
A series of interviews was conducted with 10 patients in an anti smoking clinic. Earlier results implying that volitional breakdowns in trying to quit smoking occur under emotional stress and are preceded by distorted reasoning were replicated. The patients were also asked about techniques they used to resist temptations. These techniques involved (a) bringing to mind values and wishes incompatible with the wish to smoke, and (b) diverting attention to some other action. Such acts may be interpreted as processing mental energy rather than information, pointing to a need for a broader conception of the regulation of action than is available in contemporary work on decision making.


In a previous report Sjöberg & Johnson (1976) reported a study of failures in giving up smoking. They found that their subjects had difficulty in persisting in their decision to quit smoking, particularly under emotional stress. Several volitional breakdowns occurred. This finding was interpreted in theoretical terms as an indication of a weakening of the cognitive system due to loss of mental energy. The loss of energy was in turn suggested to be dependent on the emotional stress. These theoretical notions were further developed by Sjöberg, Samsonowitz, Lund, Fhanér & Johnson (1978) in a survey of research on obesity and anorexia nervosa. In that report a more elaborate theoretical scheme was presented and it will be discussed also here.

Thus, volitional breakdowns seem to occur most often under emotional stress. They are interpreted as the results of a weaker and more primitive functioning of the cognitive system. People typically reason in a shortsighted and twisted manner in giving up their earlier commitments. (Volitional breakdowns should not be confused with more sober types of changed decisions due to new incoming information. Such decision changes are very rare in our studies of addictive behavior and will not be further discussed here.)

Action is regulated both by wishes and decisions. Our theory of volitional breakdowns postulates certain properties of wishes and decisions. First, strong needs are assumed to give rise to strong wishes, often related to needs in an obscure manner. Which need is the basis of a certain wish may be very unclear. Furthermore, when needs become stronger the generated wishes become more compelling and press for an immediate here-and-now fulfilment.

A strong need, then, generates compelling wishes and possibly also wishes related to the corresponding need in an unclear manner. The wish constitutes an input to decision making. Needs generate wishes and thereby also energy, but decision making is a conscious process that consumes energy. The immediate sources of energy available for decision making and action are to be found in the need and value system of the individual. Energy is consumed in monitoring the processing of various wishes. In particular, strong wishes that for some reason the individual does not want to fulfill, require energy in being counter-acted. This energy drain in turn con-
stitutes a weakening of the resources available to the cognitive system which is utilized in judgment and decision making.

In this way, the compelling and shortsighted wishes produced by strong needs that are in conflict with commitments and values cause a drain in energy which in turn makes various types of twisted and shortsighted reasoning possible and likely. Hence, volitional breakdowns may occur.

The purpose of the present study was to test further the generality of the empirical findings of Sjöberg & Johnson (1976) and the theoretical interpretation suggested above. More specifically, the theory implies that volitional breakdowns should occur under emotional stress and that they should be preceded by twisted and shortsighted reasoning. Furthermore, the present study is also a preliminary attempt to investigate various techniques whereby individuals may counteract wishes. There were no particular expectations regarding such mechanisms. We simply wanted to investigate as thoroughly as possible any kind of techniques that individuals had developed in fighting wishes. It is interesting to note that a similar interest occurs in work more related to behavior therapy (e.g., Parri & Richards, 1977). Parri & Richards investigated naturally occurring episodes of self-controlled behaviors but did not go into the type of critical situations that were under study in the present report. Rather they had their subjects report on a more abstract level about what type of techniques they had developed for regulating their own behavior, such as self-reward and "problem solving". It is important, we believe, to study actions at the level of single decisions at the critical moments when the temptations are strong. One reason for the importance of doing so is, of course, theoretical. Another reason is that one single failure quite often leads to a complete breakdown of the commitment of the individual, at least in the case of smoking.

METHOD

Subjects. Ten persons participated in the study. Five of them were women and five men. The mean age of the women was 32 years and the mean age of the men was 48 years. The subjects were selected at random among the persons who came to the anti smoking clinic of the Sahlgrenska Hospital in Göteborg, Sweden. Two of the subjects never participated in the treatment given by the clinic. They tried to quit smoking on their own. One of these persons found it impossible to attend the group meetings because of her work schedule, and the other did not come because she started smoking again before the first group meeting. However, these two persons participated in the investigation.

