disjunction ($A \&OR B$), exclusive disjunction ($A OR B$), negation ($NOT A$), implication (A/B), and coimplication ($A//B$). The final product is a syntactically unambiguous, part-English, part-symbolic statement of the statute.²⁶

Systematic pulverization has been criticized by the proponents of the

²² The statistics describing the exponentially increasing numbers of statutes, regulations, and cases the modern lawyer has to deal with have been repeated enough times to have lost their shock value. Cohen, *Research Habits of Lawyers*, 9 JURIMETRICS J. 183 (June 1969) gives an enlightening empirical look at the consequences.

²³ See *Whereas . . . Legalese Is Vanishing from Some Contracts*, The Nat'l Observer, June 21, 1975, at 8, col. 5.

²⁴ See Waltz, *Some Thoughts on the Legal Profession's Public Image*, 23 DEPAUL L. REV. 651 (1974).

²⁵ Allen, *Symbolic Logic: A Razor-Edged Tool for Drafting and Interpreting Legal Documents*, 66 YALE L.J. 833 (1957); Allen & Orechhoff, *Toward a More Systematic Drafting and Interpreting of the Internal Revenue Code: Expenses, Losses, and Bad Debts*, 25 U. CHI. L. REV. 1 (1957).

²⁶ For example, the original text of INT. REV. CODE of 1954 § 74 reads:

Prizes and Awards—

- (a) General Rule.—Except as provided in subsection (b) and in section 117 (relating to scholarships and fellowship grants), gross income includes amounts received as prizes and awards.
- (b) Exception.—Gross income does not include amounts received as prizes and awards made primarily in recognition of religious, charitable, scientific, educational, artistic, literary, or civic achievement, but only if—
 - (1) the recipient was selected without any action on his part to enter the contest or proceeding; and
 - (2) the recipient is not required to render substantial future services as a condition to receiving the prize or award.

more recent computer drafting method²⁷ as producing statutes which are unduly confusing to the reader and lacking in fixed rules by which one can reliably deduce the final form.²⁸ In the computer drafting method, a statute is subjectively decomposed into propositions which are either input variables (conditions) or output functions (consequences). The analyst then prepares a flowchart which, in effect, schematically illustrates a decision tree.²⁹ Each node representing an input variable has two emanating paths—

After systematic pulverization, it reads:

1. Amounts are received as prizes &OR awards

2. 1. 1) that amount qualifies for exclusion in section 117 (relating to scholarship and fellowship grants)
- 2) &OR 1. such prizes &OR awards are made primarily in recognition of
 - 1) religious
 - 2) &OR charitable
 - 3) &OR scientific
 - 4) &OR educational
 - 5) &OR artistic
 - 6) &OR literary
 - 7) &OR civic achievement
- &2. there was NOT any action on the part of the selected recipient to enter the contest &OR proceeding
- &3. the recipient is NOT required to render substantial future services as a condition to receiving the prize &OR award

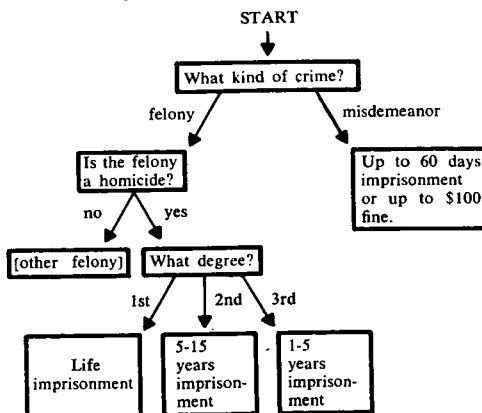
2. SUCH AMOUNTS ARE NOT INCLUDED IN GROSS INCOME.

Allen, *Symbolic Logic: A Razor-Edged Tool for Drafting and Interpreting Legal Documents*, 66 YALE L.J. 833, 875 (1957).

²⁷ Comment, *A Computer Method for Legal Drafting Using Propositional Logic*, 53 TEXAS L. REV. 965 (1975).

²⁸ *Id.* at 979-80.

²⁹ A decision tree is merely a generic name for any graph which has a single starting point, a series of "nodes" which represent choices, and lines emanating from the nodes which lead to further nodes or to terminal points (final outcomes). A simple decision tree illustrating sentencing choices is shown below:



one representing fulfillment of the stated condition and the other denoting unfulfillment. Some paths may terminate at nodes which are output functions; others may lead to further input variable nodes. From this flowchart, the analyst ultimately constructs a truth table which represents all possible combinations of fulfillment or unfulfillment of the various conditions. On the basis of this truth table, a computer calculates a logical equation which is the most compact product-of-sums or sum-of-products form³⁰ using only the five syntax words "if," "then," "and," "or," and "not."³¹ When the text of each input variable and output function is substituted for the corresponding symbol, this equation forms the statute.³²

The computer drafting method is not entirely adequate for simplifying complex statutory provisions in light of some "illogical" constraints posed by our legal system. A simple hypothetical statute illustrates the point:

If a person is injured as a direct result of an explosion occurring on the premises of a manufacturer of dynamite, gunpowder, or other such material, whether or not such injured person was contributorily negligent, then the manufacturer shall be liable.

Regardless of whether the phrase "whether or not such injured person is contributorily negligent" is treated as a single basic proposition³³ or as

³⁰ The "product-of-sums" form is equivalent to a "conjunction-of-disjunctions," *i.e.*, groups of ORs connected by ANDs. Similarly, the "sum-of-products" is equivalent to a "disjunction-of-conjunctions," *i.e.*, groups of ANDs connected by ORs.

