A Philosophical Item Analysis of the Right-Wing Authoritarianism Scale.

Items of Altemeyer's 1986 version of the "Right-Wing Authoritarianism Scale" (RWA Scale) were analyzed as philosophical propositions in an effort to establish each item's suggestive connotation and denotation. The guiding principle of the analysis was the way in which the statements reflected authoritarianism's defining characteristics of conventionalism, aggression and submission, and by implication, what it may mean, in each case, to harbor authoritarian principles. The analysis was undertaken largely in response to concerns expressed by several subjects who had completed the RWA Scale, as to how anyone could agree in any way with prototypic items. Such concerns were often a two-part expression: bewilderment over what must be going on in the heads of authoritarians, and the follow-up hypothesis that they must not know to what they are assenting when agreeing to authoritarian propositions. This project is an effort to get at just what it is that authoritarianism connotes. As to whether authoritarian personalities are conscious of the philosophical implications of their beliefs is a matter for further research. Appendix 1 lists components of authoritarianism, and appendix 2 presents a definition. (Contains 13 references.)

(Author)
A Philosophical Item Analysis
of the Right-Wing Authoritarianism Scale

by
Marty Eigenberger
Dept. of Educational Psychology
University of Wyoming
Items of Altemeyer's 1986 version of the Right-Wing Authoritarianism Scale (RWA Scale) were analyzed as philosophical propositions in an effort to establish each item's suggestive connotation and denotation. The guiding principle of the analysis was the way in which the statements reflected authoritarianism's defining characteristics of conventionalism, aggression and submission, and by implication, what it may mean, in each case, to harbor authoritarian principles.

The analysis was undertaken largely in response to concerns expressed by several subjects who had completed the RWA Scale, as to how anyone could agree in anyway with prottrait items. Such concerns were often a two-part expression: bewilderment over what must be going on in the heads of authoritarians, and the follow-up hypothesis that they must not know to what they are assenting when agreeing to authoritarian propositions. This project is an effort to get at just what it is that authoritarianism connotes. As to whether authoritarian personalities are conscious of the philosophical implications of their beliefs, is a matter for further research.
A Philosophical Item Analysis of the Right-Wing Authoritarianism Scale

The Right-Wing Authoritarianism (RWA) Scale (Altemeyer, 1986) contains 30 items designed to give a quantitative measure of subject authoritarian levels. Score limits range from a low of 30 to a possible high of 270. Scores are obtained from 9-point Likert-type responses to statements on a disagree-agree continuum. All the statements are definitionally driven. That is to say, the statement items are worded so as to variously tap one or more of the defining characteristics of right-wing authoritarianism, namely: aggression, submission and conventionalism (see Appendix A).

The RWA Scale is balanced, half of the items being worded in the protrait direction, half in the contrait. Agreement to protrait items indicates a positive association with one, two or all of the defining characteristics of the central trait, authoritarianism. Disagreement with protrait statements indicates a negative attitude toward authoritarian components. The other items are contraits, in which agreement indicates a positive attitude toward independence, equality and autonomy, and disagreement indicates a pro-authoritarian, or negative attitude toward independence, autonomy and equalitarian values.
I will examine each of the items loosely as propositional statements from a philosophical-analytic perspective, according to their logical and ordinary language implications, and according to the defining characteristics (authoritarian components) they tap.

**Item 1.** "Our country will be great if we honor the ways of our forefathers, do what the authorities tell us to do, and get rid of the 'rotten apples' who are ruining everything."

-------- * -------

Taps: conventionalism, submission, and aggression. This is a three-part statement with a conventionalism referent: honoring the ways of forefathers; a submission referent: doing what authorities tell us; and an aggression referent: getting rid of "rotten apples". Agreement strength here could register anything from mild assent to tradition and legal obedience, to an aggressive purging of persons perceived as "ruining everything". Aggression referent uses an ambiguous "kill people" euphemism: "get rid of" (kill) "rotten apples" (people). It must be stressed however, that the euphemism is ambiguous. Some individuals may read "kill", others may not.
Item 2. "Our society needs free thinkers who will have the courage to defy traditional ways, even if this upsets many people."

----- * -----

Contrait. Agreement taps promethean autonomy. Disagreement taps conventionalism.