Procedure. Each subject was interviewed three times. The first interview which replaced the conventional intake interview of the clinic was held two to three weeks before the first group meeting. The second interview was held about one week after the first group meeting, and the third about four weeks after the first group meeting.

The interviews were carried out in the anti smoking clinic. During the interviews attempts were made to create very close personal contact. This was done because the subjects should feel free to verbalize thoughts of a personal character about their problems concerning smoking and the experience of their attempts to quit smoking. The interviews were tape-recorded.

After completion of the study, the subjects were, finally, briefly interviewed on the telephone four months after the third interview in order to find out whether they had taken up smoking again and under what circumstances.

The treatment offered by the clinic. Most of those who come to the anti smoking clinic take this contact on their own initiative. Few people are sent by their doctors. When the patient comes to the clinic, following a waiting time which can be up to several months, he is placed in a quit smoking group after an intake interview with a psychologist. A few patients who are judged to be unsuitable for a group treatment obtain individual treatment. Certain persons are recommended not to try to quit smoking at all if their psychological status is judged to be such that they cannot take the stress which can be generated by an attempt to quit smoking.

The most common treatment takes place in a group which consists of ten to twelve persons. Groups are constructed in order to be roughly homogeneous in terms of profession or education. This is done to improve communication and identification within the group. The group meets six times with one week between each meeting, with the exception of the last meeting which is held three to four weeks after the fifth meeting. Each meeting takes about one and a half hours. Four of the group meetings are led by a psychologist. These meetings are organized in different ways depending on the group members. Most often they consist of group members talking about smoking and the problems they meet in trying to quit smoking. After this they get advice from the other group members and the psychologist about how to solve those problems. The second and the fourth meeting are led by a physician who gives an account of the physiology of smoking and the risks of smoking.

In the first meeting the patients collectively make a decision to quit smoking. At this occasion, however, most of the members have already stopped smoking. In each meeting there is a registration of who has smoked and how much.

In addition to the group meetings the participants are offered nicotine chewing gum. The purpose of nicotine chewing gum is to decrease the needs of nicotine and thereby to decrease problems of abstinence. The amount given to each participant is adjusted to his special needs.

The treatment given by the clinic of the Sahlgrenska Hospital costs Sw. kr. 175:- for those who come on their
own initiative and Sw. kr. 43-- for those who come sent by a doctor.

Efficient components of the treatment are probably the following:

(1) Nicotine chewing gum which decreases somatic needs of nicotine.

(2) Group pressure which helps the individual to abstain from smoking and group support which makes it easier for the individual participant to solve various difficult problems.

(3) Medical information which increases motivation not to smoke.

RESULTS

We first document the ten case stories in some detail and then present some summary evidence. Subjects are referred to by means of a code where the initial letter (F or M) denotes sex and the following digits age. The order of presentation is given by the degree of success of the subjects in giving up smoking; the most successful persons being discussed first.

F 29. F 29 smoked 20–25 cigarettes per day when he decided to quit.

She succeeded in abstinence from smoking during the seven weeks she participated in our study. She was not exposed to any situations where she found it particularly difficult not to smoke.

The contact with the clinic was important to F 29, because it helped her stop smoking and made her feel that she could not start smoking again.

When she felt tempted to smoke she would chew nicotine chewing gum and push away the thought of smoking. She was so intently decisive not to smoke that she felt she had a “better ego” which all the time told her not to smoke and that it was useless for her even to think about that possibility. The effect was that she mostly not even felt tempted.

During the first weeks F 29 also would count the number of days and weeks that she abstained from smoking and this made her feel very competent, but after some time she would think less about smoking and also forget about counting the days. She felt she competed with herself and could not accept not to manage what other people could manage. She told herself that she had a good character and a strong will. She knew that she would feel weak if she could not resist the temptation to smoke. F 29 also made it her aim to be able to tell the group that she had not smoked.

F 29 noticed that she became more interested in information about the risks of smoking and she even used to inform other people in her environment about these risks.

Four months later, F 29 had still not smoked.

M 55. M 55 smoked about 20 cigarettes per day when he gave up, and he had earlier smoked 40–50 cigarettes per day. Now and then he also smoked a pipe.

M 55 had some medical problems that made it necessary for him to quit smoking in order to have a chance to get well.