³¹ Although similar, these are not exactly the same five syntax forms used in the normalization method described in part II B, *infra*.

³² The following is the statute quoted in note 26 *supra* after application of the computer drafting method:

- IF—(1) The taxpayer receives prizes or awards, AND
- (2) Section 117 (relating to scholarship and fellowship awards) does NOT exclude such amounts as gross income, AND
- (3) One of the following—
- (a) The prizes or awards are NOT made primarily in recognition of religious, charitable, scientific, educational, artistic, literary, or civic achievement, OR
- (b) The recipient was NOT selected without any action on his part to enter the contest or proceeding, OR
- (c) The recipient is required to render substantial future services as a condition to receiving the prize or award,

THEN—The taxpayer must include such amounts in gross income.

Comment, *supra* note 27, at 985-86.

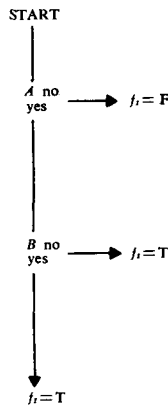
³³ In this case, the propositions are:

- A. A person is injured as a direct result of an explosion occurring on the premises of a manufacturer of dynamite, gunpowder, or other such material.
- B. Such injured person was or was not contributorily negligent.
- f. The manufacturer shall be liable.

two alternative propositions,³⁴ one arrives by this method at the same simplified form:

IF— A person is injured as a direct result of an explosion occurring on the premises of a manufacturer of dynamite, gunpowder, or other such material,
 THEN— The manufacturer shall be liable.

The resulting diagram and truth table then become:



A	B	fi
F	*F	F
F	T	F
T	*F	T
T	T	T

*These terms are included although B will never actually be false.

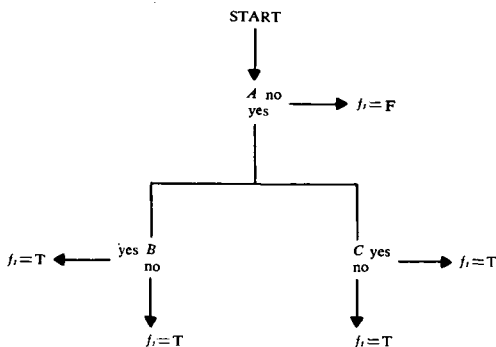
After undergoing simplification, the resulting expression is:

IF— A person is injured as a direct result of an explosion occurring on the premises of a manufacturer of dynamite, gunpowder, or other such material,
 THEN—The manufacturer shall be liable.

³⁴ The propositions are:

- A. A person is injured as a direct result of an explosion occurring on the premises of a manufacturer of dynamite, gunpowder, or other such material.
- B. Such injured person was contributorily negligent.
- C. Such injured person was not contributorily negligent.
- fi. The manufacturer shall be liable.

The resulting diagram and truth table then become:



A	B	C	fi
F	F	F	F
F	F	T	F
F	T	F	F
F	T	T	F
T	F	F	T
T	F	T	T
T	T	F	T
T	T	T	T

After simplification, the expression reduces to the same form as shown in note 33 *supra*.

This happens because, according to the logical rules employed in the computer drafting method, when a result occurs whether or not a condition mentioned in the statute is fulfilled, the mention of the condition may be omitted without substantively altering the statute. However, in a legal sense, the words “whether or not such injured person is contributorily negligent” serve a purpose. They are a legislative mandate forbidding a court to imply unexpressed conditions.³⁵ If this prohibition were not included, a court might invoke common law contributory negligence doctrine, thereby thwarting the strict liability imposed by the statute.

There is an additional potential pitfall in the computer drafting method that arises when certain legal norms or statements are formalized by means of two-valued (*i.e.*, true-false) logic. Consider the following sentence:

If there are six men and six women on the jury, then there are at least twelve people on the jury.

Incorporating all of the restrictions imposed by the computer drafting method, namely, that propositions chosen as input variables are independent and represent relevant conditions of the world, and propositions chosen as output functions are dependent and describe relevant consequences of the input variables, the sentence can be said to have the following logical form:

If (*A* and *B*), then *C*.

The component propositions are:

- A. There are six men on the jury.
- B. There are six women on the jury.
- C. There are at least twelve people on the jury.

Under the rules used to simplify a logical expression in the computer drafting method, this is equivalent³⁶ in two-valued logic to the expression:

(If *A*, then *C*) or (if *B*, then *C*).

³⁵ All statutes have at least some unexpressed conditions, such as “If the person is not an infant . . .,” “Provided this statute is not unconstitutional . . .” or “Except in the case of incompetent persons. . .”

³⁶ Using standard two-valued truth table notation, the two expressions are equivalent for all possible truth values of *A*, *B* and *C* as is shown by the identity of the columns at the far right.

A	B	C	(<i>A</i> and <i>B</i>)	If (<i>A</i> and <i>B</i>) then <i>C</i>
F	F	F	F	T
F	F	T	F	T
F	T	F	F	T
F	T	T	F	T
T	F	F	F	T
T	F	T	F	T
T	T	F	T	F
T	T	T	T	T

This expression asserts that either the first implication (If *A*, then *C*), or the second implication (If *B*, then *C*), or both are true. Rewritten in English, the original statement now reads:

If there are six men on the jury, then there are at least twelve people on the jury, or if there are six women on the jury, then there are at least twelve people on the jury.

