

# 婦女勞動力參與及教育程度 對生育力之影響重估

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婦女之參與勞動及子女養育雙重任務之衝突，在進步國家中之研究證實對其生育力有抑制之作用。故工作經驗愈多者，其子女數亦愈少。然而研究落後國家婦女之勞動參與及生育力間之關係，並無一致之發現。或謂雙重任務之衝突仍然存在，故參與勞動者，其生育力顯然較一般為低；或謂無衝突存在，因在傳統式舊家庭中，子女之照顧養育可由父母以外之家人或親朋代勞，以致不影響其工作意願，因此其生育力變化不大，或沒有變化。本研究報告根據台灣地區六十五年子女價值觀念調查之最新資料分析台灣地區有偶婦女之勞動力參與和生育力間的關係，得知前者對後者之影響極微，而以教育程度、都市化等社會經濟因素之影響仍然較大。故建議值此人口成長率回升之際，除繼續加強學校人口教育宣導家庭計畫外，應鼓勵年輕婦女接受更高級之正規學校教育，以抑制其將來之生育期望，進而減輕台灣人口之壓力。

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**An Analysis of the Content and Strategy of Family  
Planning Radio Programs in Taiwan, 1969-1973\***

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There are two approaches in dealing with the communication behavior of the family planning communicator. One is the study of the communicator per se, such as his value system, concept and attitude towards family planning, perception of the population policy and the audience, etc. Another is an examination of the messages produced by the communicator and thus, in turn, the making of inferences about the communicator based on his product which is to be disseminated to his target audience. This paper will focus on the latter.<sup>1</sup> The scope of study will be limited to the analysis of message content and communication strategies utilized in family radio programs in Taiwan. The reason for choosing the radio is that it was the most important mass media channel used by the Taiwanese family planning communicator, at least in the early years of public information campaign.

**1. PREVIOUS RESEARCH**

A content analysis of newspaper articles on family planning in the Philippines shows that the most frequently mentioned topics are birth control methods, family planning programs and birth control issues. Among other topics are family planning and the church, sociological factors,

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family planning communication and research, legal aspects and government policy. Jazmines' rough classification of birth control methods in the newspaper articles reveals that it is dominated by the pill, followed by rhythm and intrauterine devices (IUD).<sup>2</sup>

Analyzing information campaign materials for family planning in some Asian countries, Alfonso's study indicates that method takes a back seat to motivation in all the nineteen leaflets and two pamphlets examined. On the matter of contraceptive methods, content on the traditional methods is nil in the pamphlets and very negligible in the leaflets. Among the specific categories of motivational themes, "family welfare" is top in both dimensions of low-fertility and high-fertility value orientations in all leaflets and pamphlets in the sample. At the same time, in both media, the advantages of certain contraceptive methods far outweigh the disadvantages in the promotive paragraphs.<sup>3</sup>

In a comparison of the findings from the Philippines and other Asian data, using only leaflets and pamphlets, Alfonso finds that, on the whole, motivation is used to a greater extent than method in information campaign materials in both places. On the matter of specific categories of themes, "family welfare" consistently tops all low-fertility themes in both the Philippines and other Asian leaflets and pamphlets. On the type of contraceptive method, the Asian materials apparently have no use for the traditional methods; the Philippines' gives play to rhythm. Of the modern methods, the mechanical is always first among all others in both the Philippines and other Asian leaflets and pamphlets.<sup>4</sup>

Cort and Finnigan examine 23 developing countries' family planning themes and say that:

Nations with family planning programs usually adopt central themes to help promote acceptance or to gain support for the general philosophy of the program. These themes are often transformed into short, catchy slogans which are not merely cute phrases, but policy statements.<sup>5</sup>

They also find that the most common themes are the assertions that

the practice of family planning increases the happiness of the family and the idea of reproductive freedom. Furthermore, more than half of the nations surveyed use non-specific slogans without any reference to spacing or having few children.<sup>6</sup>

In a case study on the examination of message strategy, Harrison analyzes over 200 family planning posters from more than 20 countries and concludes that some particular strategies have been tried (by family planning communicators of respective countries). His major findings are as follows:

- (1) The majority of the posters appear to be aimed at a general, to-whom-it-may-concern audience. However, some posters aim at special audiences such as couples, newlyweds, females, and males respectively.
- (2) The appeals tend to be quite global and abstract. Over half of the posters use positive appeals only. Some use negative appeals and some use both.
- (3) Many of the posters appear to be designed for the "awareness" stage of adoption. Some give suggestions for getting more information and some ask for action such as "use the pill" (or the loop, or condoms).<sup>7</sup>

Within the field of family planning communication, as Schramm puts it, we are finally in a position to "turn our attention from tactics to strategies." He continues:

..... in the next ten years, as we master the necessary skills of getting the booklet printed, assigning the field staff, getting the right tone into a spot announcement, we can afford time to think about the strategies we are using.<sup>8</sup>

Underlying the content-oriented approach is the assumption that by identifying certain communication strategies and relating them to the prevailing characteristics of the target audience, we may be able to estimate the effectiveness of communication to some extent, other things being equal. Some evidence, mostly obtained from communication laboratory

settings, has shown that some strategies are more effective than others in conveying messages or persuading people under certain circumstances to certain classes of audience.

The case in communication strategy would also hold true for message content. Rogers believes:

... that our present lack of understanding of the semantics of family planning is one important impediment to successful family planning communication. Perhaps if we knew how our word-symbols are perceived by our clients, our family planning programs would be more effective than they presently seem to be.<sup>9</sup>

A content analysis seems to be able to serve both purposes of understanding the message content and the communication strategies in Taiwan's family planning programs. Before giving justifications for analyzing family planning radio programs in Taiwan and the questions to be addressed, it is necessary to describe briefly Taiwan's family planning radio programs.

## 2. THE SETTING AND THE OBJECTIVES

The family planning program in the Province of Taiwan started on an island-wide basis in 1964 and was declared a national policy in 1968 when the Executive Yuan (the Cabinet) confirmed the population policy. The goal was to reduce the natural increase rate of population from 3 per cent in 1963 to less than 2 per cent in 1973. In 1969, the Taiwan Provincial Health Department established the Institute of Family Planning for family planning information, education, communication (IEC) and service.

Prior to the announcement of the official policy, information about family planning was brought to the women primarily by full-time family planning fieldworkers in a face-to-face setting. The use of mass media for family planning was limited because of the lack of both policy and budget. Mass communication efforts began in early 1966. Radio spots, posters in buses and trains, films and slides at theaters, advertisements on match



boxes, pamphlets, newspapers and magazines and special mailings were used extensively as the value of family planning program became more apparent and more budget was available.

A survey was conducted in Taiwan's second most highly-populated city of Kaohsiung in 1967 in order to determine which public information channels reached the largest audience to enable a more effective planning of the media campaign. It became clear from this study that public information channels, particularly radio, could get the message to the women at a comparatively low cost. The survey showed that 72 per cent of all married women aged 20-44 was reached by radio.<sup>10</sup> Radio was then extensively used.

There are 92 radio stations, of which 34 are part of 4 networks. It was estimated that there were 2.5 million radio sets, or 1 radio set per 5 persons, at the end of 1969. The approach was brief announcements and skits. About 2,600 skits and spots were played monthly.<sup>11</sup> Even though some of the programs were broadcast at no cost, expenditure on buying other radio time in 1969 was U.S.\$30,000, representing 60 per cent of the total IEC budget or 12 per cent of the total family planning budget.<sup>12</sup>

There were dramatic changes in exposure to mass media in the period covered between KAP II and KAP III (1967-1970). Television viewing increased sharply and apparently made great inroads into all the other media. As Freedman observed, "undoubtedly, the unusual rapidity of the changes in mass media utilization at this particular time stems from the advent of television."<sup>13</sup> A comparison of the two surveys shows a considerable decrease in exposure to radio. All strata of the population shared in the decreased exposure to radio. The decline is a little sharper for respondents who are younger but, in general, every group, by age, number of children, education and area of residence has experienced the same general decline in radio listening.<sup>14</sup> Meanwhile, the largest proportionate gains in television watchers during this period were among the rural and less

educated groups. The results suggested that the family planning program "should give more consideration to the use of TV in addition to radio as a channel to reach women, and in particular, to those who did not want any more children but were not practicing contraception."<sup>15</sup>

This statement was soon reflected in the policy-making of the public information campaign as expenditure on radio programs was cut from U.S.\$ 30,000 in 1969 to U.S.\$11,000 in 1971, the money spent on television programs was increased from U.S.\$150 to U.S.\$38,000 during the same period of time, while the total IEC budget was doubled.<sup>16</sup>

Nevertheless, there are some indirect evidence, mainly derived from personal observation and the impression about communication policy in population, concerning what the major emphasis is in terms of the "approach" in various public information channels. Cernada and Sun indicated that the general approach until 1971 was on contraceptive methods, providing specific information about available contraceptive -- such as cost, source, advantages -- as to promote awareness of the audience. Thereafter more emphasis was placed on smaller family, two-child themes and reasons for the choice.<sup>17</sup>

An exploratory study by way of analyzing the content of family planning radio programs can serve not only in clarifying what and how the message was communicated through radio, but also generating potential hypotheses for future studies in this direction. The study is not designed for testing hypotheses because more information is needed before communication effect can be estimated by relating the characteristics of the message to the characteristics of the audience. To put it in Katz and Lazarsfeld's words, content -- in the sense of form, presentation, language, etc. -- is one of the intervening variables in the mass communication process.<sup>18</sup>

Generally, the purpose of the present study is to obtain a better understanding of how radio has been used in Taiwan in terms of the message content and presentation strategies.