M 55 did not smoke at any time during the period of our study.

He used the time between the first interview and the first group meeting, when he gave up smoking, to prepare himself for the fact that he was going to stop smoking. He decreased his consumption to 5–6 cigarettes per day and told himself “I cannot die at an age of 55. I would like to live a little longer”. During this period M 55 got accustomed to the thought that he was going to give up smoking.

When M 55 felt tempted, he would chew nicotine chewing gum. He would also have his chewing gum lying on an ash tray like a cigarette or suck it as a cigarette. When he was very tempted and also at home he would go into his bedroom and lie down to read. He knew that by performing this act he would not smoke since he had never smoked in his bedroom. M 55 also changed his morning habits. Earlier he used to smoke three cigarettes as soon as he woke up, but now he stayed in bed and read a newspaper or a book till it was time to get up.

M 55 told everyone he knew that he had given up smoking. In this way he created a pressure on himself not to smoke. He made a point of showing other people that he could carry through his decisions and was proud of having a reputation of being persistent. If he started smoking again he would see it as a personal failure.

M 55 also put up anti smoking posters all over the walls in his apartment in order to remind himself that he had given up smoking.

M 55 felt that things were easy for him because he did not work as much as usual and had no large personal problems.

Four months later M 55 had taken up smoking. His failure could be traced back to a stressful event occurring three months after the third interview, when he smoked 7–8 cigarettes. After that he was soon back to his original level of consumption.

M 47. M 47 smoked on the average 15 cigarettes per day.

He succeeded in abstaining from smoking during the time he participated in our study.

M 47 had a number of techniques to resist temptation. He felt it important to engage in a quit smoking group to make sure to himself that he had really given up smoking. Compensation for cigarettes was available in nicotine chewing gum or candy or an apple. He felt it was easy to resist when he was active but difficult when he was passive. He was careful to avoid having cigarettes at home or at work. When he felt tempted he had a technique of stopping his own thoughts. He would then first observe that he was tempted, then tell himself that he would not smoke and finally think about or start doing something else. He felt that this was a very efficient manner to go about the resisting. He would also bring to his mind thoughts about the reason for giving up smoking and social commitments. He did not want to disappoint the members of the quit smoking group and especially not a friend who was also a member of the group. He felt proud when he could tell them that he had not smoked. M 47 also felt it important that he attributed success or failure to himself.
and not to external factors. He also wanted to show himself that he could succeed with something he had committed himself to. He knew he would be very disappointed with himself if he failed and considered it to be very important for his self esteem to be able to give up smoking when he had decided to do so. He was also aware of the fact that he would easily give up if some person close to him showed doubt about his ability to give up smoking.

M 47 felt it very important to put up partial goals like not smoking till the next group meeting. He did not want to promise anyone, not even himself, that he would give up smoking for ever.

Four months later M 47 had smoked about 5 cigarettes. He was still fighting and did not consider himself to be a smoker.

F 30. F 30 smoked about 15 cigarettes per day when she decided to quit.

She used the time between the first interview and the first group meeting to prepare herself mentally for giving up smoking. F 30 quit smoking before the first group meeting and she considered it important that she had been given the opportunity to decide by herself when to quit.

F 30 smoked once during the time of our study. The occasion occurred 15 days after she had given up smoking. The reason was that she was very upset and sad about something that happened at her job. Then she smoked half a cigarette. She put all thoughts about giving up smoking away and was only oriented to the need of comfort and support.

F 30 had several ways of resisting temptation. When she wanted to smoke, she would chew nicotine chewing gum and tell herself that she really did not need to smoke, she needed nicotine. Then she did not have to smoke, but might as well take a nicotine chewing gum. Also she could try with an apple or an orange. She was concerned about being passive with her hand, and therefore she started to clean up the house during the first days after having stopped smoking. F 30 wanted to buy a new car but could not afford doing so unless she saved money by quitting smoking. When she felt tempted she would think of the car that she wanted to buy. She also listened much more to information about the risks of smoking than she had done when she smoked, and this prevented her from smoking. Another technique was that she succeeded in creating the feeling of failure she had had when she had a relapse and smoked half a cigarette. She also thought that if she failed she had to start from the beginning again. She was afraid to fail and considered it to be very important to succeed in something she had started. Every time she felt tempted to smoke she had to fight herself not to do so.