It is clear, however, that a logical system which deduces the truth of this latter statement from that of the former permits unsatisfactory results. Using the rules implicit in the computer drafting scheme, a statement that is clearly always true has been transformed into a statement that is not always true. This example illustrates how computer drafting, used uncritically, can actually affect meanings and produce erroneous "simplifications."³⁷

It is not sufficient to assert that the simplification process in actual practice will avoid invalid results and produce only valid ones. If the reader of a statute simplified by such a method cannot be sure he is reading what the legislature asserted, and if it is necessary to check each example against the original text for changed meanings, then the purpose of having the system is largely undermined.³⁸

<i>A</i>	<i>B</i>	<i>C</i>	If <i>A</i> then <i>C</i>	If <i>B</i> then <i>C</i>	(If <i>A</i> then <i>C</i>) or (If <i>B</i> then <i>C</i>)
F	F	F	T	T	T
F	F	T	T	T	T
F	T	F	T	F	T
F	T	T	T	T	T
T	F	F	F	T	T
T	F	T	T	T	T
T	T	F	F	F	F
T	T	T	T	T	T

³⁷ Another problem occurs because the computer drafting method lacks the "if and only if" syntax construction. A statute of the form:

A, if and only if *B*

would have to be simplified to:

(If *B*, then *A*) and (if *A*, then *B*).

This requires that certain text be written twice in the final statute form. A statute can rapidly become unwieldy if either clause *A* or clause *B* are themselves composed of numerous conditions or consequences.

³⁸ The normalization method described in the text produces a statute that appears similar in some respects to a statute simplified by the computer drafting method. It differs in at least two major respects, however. For the reasons just discussed, the normalization method does not discard any condition. Even though the condition may not affect the logical outcome of the statute, it may have another legal purpose. A normalized statute also includes an optional margin diagram in the final statute form which schematically illustrates the syntax of the statute. Unlike the computer drafting method flowchart, this diagram is ultimately for the convenience and the benefit of the reader of the statute, not for the analyst who simplifies the statute.

The primary goal of normalization is the orderly arrangement of the conditions

B. *The Normalization Method*³⁹

At the outset it is important to understand what statutory normalization is not. It is not a method which will make our legal system obsolete. It is not simply a way of turning lawyers into mathematicians. Nor is it a panacea for all drafting and interpretation problems. Rather, statutory normalization is a process by which formerly implicit cues in a statute are made explicit, thereby permitting the reader to focus upon the fundamental legal issues and policies underlying a statute rather than to flounder in the mechanics of comprehension. This is accomplished by transforming a complex legal norm embodying a number of conditions, which if fulfilled would result in certain consequences, into a set of simple norms. Each simple norm is a complete sentence and represents a statement of a particular condition or consequence, or in some cases a set of minor conditions or consequences. Simple norms are related to other simple norms only by the following syntax forms:

“and”
 “or”
 “if . . . then”⁴⁰
 “if and only if . . . then”
 “not” or “it is not so that”

These syntax words replace all other connectives typically found in legal drafting. The words “whenever,” “unless,” “in case . . . then,” “upon,” “when,” “where,” “where . . . then,” “only if,” “except when,” “provided that,” and “provided further that” are replaced by “if . . . then,” “if and only if . . . then,” or by combinations of these two forms in conjunction

and consequences of a statute to achieve maximum clarity and usefulness *to the reader*. Although the two methods are different, they may be complementary. A legislative proposal could be subjected to computer drafting in order to yield the most compact representation of the explicit conditions and consequences, and to alert the draftsman to the existence of extraneous conditions. Once simplified, normalization could then be applied to the statute to produce a form that is most easily usable by legislators, lawyers, and the public.

Another method, which is essentially the reverse of those already discussed, is suggested in Cobb, *The Use of Functions of Legislative Terms in Legal Writing*, 64 MODERN USES OF LOGIC IN LAW 1 (March 1964). In essence, this system takes a logical expression of a statute and generates from that expression a multitude of logical functions which correspond to true statements of the law when certain conditions are fulfilled or unfulfilled.

³⁹ This method for systematically restating statutory language in a syntactically “clean” or normalized form was developed by Layman E. Allen. Allen & Ohta, *Better Organization of Legal Knowledge*, 3 TOLEDO L. REV. 491 (1969).

⁴⁰ Even the word “then” can be semantically ambiguous. For example, in the sentence “The trustee shall then deposit such funds,” the trustee may be obligated as a consequence of some prior events to deposit the funds, but at no particular time. Alternatively, the trustee may be required to deposit funds at a particular time specified by the antecedent to which “then” refers. In the normalization scheme, “then” is being employed in the former sense.

with "it is not so that."⁴¹ The word "but" and in some cases the phrase "provided further that" are generally replaced by the word "and." The connectives "and" and "or" are supplied in cases where their use is implied but not made explicit. For example, Article 2 of the Uniform Commercial Code contains the following provision:

Between merchants such terms become part of the contract unless:

- (a) the offer expressly limits acceptance to the terms of the offer;
- (b) they materially alter it; or
- (c) notification of objection to them has already been given. . . .⁴²

Normalization makes the implicit disjunction in this provision explicit:

Between merchants such terms become part of the contract unless:

- (a) the offer expressly limits acceptance to the terms of the offer; *or*
- (b) they materially alter it; or
- (c) notification of objection to them has already been given. . . .