Item 3. "It is always better to trust the judgment of the proper authorities in government and religion, than to listen to the noisy rabble-rousers who are trying to create doubt in people's mind."

----- * -----

Taps: conventionalism, which is the primary construct (trust authority) and secondarily taps intolerance of ambiguity with the negative connotation attached to creating doubt.

Item 4. "People should pay less attention to the Bible and the other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral."

----- * -----

Contrait. Agreement registers belief in moral autonomy. Disagreement registers conventionalism, reliance on external authority.
Item 5. "What our country really needs, instead of more "civil rights", is a good stiff dose of law and order."

-------- * --------

Taps: punitive aggression primarily, and hostility toward equalitarian values secondarily. Civil rights are devalued first by giving the concept a dubious quality by the use of quotation marks, and secondly by polarizing civil rights against law and order in a forced-choice dichotomy. On this account, agreement may also be indicative of racism and a maligning of Constitutionally defined rights, especially privacy and protection from police searches and arrests.

Item 6. "Our country will be destroyed someday if we do not smash the perversions eating away at our moral fiber and traditional beliefs."

-------- * --------

Taps: aggression and conventionalism equally. "Smash the perversions" certainly carries an aggressive element. Since perversions are things that people supposedly do, they cannot, therefore be the kind of thing that can be smashed. On this account, since the people who act pervertedly are the kind of things that can be smashed, we find logically embedded in this proposition another ambiguous "kill" euphemism. Conventionalism ("moral fiber and traditional beliefs") is here used to justify aggression against those who threaten the
traditional beliefs.

Item 7. "There is nothing wrong with premarital sexual intercourse."

Contrast. Agreement may be indicative of an assertion of moral autonomy or, may express a wish for freedom to pursue a pleasure. In either case, although the latter more weakly, there is anti-authoritarianism. Disagreement implies either alignment with the traditional religious view or alignment with non-secular arguments for the wrongness of sex before marriage — arguments which may hinge on social control issues of parentage, documentation and responsibility.

Item 8. "The sooner we get rid of the traditional family structure, where the father is the head of the family and the children are taught to obey authority automatically, the better."

Contrast. This is a complex and somewhat ambiguous proposition. There is an assumption of a connection between paternal family structures and the automatic obedience of authority. This assumption (which may or may not be warranted) inserts some ambiguity into the statement by forcing the reader to construct a series of hypothetical considerations to
determine the strength and direction of their response.

At any rate, agreement may indicate doubt with the rightness of paternalistic norms, or may reflect a feminist stance of demanding equality of authority in family dynamics.

Item 9. "There are many radical, immoral people in our country today, who are trying to ruin it for their own godless purposes, whom the authorities should put out of action."

-------- * --------

Taps: moral conventionalism and aggression. This proposition links radicalism and immorality and rather boldly states that there are people in this unified category who actively conspire to destroy all that is presumably "good". The assertion that the purposes of radicals are positively evil by being godless, brings into sharp relief the apparently clear-cut struggle between good and evil. Agreement probably indicates rigid, compartmentalized concept organization and dualistic, black and white moral reasoning. The aggressive component is expressed in the desire to put such people "out of action" by the force of authoritative censure.

Item 10. "There is nothing immoral or sick in somebody's being homosexual."

-------- * --------

Contrait. Agreement may indicate either, 1) the belief
that homosexuality is biological and not truly subject to personal control, or 2) that even if it is a matter of choice, the individual ought to be free to make it. In both cases conventionalism is rejected; in the first instance by implying that genes preempt tradition, and in the second by implying that sanctions against homosexuality are culturally relative and wrong. Disagreement of course indicates the rejection of the latter notions.

Item 11. "It is important to protect fully the rights of radicals and deviants."

Contrast. On the face of it, a fairly straightforward interpretation of certain Constitutional guarantees. However, by using unspecified "radicals", presumably meant to include all radicals from certain feminist groups to neo-nazis, and also by including the rather vague "deviants", this item represents something of an unqualified civil liberties proposition. The nonspecificity of "rights", "radicals" and "deviants" may strengthen resistance toward strong agreement.

On the other hand, disagreement would seem to show anti-equalitarian traits based on the assumption that only conventional people deserve equal rights.
Item 12. "Obedience is the most important virtue children should learn."