Four months later F 30 had not smoked.

M 43. M 43 smoked about 30 cigarettes per day when he decided to give up smoking.

He had a relapse 23 days after having stopped smoking. He then had a few friends at home for a party. At the end of the night, and after a few drinks, he thought that "It makes no difference if I take one cigarette". He had not felt particularly attracted to smoking at the time. The same night he smoked another four cigarettes. He felt that it was much easier to take several more cigarettes once he had taken one.

At a previous occasion, when M 43 had had some alcohol, he had felt very tempted to smoke and said to himself: "It does not matter if I smoke now, because stopping smoking recently. One cigarette will not affect my attempt to stop smoking." However, M 43 did not smoke partly because his children persuaded him not to smoke and partly because he did not have cigarettes at home. Of the whole M 43 often felt a strong support from his children in his attempt to stop smoking.

M 43 had several techniques for resisting temptation. He felt it was important to be active. He also wanted to avoid parties and alcohol. He felt it was easier to give up smoking in the springtime when the weather was nice and his mood was better. Therefore he stopped smoking during the spring. On a previous occasion he had tried to give up smoking in January and felt it was difficult because the weather made him depressed. He usually felt very much tempted to smoke in the morning. Then he would take some nicotine chewing gum before getting out of bed. He also broke an earlier habit to have coffee, read the morning paper and smoke. At his work it felt it was difficult to keep thoughts of smoking away while working in the office or speaking on the telephone. He avoided office work and rather preferred to do manual work a much as possible. When he was very much tempted to smoke he used to pass a place at his job where he felt the bad odour of old tobacco and this would decrease his temptation. M 43 often felt tempted to smoke when he drove his car. To prevent himself from smoking he used his car as little as possible. When he drove his car and was tempted to smoke he stopped the car and took a short walk.

When he was at home and was passive he noticed that he did not know what to do with his hands when he did not have a cigarette to hold. To avoid this he worked in his garden.

M 43's wife and friends never believed that M 43 could give up smoking, since he had failed in a previous attempt to quit. This made him exert himself in order to succeed because he wanted to demonstrate that he could carry through what he had decided to do.

M 43 took up smoking again after two months in a period of passivity and in spite of not feeling very much tempted.

M 63. M 63 smoked a pipe and he smoked about 20 fil of tobacco per day.

M 63 smoked twice during the month following his decision to quit. The first time was the day after his decision, and the second time was the following day. He had consumed all his nicotine chewing gum and he could not get more because the clinic was closed at the time. He felt very much tempted to smoke so he bought a small pack of cigarettes and smoked one cigarette. He thought about his decision to quit, but told himself that "It cannot be very dangerous to take one cigarette, because I will get those nicotine chewing gums as soon as the clinic is open. I will manage all right if I can get over this situation!". His second cigarette on the following day was taken by the same reason as the first one. He then decided to throw away the pack of cigarettes after having got chewing gum and he also did so.

At a third time he happened to be in the same situation without nicotine chewing gum. Then, however, he tol
himself that he had to stand it until the next day when he could get nicotine chewing gum, and he managed to do so.

M 63 felt it was important that a certain amount of time had passed between the first interview and the first group meeting. During this period he got time to think about his decision to give up smoking and also to prepare himself by decreasing his consumption and set his mind on giving up smoking.

When M 63 was tempted to smoke he chewed nicotine chewing gum or ordinary chewing gum. He felt that he had given a promise to the people at the clinic to quit smoking and when he felt tempted to smoke he made himself remember this promise. He saw the promise as a moral law not to be broken. He made it his goal to fulfill this promise.

Another thing which helped M 63 not to smoke was that he felt he kept an eye on his health when he did not smoke. He thought he could live a couple of years longer if he did not smoke.

M 63 took up smoking later when a close relative died. However, he smoked rather little (15-20 cigarettes in a month) and was still trying to quit.

F 28, F 28 smoked 15-20 cigarettes per day when she decided to give up smoking.

F 28 had her first volitional breakdown 15 days after having given up smoking. The situation was as follows. She was alone at a party since her fiancée was away. She had some wine and felt very tempted to smoke, but resisted. Then one of her friends asked her if she wanted to be godmother of her friend’s child. This made her think of a personal problem, and she became depressed. She then had a cigarette “to celebrate the situation (‘the offer’),” as she said to the others but also to comfort herself. She also said to herself that “It has been so easy to stop smoking so one cigarette will not harm my attempt to give up smoking.” Later the same evening she had two more cigarettes. She felt that she had already failed and she said to herself: “If I have taken one I might as well take another. But I am only going to smoke tonight.”