Specifically, the questions to be addressed are listed as follows:

1. What are the main themes of radio message?
2. How are these themes associated with each other? What are the patterns of presentation?
3. What are the main communication strategies used in the radio message?
4. How are these communication strategies associated with each other? What are the patterns of presentation?

### 3. CONTINGENCY ANALYSIS

Of all the potential source or receiver characteristics which might be inferred from the content of their communications, we will here mention only the "association structure."<sup>19</sup> Here we will be interested in what message content or communication strategy tends to be associated with any given message content or communication strategy in the source's thinking to greater-than- or less-than-chance degrees. The indicators are the contingencies between content items in his messages, regardless of either frequency of usage or evaluation.

"Contingency analysis" is defined both by Osgood<sup>20</sup> and Budd<sup>21</sup> as a method of testing the association structure in a message source, that is, what ideas are related to the source, by the content contingencies, that is, the cooccurrences of symbols. The stronger the association between two ideas in the thinking of the source, the more regularly will the occurrence of one be the condition for the occurrence of the other.

Osgood refers the origin of contingency method as saying:

If there is any content analysis technique which has a defensible psychological rationale it is the contingency method. It is anchored to the principles of association which were noted by Aristotle, elaborated by the British Empiricists, and made an integral part of most modern learning theories. On such grounds it seems reasonable to assume that greater-than-chance contingencies of items in messages would be indicative of associations in the thinking of the source.<sup>22</sup>



The procedure of contingency analysis will be stated later. Here it is necessary to turn our attention to a theoretical front: the representational model.

#### 4. THE REPRESENTATIONAL MODEL

The term "representational model", as opposed to "instrumental model" which emphasizes the instrumental function of language in need or drive gratification in the implementation of motives and attitudes, etc., is used to describe the approach which assumes that behavioral states in a speaker are necessarily directly represented in the symbolic content of messages he emits. The investigator assumes that words in the message are valid indicators of intentions, irrespective of circumstance. Inferences regarding intentions, expectations, and situational factors are drawn directly from attributes of the message.<sup>23</sup>

Beyond this simple matter of face validity, however, Mahl sees a more fundamental and pervasive implication of the representational viewpoint: the implicit assumption that "there is an isomorphic relation between behavioral states and quantitative properties of lexical content. This is illustrated in the frequency approaches to manifest content which assume, for example, that the more units of content there are in a language sample about an emotion, the greater the intensity of that emotion in the speaker. The assumption of isomorphism also underlies those interpretations of contingency analyses which conclude that contingencies in messages directly reflect behavioral associations."<sup>24</sup>

With this representational relation in mind, we should do two things before going into field situation. Firstly, we will restrict our analysis to the messages themselves, ignoring other elements such as the situations in which the utterances were made. Secondly, we will restrict our analysis to the lexical content of the messages, that is, the scripts of family planning radio programs, so as to exclude all effects in the vocal aspects of the utterances.

## 5. METHODS

Irrespective of research methods or orientations, there are five principal steps in content-analyzing, namely: sampling, selection of categories, selection of units, coding and analyzing.

Purposive random sampling will be used here. By "purposive" we mean:

(1) The samples will be selected from family planning radio programs produced by the Institute of Family Planning under the Taiwan Provincial Health Department. Most of the 94 radio stations in Taiwan are operating on relatively small-scale basis with no regular station-produced family planning programs. Some stations broadcast family planning messages in the form of "news" and "radio forums", sporadically. The Institute produces virtually all radio programs which are distributed Island-wide to most of the radio stations. Thus it would be feasible to limit our population to programs produced by the Institute without losing representativeness.

(2) Messages released by the Institute in the form of "news" will be excluded because of insignificant number.

(3) The time span for sampling is from 1969, after the population policy was officially confirmed, to August 1973. The number of programs produced before 1969 was insignificant. However, some of the scripts fall within our sampling period might be unobtainable simply because they are missing from the file.

Of those available, scripts were first classified into "spots" and "skits". After reviewing all the scripts, it was found that two-minute length, roughly equaling to 400 words when read, is a good yardstick for classification because most programs either fall within one-minute or ten-minute categories. This is a somewhat arbitrary criterion, though.

One-fifth of the spots and one-third of the skits were then randomly selected from the two sub-populations, as shown in Table 1.

There are 101 spots sampled. They are primarily done by straight narration. Only 5 per cent and 2 per cent of the samples are prepared in the form of "dialogue" and "both" respectively. Less than 4 per cent has sound effects other than mere "music" marked in the scripts without special reference to what type of music. Question-and-answer is not a popular format and a majority of spot announcements are one-minute or less in length. Most of the spots were produced during the years 1970-71 when more budget was available for the first time in public information campaign.

Table 1. Nature of the Sample

	Spot		Skit	
	Number	(%)	Number	(%)
Narration	94	94.1	1	2.9
Dialogue	5	5.0	26	74.3
Both	2	1.9	8	22.8
Sound effect	4	3.7	29	82.9
No sound effect	97	96.3	6	17.1
Question-and-answer	3	3.0	4	11.4
Non-question-and-answer	98	97.0	31	88.6
One-minute	98	97.0	-	-
Two-minute	3	3.0	3	8.6
Five-minute	-	-	3	8.6
Ten-minute	-	-	26	74.2
Twenty-minute	-	-	3	8.6
1969	2	1.9	-	-
1970	56	55.5	9	25.7
1971	43	42.6	1	2.9
1972	-	-	12	34.3
1973	-	-	13	37.1
	N=101		N=35	

There are 35 skits sampled. Most of the skits are prepared like ordinary radio drama with conversations going all way through. But about 23 per cent of the skits uses both narration and dialogue and it is found that narration is placed either at the very beginning of the script to give some background, or at the end of the script to draw conclusion. About 83 per cent of the skits has sound effect such as the sound of knocking doors or whistling wind; the rest is marked "music" only without indicating the type of music to be used. About 11 per cent of the skits is in the question-and-answer format. A closer examination shows that these skits are longer spots and can be classified under the spots by an operational definition different from the one we performed, depending on the researcher's criterion.

Over 74 per cent of the skits falls into ten-minute category. Besides, Table 1 also shows that no spot was produced after 1971 but most skits in our sample were produced after that year. This fact gives rise to several questions. For instance, does the emphasis of radio programs on spot announcements in the early years of public information efforts, and the skits in recent years, have anything to do with existing communication policies? If it does, we may ask whether there will be a difference between the spots and skits in terms of message content and presentation strategies.

Here, as in all content analysis, the nature, number, and breadth of categories selected are determined by the analyst's purpose. Since we are interested in "what is said" and "how it is said" in the messages, our content categories will be selected around these two cores.

Two things were done before the "what is said" categories were chosen. Firstly, the entire texts of the sampled radio programs were read to find out what themes (will be defined in the next section) of family planning were actually stated in the radio scripts. Secondly, some empirical considerations, including readings on the theory and practice of family planning, were given to determine what normally should be said in case that

something important might be missing from the texts and could not be detected.

The "what is said" categories were listed as follows:

- (1) A smaller family is a happier family.
- (2) Spacing births.
- (3) Son preference is not necessary.
- (4) Considering family planning before getting married.
- (5) Getting married later.
- (6) 3-3-3-33 system.
- (7) Two children are just right.
- (8) Names of contraceptive methods.
- (9) Morality of family planning.
- (10) Limiting family size.
- (11) Termination of contraceptive usage.
- (12) Health reasons.
- (13) Economic reasons.
- (14) Education reasons.
- (15) Population problem.
- (16) Where to seek advice or contraceptives.
- (17) Giving more love to few children.
- (18) Improving the quality of life.
- (19) Stop having children.
- (20) Practicing family planning.
- (21) It's a burden to have more children.
- (22) The modern concept about family size.
- (23) Unfavorable effects on husband-wife relationship.
- (24) The emotional and physical demands on the parents.
- (25) Having baby later.
- (26) Family welfare.
- (27) The parents' physical looks.