----- * ------

Taps: submission. This is a categorical proposition linking 'all children' with the exclusive category of 'most important virtue'. Logically, this proposition cannot be qualified in a scaled, Likert-type response. The "most" of a class (in this case, 'virtue') and the "all" of a class (in this case, all 'children') are exclusive categories that do not admit of degrees or partiality. One cannot be the "mostly the most" of something, or "partially the all" of something. It seems to follow that this statement and others like it cannot, logically, be agreed or disagreed to, believed or disbelieved in relative degrees; the proposition is all or nothing.

At any rate, agreement is indicative of the importance, in the mind of the authoritarian person, of submission to external controls and of instilling in children the presumption of the fundamental rightness of external authority over and above self-derived opinions.

Item 13. "There is no 'one right way' to live your life; everybody has to create their own way."

----- * ------

Contrariwise. Agreement suggests an appeal to autonomy. It also reflects the well-established American tradition of
individualism and self-reliance. This statement is rather unique in that disagreement requires a rejection of conventionalism, thus generating ambivalence in the rather paradoxical forced choice between submission to a way not one's own, or the convention of self-reliance.

**Item 14.** "Once our government leaders condemn the dangerous elements in our society, it will be the duty of every patriotic citizen to help stomp out the rot that is poisoning our country from within."

Taps: authoritarian aggression. This is probably the strongest and most blatantly right-wing appeal to aggression on the RWA Scale. For that reason, and that about one-third of my sample agreed with this statement, it deserves a slightly more rigorous analysis.

There are many authoritarian elements woven into the texture of this proposition. It carries the assumption that there are "dangerous elements" among us in the form of contaminating, ("poisoning") disease-like entities. There is the implication of an expectation regarding some official act of "naming" the dangerous elements, giving external validation to what is already presumed known by the person assenting to this statement. There is a moral and patriotic appeal to ridding society of poisonous elements by the use of force.
"stomp out the rot"). One can readily link some of the commonly associated authoritarian traits to the implications and assumptions in this proposition: 1) The reliance on convention and the need to identify with a strong, external authority. This is shown by the authoritarian's need to join "government leaders" and "every patriotic citizen" before acting on a presumably righteous principle. 2) Hostility toward out-groups is evidenced by the desire to join the powerful in-group of "every patriotic citizen" against the out-group of "the rot". 3) The importance of force in human affairs is made apparent by the dedication to stomping out the rot, as opposed to rational debate. Dialog is precluded by the self-righteous categorization of out-group elements as "rot".

Like item number one, this proposition carries a "kill" euphemism ("stomp out the rot"). The difference between this euphemism and that of item one, is its lack of ambiguity. "Stomp out the rot" has a much clearer "kill" referent than "get rid of". In my opinion, "stomp out the rot", must, for anyone with a native understanding of the english language, offer, at a minimum, the distinct possibility that it refers to killing people. Assent to this item therefore, indicates at least that the ambiguity is acceptable - that it's OK if it means either a figurative destruction of some general "evil" or the literal destruction of certain classes of people, in an effort perhaps, to "cleanse" the poison from the social body.
Item 15. "Government, judges and the police should never be allowed to censor books."

Contrail. Agreement with this item reflects a general support for a democratic moral autonomy - the attitude that people ought to have free selection in the marketplace of ideas and entertainment. This item could be considered to have a rather low controversy index; it, like item 13, borders on being an American conventionalism. In my research, this statement attracted less than ten percent disagreement.

Item 16. "Some of the worst people in our country nowadays are those who do not respect our flag, our leaders, and the normal way things are supposed to be done."

Taps: submission, conventionalism. The assumption here seems to be that there is a fixed and normal way of doing things and tied in with that normal (and presumably right) way are our leaders (authorities) and flag. Anyone not in respectful alignment with these three features of social propriety are to be counted as among the "worst" people in the country. The "flag" reference may be tapping superstition, which is thought (Adorno, 1950) by some to be associated with the authoritarian personality. And indeed, the language of the
past debates over flag-burning were indicative of some people considering the flag-symbol as a reified entity, not unlike the wafer/host in Catholic communion services, which becomes "the body and blood of Christ".