Although it is not logically necessary to limit the language of normalization to five syntax terms, there is a sound practical basis for this restriction. By eliminating terms that can cause syntactic confusion, courts are more likely to develop a stable consensus concerning the meanings of the syntax words⁴³ and thus avoid unnecessary litigation solely over syntax.⁴⁴

The first step in the normalization process is the identification, isolation, and labeling of all syntactic components, including syntax words, condi-

⁴¹ Words such as "when," "upon," and "whenever" are also used in many statutes in dual senses to denote conditions which will lead to certain results or to denote time relationships. Nothing in the normalization method precludes their use for the latter purpose. They would, however, be replaced with "if . . . then" or "if and only if . . . then" constructions if used to denote conditions.

⁴² UNIFORM COMMERCIAL CODE § 2-207(2).

⁴³ See Goble, *Terms for Restating the Law*, 10 A.B.A.J. 58 (1924) where it is stated that:

Theoretically it would seem that absolute accuracy in definition could never be obtained, but practically it seems possible that diversity of interpretation may be greatly minimized with respect to the meaning of a few fundamental terms which must be used in any re-statement of the law.

Id. at 58.

⁴⁴ The digest published by West Publishing Company entitled *Words and Phrases* (perm. ed.) contains references to hundreds of cases which revolve around the proper use of such syntax words as "and," "or," "if," "provided" and "then."

tions, and consequences. These latter two elements often occur in the text of a statute as complete sentences, but may also occur as clauses. The application of these techniques to section 315(a) of the Federal Communications Act⁴⁵ produces the following result:

- A* If any licensee shall permit any person who is a legally qualified candidate for any public office to use a broadcasting station,
- he shall af-
- B* ford equal opportunities to all other such candidates for that office in the use of such broadcasting station:
- Provided*, That such licensee
- C* shall have no power of censorship over the material broadcast under the provisions of this section.
- No obligation is imposed under this
- D* subsection upon any licensee to allow the use of its station by any such candidate.
- Appearance by a legally qualified candidate on any—
- (1) bona fide newscast,
- (2) bona fide news interview,
- (3) bona fide news documentary (if the appearance of the candidate is incidental to the presentation of the subject or subjects covered by the news documentary), *or*
- E* (4) on-the-spot coverage of bona fide news events (including but not limited to political conventions and activities incidental thereto), shall not be deemed to be use of a broadcasting station within the meaning of this subsection.
- F* Nothing in the foregoing sentence shall be construed as relieving broadcasters,
- G* in connection with the presentation of newscasts, news interviews, news documentaries, and on-the-spot coverage of news events,
- F* (*cont.*) from the obligation imposed upon them under this chapter to operate in the public interest
- and to af-*
- H* ford reasonable opportunity for the discussion of conflicting views on issues of public importance.

FIGURE 2 (Italics supplied to denote syntax words.)

Notice the difficulty of isolating constituent parts of clause *E*. Subparts (1), (2), (3), and (4) are each separable preconditions, fulfillment of any one of which will allow the operation of the last clause of sentence *E*; yet they are not divisible in such a way as to retain the original text wording

⁴⁵ 47 U.S.C. § 315 (1970). See note 13 and accompanying text *supra*.

while becoming sentences. In such a case, small changes in wording may be necessary in order to construct sentences. However, where such changes are likely to introduce subtle shifts in meaning, it is better to treat the entire clause, sentence, or aggregate of sentences as a single constituent sentence in the normalized version. In order to facilitate the next step in normalization, sentence *E* could be modified to read:

If a candidate is legally qualified and

- (1) the candidate appears on any bona fide newscast, or
- (2) the candidate appears on any bona fide news interview, or
- (3) the candidate appears on any bona fide news documentary (if the appearance of the candidate is incidental to the presentation of the subject or subjects covered by the news documentary), or
- (4) the candidate appears in on-the-spot coverage of bona fide news events (including but not limited to political conventions and activities incidental thereto),

After identifying the syntax words, conditions, and consequences, it is necessary to construct constituent sentences for each of the conditions and consequences extracted from the original text. Converting syntactic cues within sentences into syntactic cues between sentences enhances both the clarity and readability of the restructured statute. Expressing each legal norm in a separate and distinct sentence or group of sentences avoids forcing the reader to mentally reconstruct a statement of a norm from its scattered parts. Sentence *F* in Figure 2 is an example of this type of difficulty. The use of constituent sentences is also important in the construction of a legal information retrieval system based on statutory norms rather than descriptive words, citations, or digest entries.⁴⁶

Several insignificant conditions or consequences may be treated within a single constituent sentence if the aggregation would contribute to a more readable statute. Clause *G* could be further broken apart, but this would serve no useful purpose. In accordance with the cardinal principle of minimizing wording changes, the set of sentences resulting from one possible transformation of the above-isolated components into constituent sentences can be written:

- A. Any licensee shall permit any person who is a legally qualified candidate for any public office to use a broadcasting station.
- B. He shall afford equal opportunities to all other such candidates for that office in the use of such broadcasting station.

⁴⁶ See part III *C* *infra*.