On the matter of "how it is said" categories, the selection was based



mainly on tested persuasion principles and communication theories. Some observations and studies in family planning were also taken into account.

They are:

- (1) Method-oriented.
- (2) Information-oriented.
- (3) Immediate objectives.
- (4) Ultimate objectives.
- (5) One-sided.
- (6) Two-sided.
- (7) Emotional.
- (8) Rational.
- (9) Positive.
- (10) Negative.
- (11) Reward-appealing.
- (12) Fear-arousing.
- (13) Primacy effect.
- (14) Recency effect.
- (15) High source credibility.
- (16) Repetition.
- (17) Group conformity.
- (18) Evidence.
- (19) Conclusion drawing.
- (20) Conclusion explicit.
- (21) Conclusion implicit.
- (22) Climax ordering.
- (23) Anticlimax ordering.
- (24) Asking for actions.
- (25) Parents-oriented.
- (26) Children-oriented.
- (27) Men-oriented.
- (28) Women-oriented.

Each category was defined and, when desirable and feasible, examples given. It must be mentioned that, in both classes, categories are neither exhaustive nor mutually exclusive because codings are relied on the presence/absence of a particular theme or orientation. By and large, categories are selected arbitrarily.

For the "what is said" categories, the theme is used as a recording unit. A theme is a single assertion about a thought or an idea that conveys a single item of information. For the "how it is said" categories, item (the entire radio script) is used as a recording unit.

It may not be possible to classify a recording unit without some further reference to the context in which it appears. A context unit is the largest body of content that may be searched to characterize a recording unit. In this study, item is an ideal context unit for both types of categories.

With a list of the content categories, the coder inspects each item of the material and scores it in a coding sheet. Each column in the sheet represents a different item, or a piece of transcript, and each row a different content category. The coder notes merely the presence or absence of references to each content category. If category 1 is present in the text of item 1, category 1 is scored plus. If category 2 is absent in item 1, category 2 is scored minus. This procedure is continued until all categories are checked against item 1, the first script in the skit samples. Then we proceed to item 2, and so on. A skit-what raw data matrix is thus constructed.

After checking all samples in the "what is said" categories "how it is said" categories are checked against the same set of samples, beginning from item 1. A skit-how raw data matrix is constructed. The same procedure is applied also to the spot samples, yielding two raw data matrixes: spot-what and spot-how.

The contingency matrix provides the information necessary for comparing expected or chance going-togetherness of categories with actual

obtained going-togetherness. We find the probabilities or relative rates of occurrence for each content category in the column labeled "per cent" at the right of the raw data matrix. The expected or chance contingency for each pair of rows is obtained by simply multiplying together the percentages of occurrence of these two categories. Extending this to all possible pairs of categories, we fill in the upper right cells of the contingency matrix.

In the corresponding lower left cells of this matrix, we then enter the actual or obtained contingencies. These are simply the percentages of items where plusses occur in both of the rows being tested. In the obtained contingency is greater than the corresponding expected, i.e., the value of lower left cell is greater than the value of corresponding upper right cell, these events are co-occurring more often than by chance. Otherwise, they are co-occurring less often than by chance. The contingencies are expressed as ratios which have certain of the properties of correlation coefficients. The constructed matrix of relations can then be treated so as to yield a cluster analysis.

The significance of the deviation of any obtained contingency from the expected value is computed using the standard error of a percentage. It gives us an estimate of how much an obtained percentage may be expected to vary about its expected value.

The coefficients of reliability<sup>35</sup> between coders range from 80.5 to 53.9 per cent. This range is roughly acceptable to most content analysts. A coefficient below the lower limit of 50 per cent would be considered as unreliable.

Spot-what yields the highest reliability with an average coefficient of 75.4 and spot-how the lowest, with an average coefficient of 58.1. Taking all three judges together, the composite reliability coefficient ranges from 90.2 to 80.9, again with spot-what leading the highest coefficient and spot-how the lowest.

## 6. THE RESULTS

The presentation of the results is divided into two sections, namely, "what is said" and "how it is said". In either section, the distribution of themes is given first, followed by the association structure of themes and some manifest inferences based on the contingency matrixes.

## 7. WHAT IS SAID

### (1) The Distribution of Themes

Since our coding is based on the presence/absence of a particular theme in a particular item of script, the number of themes is simply not a frequency-counting. Rather, it represents how many items of the scripts contain such a theme, regardless of whether this theme appears once or more in a particular item.

Table 2 indicates the distribution of "what is said" themes. Spots are dominated by the theme "Meth", the names of contraceptive methods are mentioned in 47 out of the 101 scripts selected, representing 46.5 per cent of the total samples. It is then followed by "Wher", where to seek advice or contraceptives, and "Prac", practicing family planning, each shows up in about one-fifth of the total samples separately. "Health reasons", "economic reasons" and "education reasons" are among the themes mentioned relatively often.

Such themes as "getting married later", "morality of family planning", "termination of contraceptive usage" and "stop having children" are never said in spot samples. Among those ideas said less often are "a smaller family is a happier family", "3-3-3-33 system", "population problem", "giving more love to few children", and some other modern concepts of family life as well as parents-children relationships.

The subject matter of the skits is relatively emphasized on the following themes or ideas: "the emotional and physical demands on the

Table 2. Distribution of Themes--"What"

Code & Theme	Spot (N=101)		Skit (N=35)	
	Number	%	Number	%
1Happ	3	3.0	5	14.3
2Spac	7	6.9	6	17.1
3Somp	2	2.0	10	28.5
4Bema	6	5.9	7	20.0
5Mala	-	-	2	5.7
63-3	1	1.0	1	2.9
7Two	3	3.0	10	28.5
8Meth	47	46.5	10	28.5
9Mora	-	-	4	11.4
10Size	7	6.9	8	22.8
11Term	-	-	-	-
12Heal	16	15.8	12	34.2
13Econ	11	10.9	14	40.0
14Edu	13	12.9	14	40.0
15Pop	2	2.0	5	14.3
16Wher	22	21.8	12	34.2
17Love	1	1.0	5	14.3
18Qual	3	3.0	6	17.1
19Stop	-	-	6	17.1
20Prac	20	19.8	12	34.2
21Burd	5	5.0	5	14.3
22Mod	3	3.0	13	37.1
23Huw	2	2.0	9	25.7
24Emop	3	3.0	15	42.9
25Lat	3	3.0	5	14.3
26Welf	8	7.9	5	14.3
27Look	2	2.0	1	2.9
Total Themes	190		201	

parents", "economic reasons", "education reasons" and "the modern concept about family size". The theme "termination of contraceptive usage" is not present in any of the 35 skit samples. Only one item is devoted to "3-3-3-33 system", meaning have first child three years after getting married, have three children with intervals of three years each and stop having children at age 33.

A comparison of the spots and skits reveals several points. Firstly,



of all the 101 spots sampled, there are only 190 themes recorded; but there are 201 themes recorded in the 35 skits. This is because the length of spot scripts is much shorter than the skit ones although the number of spots is more, as shown in Table 1. Secondly, the spots are dominated by "names of the contraceptive methods", "where to seek advice or contraceptives" and "practicing family planning" themes. This holds true only to a lesser degree for the skits. It could be that these three themes contain basic family planning ideas the communicator wants to use to appeal to the audience's awareness in simple, straight messages in early years of public information campaign. In other words, the nature of the radio programs, that is, spot or skit, might have something to do with the subject matter of the programs. It is in this connection that there was practically no skit produced by the Institute of Family Planning at the early stage of Taiwan's family planning communication. As the program evolved, skits were available and, unlike spots, relatively more themes were devoted to higher cognitive level of subject matter such as "modern concept of family size" and "emotional and physical demands on the parents".

Thirdly, "health reasons", "economic reasons" and "education reasons" are prevailing themes in both the spots and skits. Fourthly, "termination of contraceptive usage" is not said in both cases. It's possible that this theme is deliberately avoided to prevent unfavorable effects and it is replaced by synonyms in one way or another, e.g., the sentence "she stops using IUD" is replaced by "IUD doesn't fit so she turns to the pill", and thus is not recorded. Finally, contrary to some scholars' viewpoints, to mention Cort and Finnigan<sup>25</sup> and Kincaid<sup>26</sup> for example, "a smaller family is a happier family" and "the morality of family planning" are not central themes for persuading Taiwan's radio audience. This may be due to the nature of media and may need some elaboration here.

