voting behavior that were consistent with a desire to support winners, but which made little sense in strategic terms. Consider, for example, four voters who preferred Mondale and Hart in that order and who voted for both candidates in scenario two (Hart second and Glenn a distant third) but only for Mondale in scenario three (Glenn second and Hart third). This switch in votes does not make strategic sense. In either case they were voting for their most preferred candidate; whatever motivated them to vote for both candidates under scenario two (such as relative indifference between the candidates) would not seem to have been affected by a drop in Hart’s support in scenario three, and voting for Hart in addition to Mondale in no way detracts from the likelihood of Mondale winning (at least, not more than in scenario two). What can explain their behavior is that they saw no point in supporting a loser. Similarly, consider voters who preferred Hart and Mondale, in either order, as their top two choices and added a vote for Glenn under scenario three. Such a shift would make sense if both leading candidates had dropped drastically in the polls; but with only Hart declining, an added vote for Glenn could only help elect the candidate who ranked third or lower in their preference ordering. Yet it is consistent with the conclusion that voters were shifting in the direction of expected winners.

Overall, 22 of 25 (88 percent) who switched their votes between scenarios two and three did so in a way that is consistent with the notion of voting in favor of winners and avoiding losers. Of course, approval voting is not unique in this respect. The wasted vote phenomenon under plurality voting also represents a desire to vote for winners (although it has the additional strategic interpretation of wanting to make a difference). But that is really the point. Approval voting, whatever else one might say about it, is subject in practice to many of the same dynamics as plurality voting.

**Conclusion**

What one concludes from our experiment depends on the expectations brought to it. If one is looking for a ringing endorsement of either plurality or approval voting, our results provide neither. Under plurality voting, shifts in behavior to avoid a wasted vote, along with other, more subtle reactions to expectations, obviously occur. Under approval voting changes also occur, mostly, it would appear, in order to “go with a winner.” Thus, voting under both systems is highly reactive, and it is not obvious to us that voters would be more satisfied or somehow better off under approval voting (though they would perhaps be no worse off either).

If, instead, one approaches our results with the expectation that approval voting would eliminate strategic behavior because one can vote for both a weak and a strong candidate, or if one begins with the hypothesis that individuals will simply “vote their preferences” because strategic analysis is too complicated, then our results provide a rude awakening. Strategic behavior, though relatively infrequent, was manifested in several ways. And the tendency to vote for winners showed convincingly that voters will react to political circumstances under approval voting just as they currently do under plurality voting.

The introduction of approval voting would have a variety of consequences, both good and bad, and there is room for disagreement about the overall balance. But it would be a mistake to believe that approval voting would lead voters to express their preferences without regard to the political world around them. Whatever its properties as an abstract system, approval voting is not immune to the behavioral dynamics that influence real election outcomes under any voting procedure.

**Should You Brush Your Teeth on November 6, 1984: A Rational Choice Perspective***

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American educators have long been concerned about whether our citizens brush

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*An earlier version of this paper was prepared for delivery at the Conference on Voter Turnout, May 16-19, 1979 at the Half Moon Inn, San Diego, California. Reassemblages between toothbrushing and certain electoral behavior of interest to political scientists are, therefore, no doubt, purely coincidental.

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their teeth. In our schools children are exhorted to brush their teeth and warned that dangerous consequences will follow if they do not. Nonetheless, the rate of toothbrushing seems to have fallen in the general population (1980 is a partial exception), and the blame can't be attributed solely to poor dental care or socialization of the younger generation. Rather, the decline in toothbrushing appears among a wide range of citizens. This decline has been blamed on a variety of causes, including a growing lack of respect for the role of teeth in our society, which some scholars believe has been intensified by the Wonderbread scandal.

One group of scholars, using what they call a rational choice approach, has developed a model to explain the conditions under which people will brush their teeth, and also to explain which of the two American styles of toothbrushing, U (up and down) and S (side to side), citizens will adopt. Any single day's brushing will have an imperceptible effect on whether or not the citizen does or does not get C₀, zero cavities, or C₁, one cavity. Hence, on any given day, rational citizens should not brush their teeth.

This "rational choice" view has differed among scholars, since it seems to imply that nobody will brush their teeth. (Clearly, it is costly to brush one's teeth in time and energy, not to speak of the cost of regularly buying a new toothbrush.) Since most citizens still do brush their teeth, this "rational choice" view quite obviously makes little sense (cf. Grofman, 1983). On the other hand, some scholars (see, for example, Niemi's 1977 article in Public Health) have rebutted by pointing out that many people actually get pleasure from brushing their teeth and that toothbrushing is a topic of family conversation and, thus, in many ways a social rather than an individual act. Moreover, one classic empirical study in the American Dental Science Review (Riker and Ordeshook, 1969) showed that many people feel that brushing their teeth is a duty, regardless of its effect on tooth decay. Indeed, this perception of duty was more important than other instrumental factors.