As a footnote, while the flag-burning issue was topical, some of the patrons of a bar, after viewing a TV news story on the subject, began grumbling about free-speech demonstrators and their non-right to burn flags. To throw in an absurdity, I chimed in with, "Yeah, save the flag, burn the damn Constitution!" In amongst the mostly quizzical expressions, to my surprise, I was met with a few supportive snorts of "you got it!" and "damn right!".

**Item 17.** "In these troubled times laws have to be enforced without mercy, especially when dealing with agitators and revolutionaries who are stirring things up."

------ * ------

Taps: aggression, conventionalism. This item, which is indicative of the general political tone of the instrument, singles out challenges to authority by "agitators and revolutionaries" as the primary social evil. Agreement here indicates a belief that law enforcement should prioritize its level of aggression and make ideological challenges to convention its front targets, even, by implication, ahead of
predatory crimes like rape, assault and murder.

**Item 18.** "Atheists and others who have rebelled against established religions are no doubt every bit as good and virtuous as those who attend church regularly."

---------- * ----------

Contrast. Agreement indicates a dissociation of goodness and membership in traditional religious sects, along with the implication that virtuous behavior, indistinguishable from the virtuous behaviors of frequent church-goers, is possible without connection to orthodox religious instruction. The item is, again, a statement of autonomy: that one can find and know goodness by the mental and spiritual aptitude inherent in personal consciousness. Those in agreement with this proposition are likely to paraphrase their attitude by such statements as "the kingdom of heaven is within you," "I and the Buddha are one," and "Atman is Brahman" and so on.

It should be clear that disagreement indicates, depending on response level, some degree of conventionalism, expressed in this case as the belief in the impossibility of knowing goodness without being told by an external authority. Indeed, how can a person know virtue, since by most traditional accounts, human nature is inherently wicked?
Item 19. "The situation in our country is getting so serious, the strongest methods would be justified if they eliminated the troublemakers and got us back to our true path."

----- * ----- 

Taps: aggression and conventionalism. The appeal to the "dangerous world" complex (Altemeyer, 1988) is obvious and the suggestion of violence is transparent. This item presents us with another relatively ambiguous "kill" euphemism. This statement could have been spoken, word for word (and may have been) by Hitler or Stalin during a rally or state address.

Although the tone is political with its "true path" referent, and agreement must be considered chillingly "fascist", none the less, errors of understanding may contribute to agreement that are not necessarily fascist in nature. For example, it may be possible to interpret the "serious situation" apolitically, as in referring to frustration with predatory, violent criminal behavior, in which case, justification of "the strongest methods" becomes a bit more understandable. Without the possibility of this kind of error acting as a moderator variable, we ought to be concerned, since over 40% of my sample agrees in some measure with this proposition.
Item 20. "Rules about being 'well behaved' and 'respectable' should be changed in favor of greater freedom and new ways of living."

Contrast. Agreement is indicative of a promethean desire for experimentation and nonconformity. Disagreement implies distrust in human ability to live in new ways, free from established rules.

Item 21. "Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else."

Contrast. Arguably, an apparent, straight forward inference from the Bill of Rights. Agreement implies a belief in an equally distributed right to autonomy. Disagreement would seem to indicate a belief that the right to autonomy, to be "different" is not equally distributed across lifestyle choices.

Item 22. "Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down."

Contrast. Settling down and conformity are made into a moral imperative here by the inclusion of "ought".
Thus, agreement implies not only assent to a well-known truism, that advancing age leads to conformity and quietude, but that it is morally correct that this should be so. This is probably one of the more mild-mannered epimethean propositions in the scale.

Item 23. "Authorities such as parents and our national leaders generally turn out to be right about things, and the radicals and protesters are almost always wrong."

-------- * --------

Taps: conventionalism, and resentment of challenges to authority.

Item 24. "A lot of our rules regarding modesty and sexual behavior are just customs which are not necessarily any better or holier than those which other people follow."

-------- * --------

Contrast. A common phrasing of the notion of cultural relativism. Agreement may indicate a well-considered scepticism of certain shared values, or a hedonistic desire to throw off restraints. In any case, agreement taps some degree of nonconformity.
Item 25. "There is absolutely nothing wrong with nudist camps."

----- * -----

Contrait. This statement does not carry a heavy social controversy, since nudist camps are a legal, rather traditional form of tolerated group eccentricity. Disagreement may tap a particularly rigid moralism or social propriety.