While it is commonly known that the print media have the advantage of being able to deal with both concrete and abstract concepts, radio appears to be more effective in presenting the concrete subject matter.

This viewpoint is supported by Taiwan's family planning radio programs which has less emphasis on the abstract themes such as "a smaller family is a happier family" and "the morality of family planning". Rather, it focuses on "names of contraceptive methods", "where to seek advice or contraceptives", and "practicing family planning". The latter are designed for the awareness stage of adoption and are identical with the themes Harrison found in an analysis of family planning posters.<sup>27</sup>

## (2) The Communication Patterns--Spot-What

Table 3 shows the association structures of "what is said" themes in spot samples. Theoretically, if the value of the lower left cell is larger than the value of corresponding upper right cell, the events are co-occurring more often than by chance, and vice versa. For instance, the value of column 1 and row 12 is .02 which is larger than .01 at the upper right corresponding cell, column 12 and row 1. This means the units of "a smaller family is a happier family" and "health reasons" are taking place together more often than by chance in the scripts sampled. The value of column 2 and row 8 in Table 3 is .01 which is smaller than .03 at the upper right corresponding cell, column 8 and row 2. This means the units of "spacing" and "names of contraceptive methods" are taking place together less often than by chance.

It is obvious that there are dozens of clusters, or association structures, can be drawn from a contingency matrix like this. What we are interested in is the third type of association structures which will tell us, taking all "what is said" categories as a whole, what themes would more likely to go together and how they are associated with each other.

Only major association patterns will be reported in subsequent cluster analysis. Two criteria are employed in diminishing and simplifying association patterns. First, the obtained value in the lower left cell must be larger than the expected value in the upper

Table 3. Spot-What Contingency Matrix

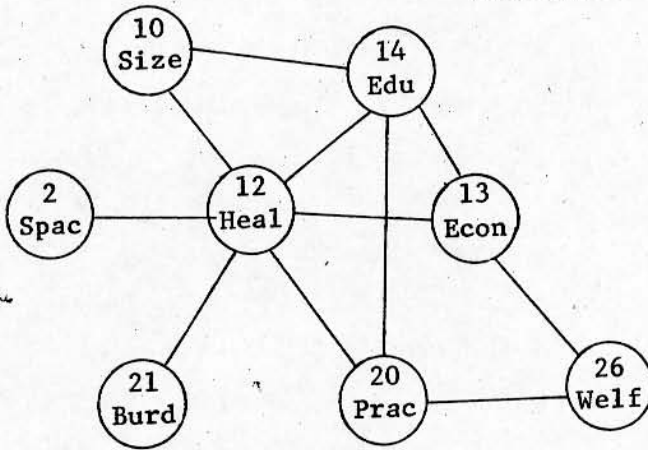
	1Happ	2Spac	3Somp	4Bema	5Mala	6 3-3	7Two	8Meth	9Mora	10Size	11Term	12Heal	13Econ
1Happ		0	0	0	0	0	0	.01	0	0	0	.01	0
2Spac	0		0	0	0	0	0	.03	0	.01	0	.01	.07
3Somp	0	0		0	0	0	0	.01	0	0	0	0	0
4Bema	0	0	0		0	0	0	.03	0	0	0	.01	.01
5Mala	0	0	0	0		0	0	0	0	0	0	0	0
6 3-3	0	0	0	0	0		0	.01	0	0	0	0	0
7Two	0	0	.01	0	0	0		.01	0	0	0	.01	0
8Meth	0	.01	0	.02	0	0	.01		0	.03	0	.07	.05
9Mora	0	0	0	0	0	0	0	0		0	0	0	0
10Size	0	.01	0	0	0	0	0	.02	0		0	.01	.07
11Term	0	0	0	0	0	0	0	0	0	0		0	0
12Heal	.02	.04*	0	0	0	0	0	.03	0	.05*	0		.02
13Econ	.01	0	0	.01	0	0	0	0	0	.04	0	.06*	
14Educ	.01	.02	.01	0	0	0	.01	0	0	.04*	0	.07*	.06*
15Pop	0	0	0	0	0	0	0	.01	0	0	0	0	0
16Wher	.03	.04	.02	.04*	0	0	.01	.11	0	.03	0	0	.02
17Love	0	.01	0	0	0	0	0	0	0	0	0	.01	0
18Qual	0	0	0	0	0	0	0	0	0	.02	0	.02	.03
19Stop	0	0	0	0	0	0	0	0	0	0	0	0	0
20Prac	.02	.01	.02	.01	0	0	.01	.05	0	.01	0	.07*	.05
21Burd	.03	.03	0	.01	0	0	0	.01	0	.01	0	.04*	.01
22Mod	0	0	0	0	0	0	.01	0	0	0	0	.01	0
23Huwi	0	0	0	0	0	0	0	0	0	.01	0	.01	.01
24Emop	0	.01	0	0	0	0	0	0	0	0	0	.03	.01
25Lat	0	0	0	.01	0	0	0	.01	0	0	0	.01	.01
26Welf	0	0	0	.02	0	0	0	0	0	.01	0	.03	.04*
27Look	0	.01	0	0	0	0	0	0	0	0	0	.01	.01

\* Difference over .02 and significant at .05 level

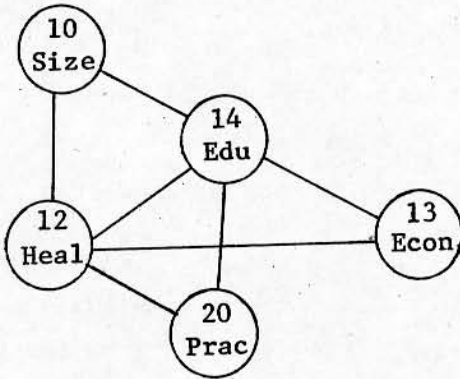
Table 3. (Continued) Spot-What Contingency Matrix

14Edu	15Pop	16Wher	17Love	18Qual	19Stop	20Prac	21Burd	22Mod	23Huw1	24Emop	25Lat	26Welf	27Look
0	0	.01	0	0	0	.01	0	0	0	0	0	0	0
.01	0	.02	0	0	0	.01	0	0	0	0	0	.01	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
.01	0	.01	0	0	0	.01	0	0	0	0	0	.01	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	.01	0	0	0	.01	0	0	0	0	0	0	0
.06	.01	.10	.01	.01	0	.09	.01	.01	.01	.01	.01	.04	.01
0	0	0	0	0	0	0	0	0	0	0	0	0	0
.01	0	.02	0	0	0	.01	0	0	0	0	0	.01	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
.02	0	.03	0	.01	0	.03	.01	.01	0	.01	.01	.01	0
.01	0	.02	0	0	0	.02	.01	0	0	0	0	.01	0
	0	.03	0	0	0	.03	.01	0	0	0	0	.01	0
0		0	0	0	0	0	0	0	0	0	0	0	0
.04	0		0	0	0	.04	.01	.01	0	.01	.01	.02	0
.01	0	0		0	0	0	0	0	0	0	0	0	0
.02	0	0	0		0	.01	0	0	0	0	0	0	0
0	0	0	0	0		0	0	0	0	0	0	0	0
.06*	.01	.08	0	.01	0		.01	.01	0	.01	.01	.02	0
.01	0	.03	.01	0	0	.01		0	0	0	0	0	0
.01	.01	.01	0	0	0	.01	0		0	0	0	0	0
0	0	0	0	0	0	.01	0	0		0	0	0	0
.01	0	0	0	0	0	.01	0	0	0		0	0	0
0	0	.01	0	0	0	0	.01	0	0	.01		0	0
.02	0	.02	0	.02	0	.06*	0	0	.01	0	0		0
.01	0	0	0	0	0	.02	0	0	0	0	0	.01	

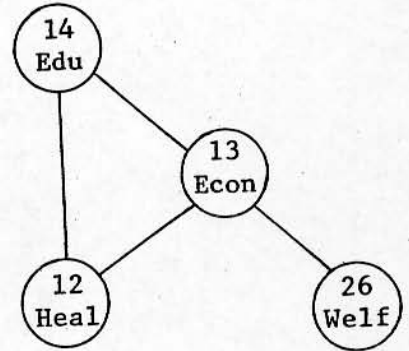
Pattern A



Pattern B



Pattern C



Pattern D

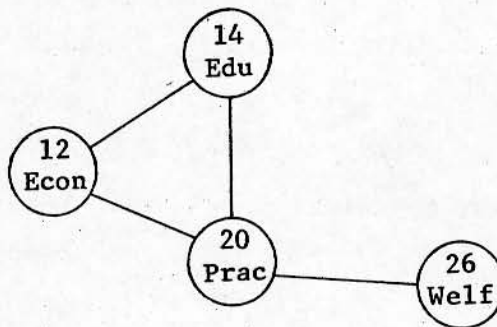


Figure 1 Spot-What Clusters



right cell by .02 or more. Second, the deviation of obtained contingency from the expected value must be significant at .05 level.