Other scholars in the rational choice tradition have sought to show that brushing can sometimes be rational if you have a strong fear of tooth decay and don't care about probabilities, but only about worst possible cases. This minimax-regret model has, however, never been felt to be particularly convincing by anyone other than its propounders. We believe the usual analysis of the rational choice model of toothbrushing is misguided on three counts. First, empirical work on the rational calculus of toothbrushing has been marred by an emphasis on front teeth. Most of work on the perceived relative desirability of side to vs. up and down styles, and for reasons incomprehensible to me virtually all work on brushing vs. nonbrushing, has been confined to the perceived impact of brushing on the upper front teeth only—completely neglecting the fact that the ordinary person generally brushes a number of teeth at once and is at least somewhat concerned (albeit not equally) with all of them. (cf. "I'll ask for November is my two front teeth.")

A second difficulty with the usual rational choice analysis is that it treats toothbrushing as one-shot decision. Since citizens are confronted with a large number of occasions on which they must decide whether or not to brush (and a reasonably large number of teeth which might be brushed on any given occasion), looking at the decision from a utilitarian rather than the customary act-utilitarian perspective seems to be more sensible approach. This point is reinforced by Weisberg and Grofman's (1981) finding that an excellent predictor of front-tooth toothbrushing is previous brushing history; i.e., the decision to brush or not to brush one's two front teeth on any given day seems to reflect a considerable element of choice of a long-run rule for action. For example, Weisberg and Grofman (1981) found that 76.5 percent of such decisions in 1976 could be predicted simply by predicting that those who usually brush would continue to do so and those who usually didn't wouldn't. From a rule-utilitarian

The distinction between "rule" and "act" utilitarianism is an important (although controversial) one in the contemporary literature on social ethics. (See e.g., Rawls, 1955; Smart, 1956; Kaplan, 1961.) To achieve a reasonably high probability of clean teeth, it may be necessary to brush most of the time, even though no given toothbrushing is likely to contribute significantly to this end.

In like manner, the decision to buy or not to buy a toothbrush may reflect a decision about the merits of brushing in general, not merely on any given day. See discussion below.
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A second difficulty with the usual rational choice analysis is that it treats toothbrushing as a one-shot decision. Since citizens are confronted with a large number of occasions on which they must decide whether or not to brush (and a reasonably large number of teeth which might be brushed on any given occasion), looking at the decision from a rule-utilitarian rather than the customary act-utilitarian perspective seems to be the more sensible approach. This point is reinforced by Weisberg and Grofman's (1981) finding that an excellent predictor of front-tooth toothbrushing is previous brushing history; i.e., the decision to brush or not to brush one's two front teeth on any given day seems to reflect a considerable element of choice of a long-run rule for action. For example, Weisberg and Grofman (1981) found that 76.5 percent of such decisions in 1976 could be predicted simply by predicting that those who usually brush would continue to do so and those who usually didn't wouldn't. From a rule-utilitarian perspective, individuals (perhaps in terms of some form of long-run utility maximization) choose a rule to live by, and only sometimes do they deviate from it.

Third, and most importantly, we must recognize that, for most individuals, the most crucial decision in toothbrushing is probably whether or not to buy a toothbrush. For example, Traugott and Katosh's (1979) Tooth Validation Study shows that 9.2 percent of the decisions to brush or to not brush one's two front teeth in 1976 could be correctly predicted by knowing who owns a toothbrush and predicting that those who do will brush and those who don't won't (cf. Erikson, 1979). The importance of toothbrush purchase for the decision to brush might be explicit in rational choice terms, since the main cost component of the toothbrushing decision is the decision for many individuals to buy or not to buy a new toothbrush. To see why taking into account toothbrush purchase changes the citizen's decision calculus, we need to think of the costs of brushing as having two components, fixed cost (toothbrush purchase).

E.g., "Jimmy, did you brush your teeth today?" "Aww, gee, mom, do I have to?"

Lauryll K. Epstein has pointed out (personal communication) that some citizens have dentists, dental technicians, or toothbrush salesmen in the family who check to see whether your toothbrush has been used and help you get a new toothbrush if your old one gets broken.

Other more philosophically minded scholars have argued that each citizen is concerned not only with his own decision to brush or not to brush but with that of millions of other citizens. Thus, a citizen is motivated to brush on any given day not solely because of the consequences of that decision for the prevention of tooth decay but for the inspiration it will provide to other citizens. Unfortunately that argument doesn't seem very compelling since the causal nexus between one citizen's toothbrushing activities and that of another seems nonexistent. Indeed, even if we think of the citizen as concerned not with decisions of others but only with decisions of his many future selves, under some philosophic views (e.g., existentialism), there is no causal nexus between an act of not toothbrushing today and an act of not toothbrushing tomorrow. Of course, some might argue that we are what we have been, and that in Brody's felicitous phrasing, "toothbrushing is a self-reinforcing process" (Brody, 1977). This is particularly true in those climates where a failure to brush several times in a row renders your toothbrush inoperable.