Item 26. "The real keys to the "good life" are obedience, discipline and sticking to the straight and narrow."

----- * -----

Taps: submission, conventionalism. The implications here are that living "goodly" (not necessarily happily) requires submission to external rules and the maintenance of discipline in following them (since they are likely to be contrary to one's desires) and that the path of righteousness is unquestioningly clear as black and white (straight) and without tolerance (narrow).

Item 27. "We should treat protesters and radicals with open arms and open minds, since new ideas are the lifeblood of progressive change."

----- * -----

Contrait. Agreement would seem to imply that the status quo is not good enough and in need of change, and that
progressive change will not come from established, conventional power bases, but from "radical" sources, who should not be feared.

**Item 28.** "What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path."

----- * -----

Taps: submission, aggression and conventionalism. This statement carries an appeal for a deindividuating absorption into the will of another personality. Agreement with such a proposition, in addition to submissiveness, implies that the respondent knows the "evil" to be crushed and the "true path" that society must follow. Agreement may indicate a desire to abdicate personal responsibility for obedience to external authority. This is one of the most transparent "Hitleresque" appeals in the survey.

The submission component in this item references a highly deferential attitude toward symbols of power, with whom the authoritarian desires association (Altemeyer, 1988; Gibson, 1990; Tonnesmann, 1986). Since he believes he has no individual ability to realize power and status, the authoritarian may attempt to purchase an association with powerful others by offering a blank check of alliance, which those in authority can cash for some form of aggression.
currency or "dirty deeds", e.g., "Crystal Night", "Night of the Long Knives", "Watergate"; or the more mundane acts of resenting and perhaps attacking, homosexuals, environmental activists and other unconventional types (see Appendix B).

Item 29. "The people who are always yelling for more 'law and order' threaten democracy more than the 'radicals' in our society."

---------- * ----------

Contrait. Agreement here indicates a somewhat more sophisticated insight into authoritarianism itself than do the other contrait items. To understand and assent to this statement, one must, to some degree, be sensitive to the meaning of Constitutional intent regarding the balance and limits of state power over individual rights.

Item 30. "One reason we have so many troublemakers in our society nowadays is that parents and other authorities have forgotten that good old-fashioned physical punishment is still one of the best ways to make people behave properly."

---------- * ----------

Taps: aggression, conventionalism. Agreement indicates that physical aggression against one's children is among the best methods of instruction. This mirrors Ronald Reagan's suggestion that schools restore physical punishment as a part
of a "back to basics" program. Since "old-fashioned physical punishment" and "troublemakers" is left vague and unspecified, strong agreement may be presumed to include inflicting any form of physical harm for any sort behavior deemed as troublesome.

**Summary and Overview of Concerns**

According to Altemeyer (1988) there are three dispositional components of authoritarianism: 1) Conventionalism - the tendency to accept without question, the habits and values of one's own culture or group. 2) Submission - the acceptance of rigid hierarchical social orders where personal worth is a clear function of material wealth and power. 3) Aggression - a readiness to harm, or allow the harming of unconventional others thought to be disapproved of by group authorities, e.g., "radicals", "deviants".

The Right-Wing Authoritarianism Scale contains 30 items designed to variously tap one or more of the three components of authoritarianism. Protrait items are worded to reflect what is thought to be the psychology of the authoritarian personality. In other words, statements are structured so as to appeal to common dynamics of authoritarian thought and behavior such as: a) the us-them dichotomy and the need to associate with powerful in-groups, b) devaluation of others, c) self-righteousness, and d) the use of euphemistic language (Gibson, 1991) - especially "kill" euphemisms when referring to
disapproved individuals or out-groups.

Consensus on how authoritarian personalities develop is to some degree, varied, from a psychodynamic account (Adorno, et al., 1950) to Altemeyer's (1989) social-learning explanation, to some sociobiological hypotheses (Van der Dennen, 1986) which associate authoritarianism with xenophobia and ethnocentrism, suggesting a common evolutionary root. It is the author's emerging thesis that authoritarianism is an inherited disposition of the species, developing from "herd" or social-cooperation instincts and predator fear. Although the suggestion here is that authoritarianism may be associated with innate group cohesion mechanisms (Duckitt, 1989) the predisposition to behave in an authoritarian manner must also be seen as highly plastic with learning and environmental forces, which serve to "release" such traits and probably account for a large share of the personal variability in authoritarianism.