- C. Such licensee shall have no power of censorship over the material broadcast under the provisions of this section.
- D. No obligation is imposed under this subsection upon any licensee to allow the use of its station by any such candidate.
- E1. A candidate is legally qualified.
- E2. The candidate appears on any bona fide newscast.
- E3. The candidate appears on any bona fide news interview.
- E4. The candidate appears on any bona fide news documentary.
- E5. The appearance of the candidate is incidental to the presentation of the subject or subjects covered by the news documentary.
- E6. The candidate appears in on-the-spot coverage of bona fide news events (including but not limited to political conventions and activities incidental thereto).
- E7. It shall be deemed to be use of a broadcasting station within the meaning of the subsection.
- F. Nothing in the foregoing sentence (E) shall be construed as relieving broadcasters from the obligation imposed upon them under this chapter to operate in the public interest.
- G. The broadcasting is in connection with the presentation of newscasts, news interviews, news documentaries, and on-the-spot coverage of news events.
- H. Nothing in the foregoing sentence (E) shall be construed as relieving broadcasters from the obligation imposed upon them under this chapter to afford reasonable opportunity for the discussion of conflicting views on issues of public importance.

FIGURE 3

The third and final step in constructing a normalized statute is to add the syntactic relationships to the constituent sentences derived above. Where the intended syntax is unclear, one may choose to mark a whole portion of the statute as having alternative normalizations and later show the various syntactic interpretations that can be derived from the given language. The first alternative interpretation of section 315(a) derived earlier⁴⁷ is shown in Figure 4.

⁴⁷ See note 13 and accompanying text *supra*.

Alternative Interpretation 1:

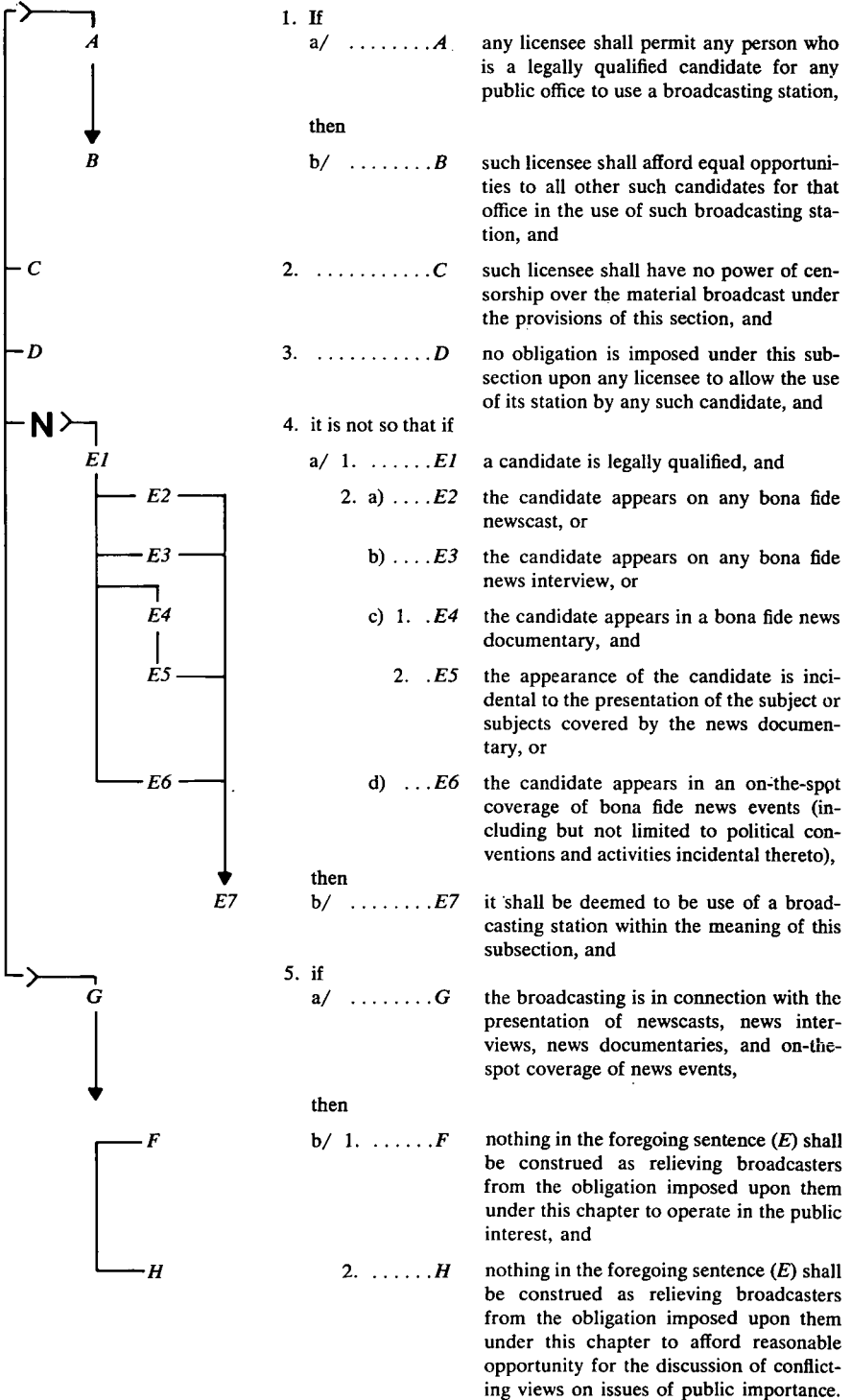


FIGURE 4

Notice that syntactic cues are redundantly expressed in two different ways in Figure 4. The margin diagram⁴⁸ and the text outline each convey the same

⁴⁸ The text is not indented at various levels as shown in Allen, *supra* note 39, at 492. The author believes that clear separation of the text from the outline enhances readability.