Seventeen days later she smoked again. This time she was away from home on a journey on official business and attended a party. She felt compelled to attend the party, in spite of being very tired and she had really preferred not to go. She had a discussion with herself about whether she would smoke or not. She told herself that if she smoked she would have at least some fun that evening. She felt that she could afford allowing herself a cigarette in a situation she felt was both boring and stressful. At the same time she also thought about the group at the clinic and this made her abstain from smoking for a while, because she knew that it could be painful to have to admit to the others that she had smoked. Then she told herself that the decision to give up smoking was her personal problem and she felt that she wanted to protest against the group decision not to smoke. She devaluated the group and the group leader.

F 28 smoked a third time ten days later. This was also in connection with a party when she had been drinking some alcohol. She had been tempted to smoke the whole week because of much stress at her job, but she had resisted. At the party she thought a lot about whether to smoke or not. She felt that she could not stop thinking about smoking and therefore could not enjoy herself. In order to have a nice time she finally smoked a cigarette “to celebrate the return of spring”. She smoked another cigarette a little later “because if you have taken one, you might as well take another”. She, however, made up her mind to smoke only that evening.

F 28 had some techniques for resisting. One of them was using nicotine chewing gum, another was pushing away the thought of smoking by telling herself that she had given up smoking.

After her relapses she used to say to herself: “I have given up smoking and besides it did not taste well when I smoked.” In stressful and tempting situations when she normally would have smoked, she told herself that the situation would not change if she took a cigarette. F 28 also kept thoughts about smoking away by getting involved in various activities. Because she did not know what to do with her hands when being passive, e.g., in front of the television set, she had taken up knitting to prevent herself from smoking.

Four months later F 28 reported that she smoked occasionally, mostly at parties or when she was under stress. She considered it possible to smoke a little now and then without reaching her previous level of consumption.

F 55. F 55 smoked about 10-15 cigarettes per day on a weekend and about 5-6 cigarettes on a weekday.

F 55 did not enter the group treatment because her work made it impossible for her to be free at daytime when the group had its meetings.

F 55 took up smoking again six weeks after having quit. The situation was as follows. She was in hospital and had an X-ray of her throat. The doctor told her that her bad cough had been due to an infection and probably not to smoking, which she had been told earlier. The same evening she was shaky and nervous. When she could not fall asleep she got an impulse to take a cigarette. She smoked half a cigarette but said to herself that she wanted to give up smoking and did not want to take it up again. The next evening, however, she could not resist to smoke another half a cigarette. She felt it easier to take this cigarette, because she had already taken one the night before. She told herself that “It could not be so dangerous to smoke just half a cigarette”. She also thought that since her cough had probably not been due to smoking, it could not be too dangerous to start smoking again, since she was going to smoke less cigarettes per day than she used to. For a week she smoked a cigarette every night, but then she increased her consumption to 2-3 cigarettes every night.

F 55 felt very tempted to smoke during the six weeks that she abstained from smoking. To fight this temptation she would eat candy and food and tell herself not to smoke. She also used nicotine chewing gum. The bad cough helped her abstain from smoking, since it frightened her very much.

F 19. F 19 smoked about 20 cigarettes per day when she started on her attempt to give up smoking.