Authoritarianism has strong effects on learning and motivation. Studies (Miller, 1983) have shown that children who grow up in punitive, authoritarian families do not develop independence of thought or identity, learn always to wait for "the word" to come down, and hence acquire a need for leadership in nearly every facet of decision-making. Authoritarian students tend to lack creative spontaneity and interest in process, preferring the assurance of just having
right answers. Such persons lack tolerance of ambiguity and correspondingly, cognitive complexity (Tom, Cooper, McGraw, 1984) along with lacking critical thinking skills; (Romanish, 1989) being compelled thereby to fix upon supplying "right answers". Thus, producing correct responses of high specificity on demand, becomes for such students and teachers, the beginning and end of education.

There are other findings specific to educational concerns, for example, high levels of parental authoritarianism are related to the following in children:
2) Show little curiosity and are low in playfulness and originality of thought (Baldwin, 1945).
3) Show little independence and demonstrate a low level of social concern (Baumrind, 1971, 1973).

As mentioned above, authoritarianism indigenous to elementary and secondary school systems results in shaping student thought processes to produce correct answers, resulting in what Wirth (1983) called, "a generation of nervous right answer-givers". This naturally creates a population of uncreative respondents, reacting to external cues - answer-givers who have never learned how to ask a critical question. It may even be argued that, along with parental authoritarianism, 12 years of aversive conditioning from asking questions could not avoid producing dogmatic, rigid problem
solving, low levels of curiosity and creativity and dependent, socially irresponsible people.

Altman (1988) has demonstrated that liberal education and experience tend to lower the level of authoritarianism. Generally, four years of college education and experiences within a multi-cultural setting lower authoritarian scores. The most precipitous drop in authoritarian levels was recorded after courses with a strong humanities focus, e.g., philosophy, history, literature, social sciences, etc.. The resulting recommendation for American education generally, is a reduction in the emphasis in vertical specialization with a renewed insistence on a liberal distribution of course work over the higher education experience.
References


The Three Components of Authoritarianism

Altemeyer (1988) defines authoritarianism as the covariation of the following 3 traits:

CONVENTIONALISM

A high degree of unexamined internalization of the social conventions that are perceived as endorsed by society and its established authorities.

In-group values are paramount and always supersede individual preferences. Group norms are given as singularly right, thus precluding the possibility of the rightness of other group's norms. Others are different and therefore by definition, not right. That which is not right, is wrong and against us. That which is against us is a threat.

AGGRESSION

A disposition toward aggressiveness, or acquiescence to other's aggressiveness which is directed against various persons or groups, that is perceived to be sanctioned by established authorities.

Those who threaten us - all who are not-us - must be defended against or destroyed. Defense of group conventions requires allegiance and discipline within a clearly defined leadership hierarchy.

SUBMISSION

A high degree of submission to those who are perceived to be the established authorities in the society.

Leadership and discipline require obedience without question and the surrender of personal will to the will of those who represent the established way. Therefore, moral autonomy must be denied and given over to pre-established group norms.
What, then, is the authoritarian personality as it is here delineated? Briefly and inadequately, it characterizes the basically weak and dependent individual who has sacrificed his capacity for genuine experience of self and others in order to maintain a precarious order and safety. In the type case, he confronts with a façade of spurious strength a world in which rigidly stereotyped categories are substituted for the affectionate and individualized experience of which he is incapable. Such a person, estranged from inner values, lacks self-awareness and shuns introspection. His judgments are governed by a punitive conventional moralism, reflecting external standards in which he remains insecure since he has failed to make them really his own. His relations with others depend on considerations of power, success, and adjustment, in which people figure as means rather than as ends, and achievement is not valued for its own sake. In his world, the good, the powerful, and the in-group stand in fundamental opposition to the immoral, the weak, the out-group. For all that he seeks to align himself with the former, his underlying feelings of weakness and self-contempt commit him to a constant and embittered struggle to prove to himself and others that he really belongs to the strong and good. Prejudice against out-groups of all kinds and colors is a direct corollary of this personality structure [p. 776]. Smith, 1950.