Each diagram and outline symbol corresponds to a syntax word in the normalized version as follows:

SYNTAX WORD	DIAGRAM	OUTLINE
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<p>“And”</p> <p style="padding-left: 40px;">antecedent:</p>		<p>OR — A — B —</p> <p>“.”</p>
<p style="padding-left: 40px;">consequent:</p>		<p>“.”</p>
<p>“Or”</p>		<p>“)”</p>
<p>“Not,” “it is not so that”</p>	<p>N</p>	<p>no outline symbol</p>
<p>“If . . . then”</p>		<p>“/”</p>
<p>“If and only if . . . then”</p>		<p>“//”</p>

In order to use the diagram in the normalized statute above, note that there are five basic conjoined statements. In the case of sentences *C* and *D*, these statements express unconditional results. The remaining three statements each consist of further conditions which must be fulfilled for certain other consequences to follow. In its simplest form, the statute says:

- If *A*, then *B*
- and
- C*
- and
- D*
- and

syntactic information in order to contribute to readability, clarity, and to avoid syntactic confusion. The reader can quickly isolate the relevant conditions and consequences that merit legal scrutiny. One of the primary values of such an expression of the statute is that the reader spends far less time on the mechanics of simply finding the appropriate place to apply close legal analysis⁴⁹ and, consequently can devote more time and effort to the important task of deciding whether or not the statute is relevant at all, and if so, whether the given facts of the problem fulfill the conditions expressed by the language of the relevant parts of the statute.

III. APPLICATIONS OF NORMALIZATION

A. Interpretation

Some statutes, while not written in inherently ambiguous terms, are nevertheless unclear. A portion of the recently repealed Michigan statute setting forth the basic liability of a garnishee and the wage exemptions applicable to a garnishment in justice court⁵⁰ appropriately illustrates this premise. Although the statute can be deciphered with some diligence, its application is not easily ascertainable even after several readings. The normalized form in Figure 5 quickly makes clear the thrust of the statute.

One can quickly see from the normalized form that the first level of classification depends on whether or not the garnishment summons issued is the first in the case; the second depends on whether the defendant is a householder having a family and the garnishment covers wages for personal service; and the third (in the case of a householder with a family) depends on the period for which the wages are being paid. The result of applying these straightforward tests is the ascertainment of specific exemption figures.

It is not so that
if *E1* and (*E2* or *E3* or (*E4* and *E5*) or *E6*), then *E7*
and

If *G*, then (*F* and *H*).

⁴⁹ See note 55 *infra*.

⁵⁰ The statute formerly read:

When this is the first garnishment summons issued in the case and the defendant is a householder having a family, nothing herein contained shall be applicable to any indebtedness of such garnishee to the defendant for the personal labor of such defendant, or his family, to the amount of 60% of such indebtedness, but in no case when such labor extends over a period of 1 week or less shall more than \$50.00 of such indebtedness be exempt from the operation of this chapter, and in all cases at least \$30.00 shall be so exempt. In no case where such labor extends over a period greater than 1 week shall more than \$90.00 of such indebtedness be exempt from the operation of this chapter, and in all such cases at least \$60.00 shall be so exempt. In case the defendant is not a householder having a family, nothing hereinbefore contained shall be applicable to any indebtedness of such garnishee to the defendant for the personal labor of such defendant to the amount of 40% of such indebtedness, but in no case shall more than \$50.00 of such indebtedness be exempt from the operation of this chapter, and in all such cases at least \$20.00 shall be so exempt.

P.A. 1961, No. 236, § 7511, effective Jan. 1, 1961; repealed by P.A. 1974, No. 297, § 2, effective April 1, 1975, MICH. COMP. LAWS ANN. § 600.7511 (Supp. 1975).