F 19 took up smoking again very quickly so she never participated in the group treatment. She had her first cigarette at a time when she was very much tempted to smoke. She worked hard to find an excuse to smoke. The excuse she found was “I can very well smoke a few
**Table 1. A summary of data on volitional breakdowns**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number of breakdowns</th>
<th>Mood pressure</th>
<th>Type of stress</th>
<th>Examples of reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>F 29</td>
<td>0</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>M 55</td>
<td>0</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>M 47</td>
<td>0</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>F 30</td>
<td>1</td>
<td>Yes</td>
<td>Sad, very upset</td>
<td>Suppression</td>
</tr>
<tr>
<td>M 43</td>
<td>1</td>
<td>Yes</td>
<td>?</td>
<td>Delay of attempt</td>
</tr>
<tr>
<td>M 63</td>
<td>2</td>
<td>Yes, both times</td>
<td>Strong desire to smoke</td>
<td></td>
</tr>
<tr>
<td>F 28</td>
<td>3</td>
<td>Yes, all 3 times</td>
<td>Depressed</td>
<td>(a) Self deception (“It is so easy to quit, one cigarette will not harm”)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bored</td>
<td>(b) Self deception (“I decide, not the quit smoking group”)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tense</td>
<td>(c) Self deception (“Celebrate the return of the spring”)</td>
</tr>
<tr>
<td>F 55</td>
<td>?</td>
<td>(a) Yes</td>
<td>Tense</td>
<td>(a) Tense</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) ?</td>
<td></td>
<td>(b) Revised strategy (“It could not be so dangerous to smoke just half a cigarette”)</td>
</tr>
<tr>
<td>F 19</td>
<td>?</td>
<td>Yes</td>
<td>Strong desire to smoke</td>
<td>Revised goal (“Better to smoke just a few than many”)</td>
</tr>
<tr>
<td>M 31</td>
<td>?</td>
<td>Yes</td>
<td>Tired, irritated</td>
<td>Suppression (“It just happened”)</td>
</tr>
</tbody>
</table>

* Question marks indicate that the interview gave insufficient information on a special issue.
* No indication of type of stress; however, this person had consumed a considerable amount of alcohol.
* The subject gave up the attempt to quit smoking.

Cigarettes per day. It is better doing so than to smoke a whole pack of cigarettes per day."

F 19 succeeded in keeping her consumption as low as 3-4 cigarettes per day for about 7 weeks with the exception of some occasions when she was out having a good time with some friends. However, gradually she increased her consumption and started smoking as she had done before. This happened when she was on a sick leave from her job and was idle at home. She then “forgot herself and took up smoking”.

F 19 did not use any specific technique to prevent herself from smoking. She only noticed that it was much more difficult for her to abstain from smoking when she was passive and easier when she was active.

M 31. M 31 smoked 60 cigarettes per day when he decided to give up smoking.

M 31 did not succeed in giving up smoking at any time during the period of six weeks. However, he did succeed in decreasing his consumption to less than 10 cigarettes per day. He felt he had to have these cigarettes to stay in mental balance. He made several attempts to give up smoking altogether but he did not succeed. M 31 tried to give up smoking after the first interview. He started to smoke again the same evening, when he was driving a car for a long distance. When he became tired after a couple of hours of driving at night he took a cigarette and lit it. “It only happened. I did not even think of what I was doing.” Later the same night M 31 smoked several cigarettes. “The more tired I felt the more cigarettes I smoked.” He chewed nicotine chewing gum and ate an apple in order to avoid smoking. This did not decrease his temptation to smoke. Instead he felt irritated.

M 31 had some ideas about how to resist. He found it easier to resist when he was alone and active. When people offered him cigarettes he decided to accept only cigarettes that he did not like. He would then only smoke a few puffs and then throw the cigarette away. When he felt tempted at his work, he would either become active doing something, talk with somebody, or read a newspaper to keep the thought of smoking away. Also when he was active in some task and wanted to smoke, he would tell himself that he would wait to smoke until he had completed his task. This could mean a delay of smoking for several hours. He also felt it was important not to have direct access to cigarettes. He would therefore put his cigarettes in a place where he seldom were. He needed, however, to feel that he could get cigarettes when he wanted them, because being completely out of cigarettes once had led to a panic. And when M 31 had access to cigarettes “it was easy to take one”.

**A summary of results.** In Table 1 there is a summary of the results concerning volitional breakdowns. With one or two exceptions—mostly in cases where information was hard to obtain—the results are in accordance with the theory. Breakdowns occurred under emotional stress and they were preceded by distorted reasoning.

The subjects reported using a large number of techniques to avoid or resist temptations. Of special interest here are techniques to resist temptation.