Figure 1 shows some of the association structures among categories of the spot samples. Pattern A contains the categories that meet the criteria mentioned above. It can easily be seen that the main theme said is 12Heal, referring to mother/child's health reasons as advocated for the adoption of family planning. When 12Heal is said, those themes tend to be associated with are 2Spac (spacing births), 21Burd (it's a burden to have more children), 20 Prac (practicing family planning), 13Econ (economic reasons), 14Edu (education reasons), and 10Size (limiting family size).

A closer look at this pattern reveals that although these themes are directly associated with 12Heal, 2Spac and 21Burd are said in the message only when 12Heal is present; however, 20Prac, 13Econ, 14Edu and 10Size are themselves associated with other themes and can be present even when 12Heal is absent. This is the case for 26Welf (family welfare) whose presence is depended on the presence of 20Prac/13Econ and which is directly related with other themes in this pattern.

However, when themes in this cluster are present, it is unlikely that they are co-occurring with 4Bema (considering family planning before getting married) and 16Wher (where to seek advice or contraceptives) which form a small cluster independent of the main structure. In other words, 4Bema and 16Wher tend to be said together in a message while no other theme is associated. This general pattern, when broken down into sub-structures, tells many potential linkages among or between categories. Patterns B through D in Figure 1 are some of them.

Pattern B indicates that 14Edu tends to be associated with 10Size, 12Heal, 20Prac and 13Econ which, in turn, are co-occurring with one of other themes separately. It is inferred that the communicator often follows a "what-for what-why" pattern of communication by stating "prac-

ting family planning" to "limiting family size" and the reasons to do it. Pattern C and Pattern D show alternative approaches. 13Econ and 20Prac are associated with 26Welf which is dependent on them. In other words, the themes of "economic reasons" and "practicing family planning" are co-occurring with "education reasons" and "health reasons" on one hand, and with "family welfare" on the other, but "family welfare" clusters with "education reasons" and "health reasons" only when either "economic reasons" or "practicing family planning" is present.

In Pattern C, the "why" pattern, reasons for the adoption of family planning range from concrete ones (health, education and economic) to abstract (family welfare) with a simple logic linking between them: a success in domestic economy means family welfare. In Pattern D, the "what-why" pattern, the communicator seems to say that practicing family planning, besides other reasons, could lead to family welfare.

### (3) The Communication Patterns--Skit-What

Likewise, Table 4 shows the contingencies 1) of each pair of categories, 2) of a particular category across all other categories and 3) among all 27 categories, by comparing the obtained values in the lower-left cells with the expected values in the corresponding upper-right cells. Those values in the lower-left cells which are larger than the upper-right cells can be marked and are subject to cluster analysis.

There are many potential clusters which can be drawn from Table 4. Two arbitrary criteria are employed for clarity and simplicity: the obtained value must be larger than the expected value by .06 or more and the deviation of the obtained value from the expected value must be significant at .05 level.

Figure 2 reveals major association patterns about what is said in skit samples. The entire structure, unlike spot samples, is composed of four small clusters. It indicates that the length of skit samples does not necessarily correlate with the number of themes. A review of

the radio program scripts shows that the spots tend to contain a diversity of themes in a limited length while the skits tend to contain less themes in a longer length. To put it in another way, the communicator does not try to say many things in a given skit script; he concentrates intensively on a few themes instead.

Pattern A indicates that 2Spac (spacing births) is associated with 10Size (limiting family size). It is a "how" pattern which the communicator is advocating limiting family size by spacing births. Pattern B clusters two themes: 1Happ (a smaller family is a happier family) and 21-Burd (it's a burden to have more children). Note that the "why" pattern is composed of two concepts identical to one another, so is Pattern A, and is non-existent in the Chinese society. Pattern C is a "for what-why" form with 7Two (two children are just right), 19Stop (stop having children) and two rather abstract ideas--17Love (giving more love to few children) and 18Qual (improving the quality of life) clustering together. Pattern D is a "what" pattern characterized with themes 9Mora (the morality of family planning) and 22Mod (the modern concept about family size) aiming at changing the audience's values, beliefs, or attitudes.

Thus it is obvious that all four patterns have one thing in common: they are so designed to give, positively or negatively, certain information or concept within a particular message in one way or another. When the traditional values were attacked, they were mentioned without referring to the modern concept; when the themes of the modern concept about family life were mentioned, they were unlikely to be associated with less relevant ideas. It is also true that themes giving information do not interact with themes aiming to change the audience's values, beliefs, or attitudes.

#### (4) The Distribution of Strategies

Table 5 indicates the distribution of the "how it is said" categories. Our coding is, again, based on the presence/absence of a particular unit in mind. But unlike "what is said" where theme is used as a

Table 4. Skit-What Contingency Matrix

	1Happ	2Spac	3Somp	4Bema	5Mala	6 3-3	7Two	8Meth	9Mora	10Size	11Term	12Heal	13Econ
1Happ		.02	.04	.03	.01	.0	.04	.04	.02	.03	0	.05	.05
2Spac	.03		.05	.03	.01	.01	.05	.05	.02	.04	0	.06	.07
3Somp	0	.08		.06	.02	.01	.08	.08	.03	.06	0	.10	.11
4Bema	.06	.06	.03		.01	.01	.05	.05	.02	.04	0	.06	.08
5Mala	0	0	0	0		0	.02	.02	.01	.01	0	.02	.02
6 3-3	0	0	0	0	0		.01	.01	0	.01	0	.01	.01
7Two	.08	.06	.11	.08	0	.03		.08	.03	.06	0	.10	.11
8Meth	0	.06	.06	.03	0	0	.03		.03	.06	0	.10	.11
9Mora	.03	0	.06	.06	0	0	.03	0		.02	0	.04	.04
10Size	.06	.11*	.03	.06	0	0	.06	.03	0		0	.07	.09
11Term	0	0	0	0	0	0	0	0	0	0		0	0
12Heal	.03	.11	.17	0	0	.01	.11	.08	0	.11	0		.14
13Econ	.08	.08	.14	.08	0	0	.14	.11	.03	.11	0	.22	
14Edu	.11	.06	.08	.11	0	0	.19	.06	.06	.14	0	.14	.22
15Pop	.06	0	0	.03	0	0	.06	.03	.03	0	0	.03	.08
16Wher	.03	.08	.11	.11	0	.01	.06	.17	.06	.08	0	.17	.11
17Love	.03	0	.06	0	0	0	.06	0	.03	0	0	.06	.08
18Qual	.06	0	.08	.03	0	.01	.14*	0	.03	0	0	.06	.06
19Stop	.03	.03	.08	0	0	0	.06	.03	.03	0	0	.11	.08
20Prac	.06	.06	.08	.11	0	.01	.03	.08	.06	.03	0	.14	.11
21Burd	.08*	0	0	0	.03	0	.03	0	.03	.06	0	.08	.08
22Mod	.08	.06	.17	.03	.03	0	.14	.08	.11*	.03	0	.22	.22
23Huwi	.06	.03	.06	.03	.03	0	.06	.08	.03	.06	0	.08	.14
24Emop	.11	.08	.11	.08	.03	.01	.14	.03	0	.17	0	.19	.19
25Lat	.03	0	.03	.06	.03	0	.03	.03	.03	0	0	.03	.06
26Welf	0	.03	.06	.06	0	0	.03	.06	.03	.03	0	.06	.11
27Lock	0	0	0	0	0	0	0	0	0	0	0	0	0

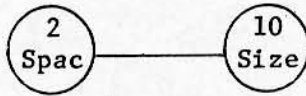
\* Difference over .06 and significant at .05 level