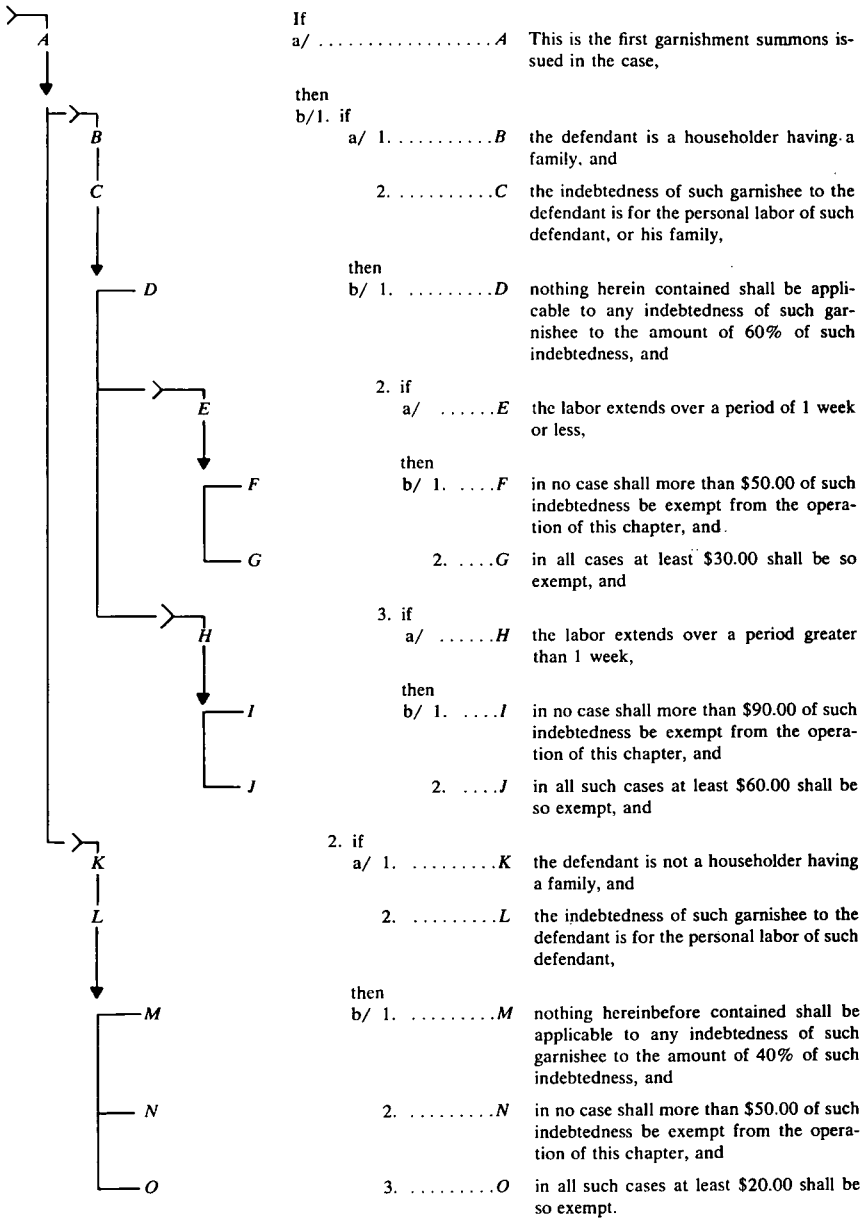


FIGURE 5

Convoluting prose in the original text of the statute obscures the classifications by making some conditions applicable to all exemption amounts (e.g., “this is the first garnishment summons issued in the case”), and others peculiar to specific exemption amounts (e.g., “such labor extends over a period of 1 week or less”) without apparent differentiation.

Adoption of normalizing techniques can reduce the occurrence of such

elliptical drafting and pathological brevity as one finds in the last sentence of the Internal Revenue Code provision defining “private foundation:”⁵¹

(a) General Rule—For purposes of this title, the term “private foundation” means a domestic or foreign organization described in section 501(c)(3) other than—

- (1)
- (2)
- (3)
- (4)

For purposes of paragraph (3), an organization described in paragraph (2) shall be deemed to include an organization described in section 501(c)(4), (5), or (6) which would be described in paragraph (2) if it were an organization described in section 501(c)(3).

The normalized form of the last sentence maintains the same level of detail that is used in the present statute, but incorporates the sentence into paragraph (3), to which it solely applies.⁵²

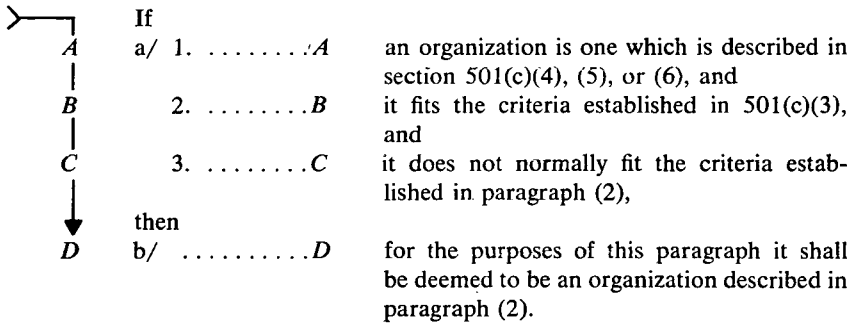


FIGURE 6

Normalization of the entire Internal Revenue Code would reduce the need for the number of cross-references necessary in the “general rule . . . limitations . . . exceptions . . . modifications” drafting technique presently employed. By adapting a statute to correspond more closely to the legal practitioner’s usual mode of thinking, normalization contributes to clarity, minimizes inadvertent syntactic and semantic ambiguity, and properly focuses attention on policy considerations involved in making choices available due to a statute’s semantic vagueness.

B. Drafting

Although normalization can be applied equally well to new legislative proposals and to existing statutes, its ultimate value cannot be realized by

⁵¹ INT. REV. CODE of 1954, § 509(a).

⁵² The language is so obscure that this author is hesitant to assert that this is *the* correct normalization. Whatever Congress meant, it could have been better expressed in normalized form.

merely rewriting the latter and noting where ambiguities exist. High legal service costs, litigation costs, and the indirect costs of public nonacceptance can be reduced far more by employing normalization in the drafting process itself. Normalization provides a formal tool to accomplish what draftsmen have always attempted: the discovery and elimination of needless ambiguity in the communication of legal policies.⁵³ Normalization compels the draftsmen to select the intended syntactic interpretation during the drafting process.

This technique will not stifle imaginative approaches to statutory drafting since genuine statutory flexibility can be incorporated through use of semantically vague "accordion" words which allow judicial discretion rather than ambiguities in the syntax or the semantics. Indeed, the replacement of all syntactic connectives with the standardized forms "and," "or," "if . . . then," "if and only if . . . then," and "it is not so that" should tend to increase certainty in the law as standardized interpretations of their meanings emerge and achieve consensus.⁵⁴

In the same manner that legislative assistants often prepare "plain language" versions of complex bills for busy legislators, legal looseleaf service publishers could prepare and distribute normalized versions of existing statutes to practicing lawyers. Such a service, especially in the case of complex or recently enacted statutes, would benefit attorneys dealing with unfamiliar areas of the law. Experimental results⁵⁵ also indicate that normalized statutes can be read and understood faster than non-normalized statutes.