A rough classification of techniques is given in Table 2. Only some of the categories are of interest.
Table 2. A summary of techniques used in trying to quit smoking

The table gives the number of techniques in each category

<table>
<thead>
<tr>
<th>Subject</th>
<th>M*</th>
<th>Att*</th>
<th>Sub*</th>
<th>Reinf*</th>
<th>Prep*</th>
<th>Hab*</th>
<th>Part*</th>
<th>Act*</th>
<th>Σ</th>
</tr>
</thead>
<tbody>
<tr>
<td>F 29</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>M 55</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>M 47</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>F 30</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>M 43</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>3</td>
<td>1</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>M 63</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>F 28</td>
<td>2</td>
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<td></td>
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<td>1</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>F 55</td>
<td>1</td>
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* Setting up motivation conditions, thinking of motives. Numbers within parenthesis denote the number of motives relevant for self esteem. Only motives mentioned as important during the phase following the decision to quit are scored here.

* Pushing away tempting thoughts, emphasize decision.

* Substitutes, e.g., chewing gum.

* Self reinforcement.

* Preparation for quitting.

* Breaking habits, avoiding difficult situations.

* Partial goal strategy.

* Pursue some activity in tempting situations.

The use of substitutes, self reinforcement, breaking habits and avoiding difficult situations are all techniques of some value, but we will concentrate on how to resist temptation actually present.

Several subjects mentioned the importance of preparation to obtain a mental set adequate for quitting. The decision itself and its commitments, then, for some subjects may have served as an important regulating factor, possibly because of its efficiency in motivating the subject. One subject mentioned the importance of making cautious, partial commitments only.

Some subjects reported they would “push away” the thought of smoking; one subject stressed the importance of first carefully observing the thought, then pushing it away and starting to think of something else. Another subject reported that she would try to create a feeling of failure following or thinking of a relapse. In several cases subjects also reported emphasizing their intentions and thinking of reasons for quitting.

**DISCUSSION**

The observations reported here strongly supported the generality of the results and analyses reported by Sjöberg & Johnson (1976) concerning volitional breakdowns. Similar results were also obtained in studies of obese patients (Sjöberg & Persson, 1977) and of alcoholics (Sjöberg, Samsonowitz & Olsson, 1978). In particular, we emphasize that, in the present approach, decisions are made subsequently to a process of low quality reasoning. Toda (1977) suggested a reversed time sequence: first decision and then finding excuses. This conception is, however, not in accordance with the present data and it seems to need a different, and somewhat more far-fetched, definition of decision than the straightforward, phenomenologically based, definition used here.

Substitutes, breaking habits, and changing external conditions, self reinforcement, and proper preparation probably all help in quitting smoking. They do so largely by helping a subject to avoid temptations. Once the temptation is there, he must, however, use some technique to fight the destructive impulse. Our subjects gave some hints about what it means to fight an impulse in this respect. The main steps are: (a) becoming aware of the danger, (b) reinforcing the intention, (c) bringing to mind various reasons for quitting, and (d) doing something else.

A possibly optimal set of techniques might look like this:

Preparation in general:

1. Prepare for the decision to quit, get used to the thought. Decrease consumption.
(2) Find good reasons to quit; in particular tie in with your self esteem motives. Consider the health risks of smoking. Inform others about your attempt.

(3) Plan ahead to break habits and avoid tempting situations; punish yourself for failure and reward yourself for success. Be prepared to find that some motives vanish soon after you have quit.

Preparation for specific tempting situations:
(1) Observe the desire to smoke.
(2) Tell yourself: No! I have quit!
(3) Think of reasons not to smoke.
(4) Try to imagine how bad you would feel if you failed.
(5) Do something else or think about something else.

Why are these mental acts efficient and what is their character? To keep an action going in the face of conflicting wishes one needs to invest the action with energy. This energy may have its source either in values or in emotions that make the action attractive or alternative actions aversive. By a relevant choice of values (e.g., self esteem values) and wishes one may, in this way, invest the action with the needed energy. Alternatively one may invest mental energy in some other action and hope for the destructive impulse to vanish by itself. This will be necessary in most cases since the active fight of conflicting wishes is absorbing and unpleasant.

The regulation of action includes decision making, but this is only one aspect. Possibly it is also a somewhat peculiar aspect since so much recent work on decision making attempts to regard it as solely an example of information processing, or judgment. In this report we have pointed to the necessity and difficulty of sustaining to a given action in the phase of conflicting wishes as a central problem in the regulation of action. It is our opinion that the study of action must deal with the mental acts that enable the person to emphasize an action or to switch to another action. These acts are not cognitive—they process energy rather than information.

REFERENCES

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