Table 4. (Continued) Skit-What Contingency Matrix

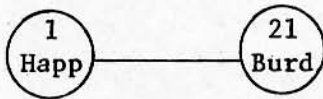
14Edu	15Pop	16Wher	17Love	18Qual	19Stop	20Prac	21Burd	22Mod	23HuwI	24Emop	25Lat	26Welf	27Look
.05	.02	.05	.02	.02	.02	.05	.02	.05	.04	.06	.02	.02	0
.07	.02	.06	.02	.03	.03	.06	.02	.06	.04	.06	.02	.02	.01
.11	.04	.10	.04	.05	.05	.10	.04	.11	.07	.12	.04	.04	.01
.08	.03	.06	.03	.03	.03	.07	.03	.07	.05	.09	.03	.03	.01
.02	.01	.02	.01	.01	.01	.02	.01	.02	.02	.03	.01	.01	0
.01	0	.01	0	.01	.01	.01	0	.01	.01	.01	0	0	0
.11	.04	.10	.04	.05	.05	.10	.04	.11	.07	.12	.04	.04	.01
.11	.04	.10	.04	.05	.05	.10	.04	.11	.07	.12	.04	.04	.01
.04	.02	.04	.02	.02	.02	.04	.02	.04	.03	.05	.02	.02	0
.09	.03	.07	.03	.04	.04	.08	.03	.08	.06	.10	.03	.03	.01
0	0	0	0	0	0	0	0	0	0	0	0	0	0
.14	.05	.12	.05	.06	.06	.12	.05	.13	.09	.15	.05	.05	.01
.16	.06	.14	.06	.07	.07	.14	.06	.15	.10	.17	.06	.06	.01
	.06	.14	.06	.07	.07	.14	.06	.15	.10	.17	.06	.06	.01
.06		.05	.02	.02	.02	.05	.02	.05	.04	.06	.02	.02	0
.08	0		.05	.06	.06	.12	.05	.13	.09	.15	.05	.05	.01
.06	.03	.03		.02	.02	.05	.02	.05	.04	.06	.02	.02	0
.11	.03	.03	.08*		.03	.06	.02	.06	.04	.06	.02	.02	.01
.03	0	.06	.08*	.03		.06	.02	.06	.04	.06	.02	.02	.01
.08	.08	.22	0	.03	.06		.05	.13	.09	.15	.05	.05	.01
.08	.06	.03	.03	.03	0	.06		.05	.04	.06	.02	.02	0
.19	.08	.14	.06	.06	.11	.17	.11		.10	.16	.05	.05	.01
.08	.06	.08	.06	.03	.03	.08	.08	.11		.11	.04	.04	.01
.25	.03	.06	.11	.11	.11	.11	.11	.14	.14		.06	.06	.01
0	.03	.08	0	.03	0	.11	.03	.03	.06	0		.02	0
.03	.03	.08	0	0	.03	.08	0	.06	.06	0	.03		0
0	0	0	.03	0	.03	0	0	0	.03	.03	0	0	



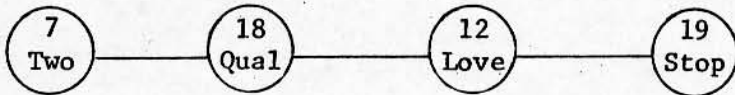
## Pattern A



## Pattern B



## Pattern C



## Pattern D



Figure 2 Skit-What Clusters

coding unit, the entire item of radio script is used as a coding unit for multi-categorizations, i.e., an item is classified one or more than one times depending on the characteristics it holds.

With regard to how the persuasive message is presented, there is none or little difference between immediate objectives (3Imm) and ultimate objectives (4Ult), positive appeal (9Pos) and negative appeal (10Neg), reward-appealing (11Rew) and fear-arousing (12Fear), primacy effect (13Pri) and recency effect (14Rec), conclusion explicit (20Exp) and conclusion implicit (21Imp), climax ordering (22Cli) and anticlimax ordering (23Anti), as well as parents-oriented (25Par) and children-oriented (26-Chil) strategies.

Table 5. Distribution of Strategies--"How"

Code & Item	Spot (N=101)		Skit (N=35)	
	Number	%	Number	%
1Meth	23	22.8	4	11.4
2Inf	63	62.4	18	51.4
3Imm	21	20.8	20	57.1
4Ult	19	18.8	13	37.1
5One	15	14.9	2	5.7
6Two	30	29.7	12	34.3
7Emo	11	10.9	12	34.3
8Rat	27	26.7	19	54.3
9Pos	16	15.8	5	14.3
10Neg	16	15.8	10	28.6
11Rew	17	16.8	12	34.3
12Fear	12	11.9	11	31.4
13Pri	1	1.0	6	17.1
14Rec	-	-	6	17.1
15Sou	-	-	1	2.9
16Rep	-	-	1	2.9
17Grou	4	4.0	4	11.4
18Evid	7	6.9	12	34.3
19Con	9	8.9	28	80.0
20Exp	9	8.9	24	68.6
21Imp	-	-	4	11.4
22Cli	9	8.9	27	71.1
23Anti	-	-	1	2.9
24Act	20	19.8	10	28.6
25Par	23	22.8	27	71.1
26Chil	17	16.8	9	25.7
27Men	38	37.6	25	71.4
28Wom	93	92.1	33	94.3
Total Units	502		356	

In the meanwhile, there are units never or seldom present in the spot samples. They are 13Pri, 14Rec, 15Sou (high source credibility), 17Grou (group conformity), 18Evid (evidence), 21Imp and 23Anti. It is obvious that spot samples are more method-oriented than information-oriented, more women-oriented than men-oriented. The communicator is using more two-sided appeals than one-sided appeals, more rational appeals than emotional appeals. And of the spot samples, 19.8 per cent do ask for actions of the audience.

The salient feature in skit samples is that the priority of the strategies used is identical with the spots, that is, the skits are more information-oriented than method-oriented, more inclined to emphasize an immediate objective than ultimate objective, etc., except that more negative appeals (28.6 per cent) than positive ones (14.3 per cent) are used in the skits.

The skits do contain more units for these categories, but only to some extent. The average percentages of "conclusion drawing" and its relevant units are much higher in the skits than in the spots. The lengthier messages of the skits also allow the communicator to refute opposing arguments either after (primacy effect) or before (recency effect) presenting the statement in the direction advocated by the communicator. However, there are no significant differences in the units of high source credibility, repetition of slogans, and group conformity categories between the spots and skits.

A further comparison between the spots and skits shows 1) that more evidence is found to support the argument in the direction advocated in the skits than spots, 2) that conclusions have more often been drawn and been drawn explicitly in the skits than spots, 3) that conclusions have more often been placed at the end of the messages in the skits than in spots, and 4) that more units are aimed at parents and men in the skits than in spots although women-oriented appeal is a dominant strategy in both cases.

#### (5) The Communication Patterns--Spot-How

Table 6 shows the contingencies of each pairs of categories, one

category across all others, and the contingencies among all categories. The values in upper right cells are expected values, or theoretical values; and the values in lower left cells are obtained values, or observed values. If an obtained value is larger than the expected value at the corresponding cell, the two categories that form the contingency are considered as co-occurring more often than by chance, or being associated.

Only those contingencies which meet two arbitrary criteria--that the obtained value is larger than the expected value by at least .06 and the deviation of these two values reaches .05 level -- will be reported in the cluster analysis.

At column 1 and row 2, the value is .13 which is smaller than the corresponding value of .14 at column 2 and row 1. It is thus inferred that the persuasive strategy of providing general information(2Inf) about family planning does not co-occur with the strategy of teaching how to use contraceptives (1Meth) in the spot samples in Taiwan's family planning radio programs. In other words, the two strategies are independent of each other and, theoretically, not likely to be used in one message. When a message is directed toward the usage of a specific contraceptive, it tends not to mention general information about family planning, and vice versa.

We can do such comparisons pair-by-pair until all contingencies are exhausted. We can, of course, compare column 1 with row 1 and see how the category of "method-oriented" is associated with the rest of 27 categories. In Table 6, no value in column 1 is larger than the corresponding values in row 1. Hence it is inferred that method-oriented is not associated with any category in respect to the communication strategy employed in the spots.