Indeed, there is suspicion that at least one of its authors doesn't believe it.

Explaning such deviations may require short-run factors, but the issue becomes accounting for deviations from the rule the citizen has chosen.

Without a toothbrush, it is impossible to brush either up and down or sideways.

Since citizens are known to lie through their teeth to survey researchers about whether or not they own a toothbrush, I would propose some probing questions to determine who really does own a toothbrush, e.g., "Where did you buy your toothbrush?" "How long ago did you buy it?" "How long do you think it will last?" (cf. Traugott and Katosh, 1979).

We are not arguing that if toothbrushes were free or if everyone were given a toothbrush that would last a lifetime that everyone would brush his/her teeth. Rather, we are noting that the costs of toothbrushing, purchase of a toothbrush is a major factor. In many states, governmental inefficiency makes it difficult to buy toothbrushes most days of the year and most hours of the day and restricts their availability to a limited number of locations. It is well known that reducing the price of toothbrushes close to zero, may not dramatically increase the incidence of toothbrush-
chase) and variable cost (toothbrushing). Having purchased a toothbrush, one can brush whenever one thinks it important enough to do so; while the cost of toothbrush purchase can be amortized over a number of brushings. In particular, once one owns a toothbrush, any given decision to brush or not to brush requires incurring only minimal additional costs. Furthermore, the decision to purchase a toothbrush is made in advance of particular day-to-day decisions to brush or not to brush and is based on a calculation of the desirability that one may at some time or times in the future wish to brush.11,12 It is not, as in the usual analysis (Smoke, 1978). In terms of this approach, such a phenomenon can be accounted for if many of those who don’t brush are those for whom toothbrush purchase costs are not the principal cost component in their decision to brush or not to brush, those with especially high variable costs, are those who assign low value to prevention of tooth decay, or are those who attribute low efficiency to brushing.

Note also that our analysis suggests that people who go on trips (and who may not have a toothbrush with them) are less likely to brush, because brushing will necessitate purchase of a new toothbrush.

11Citizens may also be prey to something akin to the “gambler’s fallacy” of believing that past events affect future probabilities even for independent events (i.e., if 3 reds appear in a row on the roulette wheel, then the next time is more likely to be black than red). The analogue to the gambler’s fallacy would be the belief that the more times you brush, the more likely it is that your next brushing will be efficacious.

Bernard Grofman (personal communication) has conjectured that individuals who brush their teeth and don’t get cavities are more likely to continue to brush than those who brushed but get cavities anyway, even though their brushing cannot be shown to have been responsible for their absence of cavities. (Among sociologists this is known as “superstitious behavior.”) In like manner, Grofman has conjectured that individuals who haven’t brushed and still don’t get cavities will be unlikely to bother acquiring a toothbrush or bother to brush even if they happen to already own one. This notion of toothbrushing as responsive not so much to rational calculations as to previous history of positive reinforcement is a common theme of the expected value of brushing on any single specified occasion, an even-specified decision. Thus for many citizens, once having decided to buy a toothbrush, brushing their teeth is as habitual an act as brushing their teeth (cf. Boyd, 1981). Of course, we now have to account for why some people choose to buy a toothbrush while others do not.

References


U.S. Withdrawal From UNESCO: Incident, Warning, or Prelude?

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On December 28, 1983 the United States announced that effective December 31, 1984 it would withdraw from the United Nations Educational, Scientific and Cultural Organization (UNESCO). The announcement, which was made in response to what the State Department has described as an unacceptable sequence of events involving the United Nations, comes after the United States had been a member of the organization for over 60 years.

The decision to withdraw from UNESCO follows a long period of tension between the United States and the United Nations organization over a variety of issues, including the handling of the controversial resolution on human rights. The United States had been a strong critic of the resolution, arguing that it was too vague and open to interpretation, and that it did not provide adequate protections for individual rights.

In addition to the resolution on human rights, the United States had also been concerned about the growing influence of Third World countries in the United Nations, and the increasing role of the United Nations in matters such as international trade and the environment.

The United States had taken a number of steps to address its concerns over the United Nations, including the creation of the U.S. Commission on International Organizations, which was established in 1975 to study the role and functions of the United Nations and its specialized agencies. The commission has been a key player in the debate over the future of the United Nations, and has been instrumental in shaping the United States' position on a number of key issues.

Harold K. Jacobson, Jesse S. Reeves Professor of Political Science and a program director in the Center for Political Studies at the University of Michigan, currently a Fellow at the Woodrow Wilson Center, has been the representative of the American Political Science Association on the U.S. National Commission for UNESCO since 1980. He testified on the impact of the social sciences of the U.S. withdrawal from UNESCO before the Subcommittee on Human Rights and International Organizations and on international Operations of the Committee on Foreign Relations of the House of Representatives on April 28, 1984.