C. Information Retrieval

A body of normalized statutes lends itself readily to automated information retrieval applications. Each portion of a statute can be indexed to its possible alternative normalizations and to lists of cases which have sup-

⁵³ An early proponent of the systematic elimination of semantic ambiguity made an observation which is pertinent to problems of syntactic ambiguity:

[I]n any closely reasoned problem, whether legal or non-legal, chameleon-hued words are a peril both to clear thought and to lucid expression. . . . the above mentioned inadequacy and ambiguity of terms unfortunately reflect, all too often, corresponding paucity and confusion as regards actual legal conceptions.

Hohfeld, *Some Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 23 YALE L.J. 16, 29 (1913).

⁵⁴ See note 43 *supra*.

⁵⁵ In a yet-unpublished series of experiments conducted by Professor Layman E. Allen over a period of nine years at the University of Michigan Law School, groups of second and third-year students were given tests designed to measure comprehension of various sections of the Internal Revenue Code. Correct answers depended on the ability to quickly find and apply relevant portions of the statutes rather than the ability to analogize or to apply legal reasoning to semantic issues. Over the nine-year span, students using normalized versions of the statutes required on the average 20 percent less time for a given interpretive task and achieved on the average 30 percent greater accuracy than control groups using the original text of the statutes.

ported each interpretation.⁵⁶ Such a retrieval hierarchy is not limited to syntactic constructions of statutes. Cases which construe the words or the policy of the statutory section, or which imply extraneous conditions, can be related to or filed under the particular norm affected. Later judicial exceptions, limitations, and modifications of cases which have construed norms can be shown as subnormalizations of a given norm or group of norms. Unlike current systems in which the researcher is forced to follow a trail of citations, gathering irrelevant as well as relevant details, this scheme allows the researcher to start at the appropriate normalized section and isolate the particular norms he is interested in pursuing in greater depth. He may proceed directly to those cases which have reached a desired interpretation as well as to those which yielded a contrary result.

D. Education

Normalization also holds promise as a new method of teaching statutory material. While students can hone their analytical skills of distinction and analogy with the case method, there is no corresponding framework in which they can improve skills in analyzing statutes. One step in this direction has been taken with the development of an interactive computer program by Professor Layman E. Allen in conjunction with the University of Michigan Law School Computer Facility. In this program, the student, given only the list of constituent sentences, must attempt to reconstruct the full normalized statute. The learner may ask a full range of syntactic questions of the computer (*e.g.*, "Is this sentence a result?" "Does the following result occur when this list of conditions is fulfilled?" "Is this the complete set of possible results?" "How closely does my hypothesis correspond to the actual statute?"). In trying to construct a hypothetical statute which exactly corresponds to the real one, the learner can see graphically the results of imposing stronger or weaker sets of conditions as a requirement of reaching a given result. The student also can see the consequences of arranging the conditions in various alternative ways. In so doing, the student must closely examine the policy, the words, the semantics, and the syntax of the statute he is constructing in order to successfully reconstruct the statute.

IV. CONCLUSION

While normalization is not a panacea for all drafting ills, it is a practical device for constructing more usable, readable, and unambiguous statutes. It requires no extensive relearning of the law or current research techniques. Rather, it is a system which strives to adapt statutory expression to the way in which people actually use statutes.

The transition to a statutory normalization system might begin with the introduction of normalized statutes for legal research use by commercial legal publishers. Such material would be especially helpful to lawyers con-

⁵⁶ Allen, *Sketch of a Proposed Semiautomatic, Hierarchical, Open-Ended Storage and Retrieval System for Statute-Oriented Legal Literature*, 2 PROCEEDINGS OF THE INT'L FEDERATION FOR DOCUMENTATION 189 (1965).

fronted with a large new body of statutory material and to lawyers dealing with an unfamiliar area of the law.

Tradition may prove a formidable obstacle to the adoption of any new drafting form. However, without the optional diagram which merely serves to clarify relationships between conditions and results, normalized statutes look much like most modern legislation. The normalization outline is certainly no more complex than the tax code outlines,⁵⁷ and the former serves a real informational purpose rather than merely separating major topics and numbering paragraphs for reference.

Tradition prevented lawyers from replacing quills with steel-tipped pens until around 1860.⁵⁸ Tradition kept rubber bands out of law offices until as late as 1870.⁵⁹ Tradition was even the source of lawyers' great reluctance to adopt telephones and typewriters.⁶⁰ Tradition should not be allowed to inhibit the introduction of drafting procedures with the potential to make the law more understandable, and ultimately more just.

—*Rudy Engholm*

⁵⁷ Section 170 of the 1954 Internal Revenue Code, 26 U.S.C. § 170 (1970), relating to charitable contributions and gifts, has 132 numbered and lettered subdivisions, some of which are four outline levels deep. Section 170 itself is part of Title 26, Subtitle A, Chapter 1, Subchapter B, Part 6.

⁵⁸ Dickerson, *Electronic Computers and the Practical Lawyer*, J. LEGAL ED. 485, 487 (1962).

⁵⁹ *Id.*

⁶⁰ *Id.*