In order to see the association structures among categories, a cluster analysis is performed by limiting the size of contingencies with the criteria mentioned for purpose of clarity and simplicity. Figure 3

Table 6. Spot-How Contingency Matrix

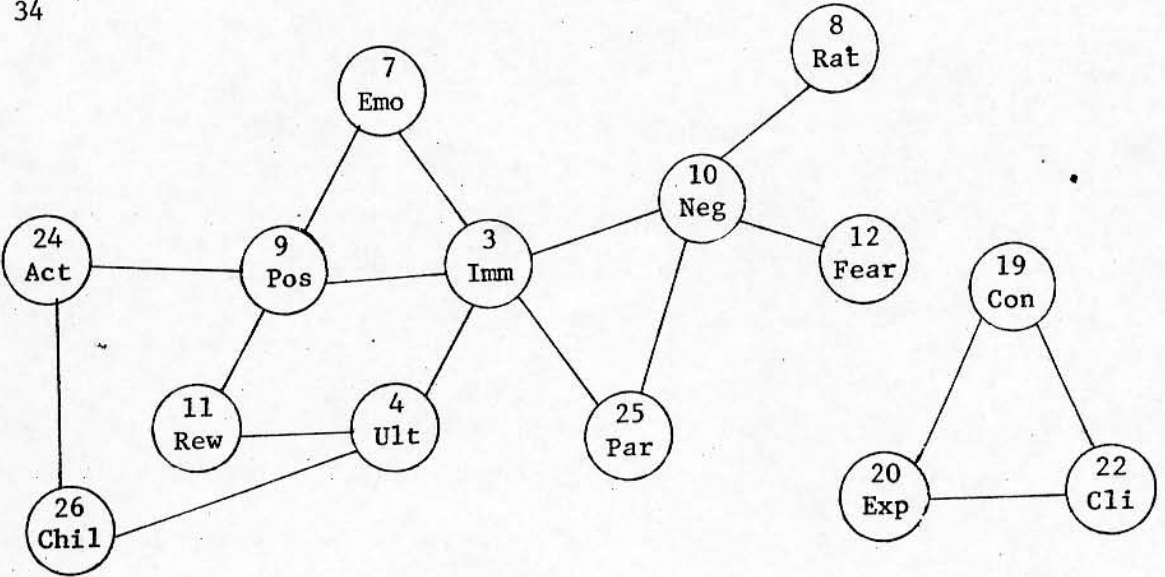
	1Meth	2Inf	3Imm	4Ult	5One	6Two	7Emo	8Rat	9Pos	10Neg	11Rew	12Fear	13Pri	14Rec
1Meth		.14	.05	.04	.03	.07	.03	.06	.04	.04	.04	.03	0	0
2Inf	.13		.13	.12	.09	.19	.07	.17	.10	.10	.11	.07	.01	0
3Imm	0	.05		.04	.03	.06	.02	.06	.03	.03	.04	.03	0	0
4Ult	0	.03	.12*		.03	.06	.02	.05	.03	.03	.03	.02	0	0
5One	.03	.12	0	0		.04	.02	.04	.02	.02	.03	.02	0	0
6Two	.07	.29	.01	.01	.01		.03	.08	.05	.05	.05	.04	0	0
7Emo	0	.01	.08*	.05	0	.01		.03	.02	.02	.02	.01	0	0
8Rat	.02	.11	.12	.11	.01	.06	0		.04	.04	.05	.03	0	0
9Pos	0	.03	.11*	.08	0	0	.08*	.06		.03	.03	.02	0	0
10Neg	0	.04	.12*	.07	.01	.02	.03	.12*	.01		.03	.02	0	0
11Rew	0	.03	.09	.09*	0	.01	.06	.09	.13*	.01		.02	0	0
12Fear	0	.04	.08	.07	.01	.02	0	.11	.01	.11*	0		0	0
13Pri	0	0	.01	.01	0	0	.01	0	.01	.01	0	0		0
14Rec	0	0	0	0	0	0	0	0	0	0	0	0	0	
15Sou	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16Rep	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17Grou	.01	.03	0	0	.03	0	0	0	0	0	0	0	0	0
18Evid	.01	.04	.03	.01	.01	0	.03	0	.01	.03	0	0	.01	0
19Con	0	.01	.05	.03	.01	.01	.05	.03	.03	.06	.03	.04	.01	0
20Exp	0	.01	.06	.02	0	.01	.05	.03	.04	.06	.03	.04	.01	0
21Imp	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22Cli	0	.01	.07	.02	0	.01	.05	.03	.04	.06	.02	.03	.01	0
23Anti	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24Act	.01	.05	.07	.09	.02	.03	.06	.12	.09*	.03	.11	.02	0	0
25Par	0	.07	.18*	.11	.01	.03	.05	.15	.09	.14*	.08	.11	.01	0
26Chil	0	.01	.11	.14*	0	.01	.07	.10	.08	.06	.08	.05	.01	0
27Men	.01	.09	.15	.15	.05	.06	.09	.16	.14	.09	.14	.06	.01	0
28Wom	.21	.56	.22	.19	.13	.27	.11	.27	.18	.16	.17	.12	.01	0

\* Difference over .06 and significant at .05 level

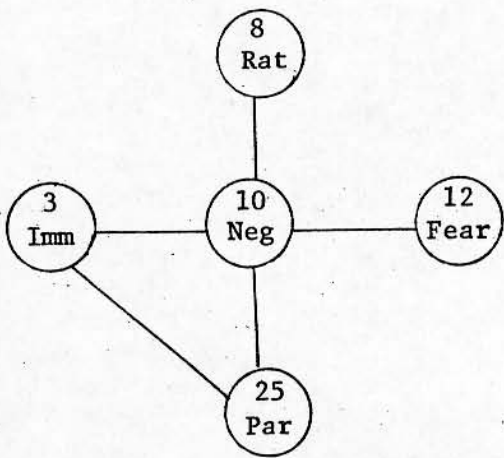


Table 6. (Continued) Spot-How Contingency Matrix

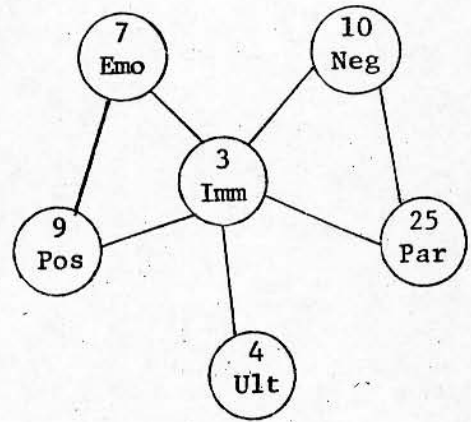
15Sou	16Rep	17Grou	18Evid	19Con	20Exp	21Imp	22Cli	23Anti	24Act	25Par	26Chi1	27Men	28Wom
0	0	.01	.02	.02	.02	0	.02	0	.05	.05	.04	.07	.21
0	0	.03	.04	.06	.06	0	.06	0	.12	.14	.11	.24	.57
0	0	.01	.01	.02	.02	0	.02	0	.04	.05	.04	.08	.19
0	0	.01	.01	.02	.02	0	.02	0	.04	.04	.03	.07	.17
0	0	.01	.01	.01	.01	0	.01	0	.03	.03	.03	.06	.14
0	0	.01	.02	.03	.03	0	.03	0	.06	.07	.05	.11	.27
0	0	0	.01	.01	.01	0	.01	0	.02	.03	.02	.04	.10
0	0	.01	.02	.02	.02	0	.02	0	.05	.06	.05	.10	.25
0	0	.01	.01	.01	.01	0	.01	0	.03	.04	.03	.06	.15
0	0	.01	.01	.01	.01	0	.01	0	.03	.04	.03	.06	.15
0	0	.01	.01	.02	.02	0	.02	0	.03	.04	.03	.06	.16
0	0	.01	.01	.01	.01	0	.01	0	.02	.03	.02	.05	.11
0	0	0	0	0	0	0	0	0	.01	0	0	0	.01
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	.01	.01	.01	.02	.04
0	0	0	0	.01	.01	0	.01	0	.01	.02	.01	.03	.06
0	0	0	.03	0	.01	0	.01	0	.02	.02	.02	.03	.08
0	0	0	.03	.09*	0	0	.01	0	.02	.02	.02	.03	.08
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	.03	.09*	.09*	0	0	0	.02	.02	.02	.03	.08
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	.03	.03	0	.03	0	0	.05	.03	.07	.18
0	0	0	.02	.06	.06	0	.06	0	.06	0	.04	.09	.21
0	0	0	.02	.06	.06	0	.06	0	.09*	.08	0	.06	.16
0	0	.01	.04	.07	.07	0	.07	0	.14	.14	.15	0	.35
0	0	.04	.06	.09	.09	0	.09	0	.20	.23	.17	.31	0



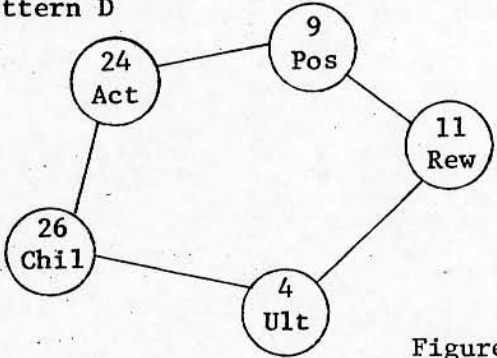
Pattern B



Pattern C



Pattern D



Pattern E

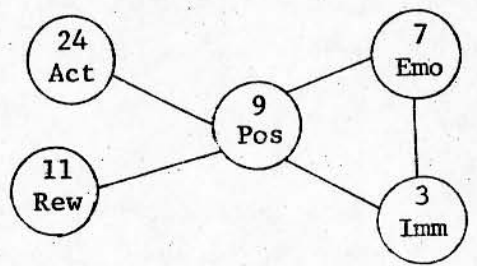


Figure 3 Spot-How Clusters

shows the results.

Pattern A gives an overall picture of association structure of "how it is said" categories, represented here with codes composing of numbers and abbreviations inside circles. The major cluster is composed of such strategies as 3Imm, 4Ult, 7Emo, 8Rat, 9Pos, 10Neg, 11Rew, 12Fear, 24Act, 25Par and 26Chil. This cluster is disassociated with the minor cluster composed of 19Con, 20Exp and 22Cli.

The three categories in the minor cluster are contextually related and therefore it is not surprising they cluster together.

When broken down, Pattern A gives several sub-clusters centering a few categories. Pattern B clusters "immediate objective", "rational", "fear-arousing" and "parents-oriented" together around "negative". This structure shows that when negative appeal is used, the communicator often mentions short-term goals for the adoption of family planning. Although the rationale for family planning is given, the communicator tends to point out the negative impacts the parents could probably expect for not practicing. While these four strategies are associated with "negative" respectively, "immediate objective" and "parents-oriented" will be present if any of these four strategies is co-occurring with "negative".

Pattern C refers to "immediate objective". Reference to this strategy is significantly contingent with "ultimate objective", "emotional", "positive", "negative" and "parents-oriented". The communicator not only speaks of immediate objectives but also ultimate ones, by appealing to the audience's emotions. In addition, both dissonance-reducing and -producing approaches are used and the impacts of family planning on the parents are discussed.

Each category in Pattern D is associated with two categories on one hand and indirectly related with other two. Each one can be a center of the cluster depending on how the message is said. To mention on example: when the ultimate objective (4Ulti) of family planning is contained in the message, the rewards (11Rew) that children (26Chil) can obtain are also

presented. It is possible, in this case, that appeals such as "positive" and "asking for actions" are accompanied in the same message.

Pattern E clusters 3Imm, 7Emo, 11Rew and 24Act together, centered by 9Pos. When a dissonance-reducing appeal, or message supporting deeply held beliefs or values, is present, the communicator is more likely to give short-term objectives as rewards that one might have by the adoption of family planning. It is also likely that the communicator will be asking for action by appealing to the audience's emotions.

Other inferences, as well as other sub-clusters, are not impossible as are the cases all through this chapter.

#### (6) The Communication Patterns--Skit-How

The same interpretative procedure applies to the skits on how the message is presented. Table 7 gives all the obtained values and expected values. A check of the values in column 1 against the values in row 1, cell by cell, shows that 1Meth is associated with 2Inf, 6Two, 13Pri, 14Rec, 17Grou and 24Act because the obtained values are larger than the expected values. This is quite different from the spots where the strategy of "method-oriented" is not associated with any of the rest.

However, only 1Meth is associated with 13Pri when a difference of value and a significant level are employed as the selective criteria for depicting major contingencies which are then subject to cluster analysis, shown in Figure 6 with lines connecting between variables. There is more information like this available.

There are two sub-clusters in it and each one is independent of the other. The first one is composed of 1Meth, 13Pri, 6Two and 14Rec. When the communicator tries to teach the way of utilizing contraceptive(1Meth), both advantages and disadvantages of a particular contraceptive(6Two) are given, with messages espousing a given side preceding the message arguing for the opposite side (13Pri). When information other than the utilization of the contraceptives is present, both sides of the story (6Two) will be

Table 7. Skit-How Contingency Matrix

	1Meth	2Inf	3Imm	4Ult	5One	6Two	7Emo	8Rat	9Pos	10Neg	11Rew	12Fear	13Pri	14Rec
1Meth		.06	.07	.04	.01	.04	.04	.06	.02	.03	.04	.03	.02	.02
2Inf	.11		.29	.19	.03	.18	.18	.28	.07	.15	.18	.16	.09	.09
3Imm	.03	.22		.21	.03	.20	.20	.31	.08	.16	.20	.18	.10	.10
4Ult	0	.19	.09		.02	.13	.13	.20	.05	.11	.13	.12	.06	.06
5One	0	.03	.06	0		.02	.02	.03	.01	.02	.02	.02	.01	.01
6Two	.11	.25	.11	.11	0		.12	.19	.05	.10	.12	.11	.06	.06
7Emo	0	.14	.25	.11	.06	.08		.19	.05	.10	.12	.11	.06	.06
8Rat	.06	.25	.27	.25	0	.14	0		.08	.16	.19	.17	.09	.09
9Pos	0	.06	.08	.06	0	0	.03	.11		.04	.05	.04	.02	.02
10Neg	0	.11	.17	.14	.03	.11	.11	.17	0		.10	.09	.05	.05
11Rew	0	.14	.19	.17	0	.03	.08	.29	.08	0		.11	.06	.06
12Fear	0	.14	.22	.11	.06	.03	.19	.11	.06	.11	.06		.05	.05
13Pri	.08*	.11	.08	.03	0	.14*	.03	.08	.03	.03	.03	.06		.03
14Rec	.03	.14	.06	.11	0	.14*	.06	.11	0	.08	0	.03	0	
15Sou	.03	.03	0	0	0	.03	0	0	0	0	0	0	.03	0
16Rep	0	.03	.03	.03	0	0	0	.03	0	0	.03	.03	0	0
17Grou	.06	.08	.08	0	0	.08	.06	.03	0	.03	0	.03	.06	.03
18Evid	0	.17	.27	.11	.03	.08	.06	.28	.06	.14	.17	.14	.06	.06
19Con	.03	.36	.44	.36	.06	.19	.30	.47	.17	.27	.27	.27	.06	.14
20Exp	.03	.33	.39	.30	.03	.17	.22	.44	.14	.25	.25	.22	.06	.17
21Imp	0	.03	.08	.06	.03	0	.08	.33*	0	.03	.03	.06	0	0
22Cli	.03	.36	.47	.36	.06	.17	.30	.44	.14	.25	.27	.27	.06	.17
23Anti	0	0	.03	0	0	0	0	.03	0	.03	0	0	0	0
24Act	.08	.22	.19	.03	.03	.06	.08	.17	.06	.03	.11	.06	.08	.06
25Par	.03	.33	.53	.27	.06	.19	.33	.44	.14	.25	.27	.27	.08	.14
26Chil	0	.11	.14	.14	0	.06	.08	.17	.06	.06	.14	.14	.06	.03
27Men	0	.22	.39	.30	.03	.17	.25	.44	.11	.19	.33	.22	.06	.11
28Wom	.11	.47	.53	.33	.06	.30	.27	.53	.11	.27	.33	.27	.17	.14

\* Difference over .06 and significant at .05 level



Table 7. (Continued) Skit-How Contingency Matrix

15Sou	16Rep	17Grou	18Evid	19Con	20Exp	21Imp	22Cl1	23Anti	24Act	25Par	26Chil	27Men	28Wom
.03	0	.01	.04	.09	.07	.01	.08	0	.03	.08	.02	.08	.11
.01	.01	.06	.18	.41	.35	.06	.40	.01	.15	.40	.13	.37	.48
.02	.02	.07	.20	.46	.39	.07	.44	.02	.16	.44	.15	.41	.54
.01	.01	.04	.13	.30	.25	.04	.29	.01	.11	.29	.10	.26	.35
0	0	.01	.02	.05	.04	.01	.04	0	.02	.04	.02	.04	.05
.01	.01	.04	.12	.27	.24	.04	.26	.01	.10	.26	.09	.24	.32
.01	.01	.04	.12	.27	.24	.04	.26	.01	.10	.26	.09	.24	.32
.02	.02	.06	.19	.43	.37	.06	.42	.02	.16	.42	.14	.39	.51
0	0	.02	.05	.11	.09	.02	.11	0	.04	.11	.04	.10	.13
.01	.01	.03	.10	.23	.20	.03	.22	.01	.08	.22	.07	.20	.27
.01	.01	.04	.12	.27	.24	.04	.26	.01	.10	.26	.09	.24	.32
.01	.01	.03	.11	.25	.22	.03	.24	.01	.09	.24	.08	.22	.30
.01	.01	.02	.06	.14	.12	.02	.13	.01	.05	.13	.04	.12	.16
.01	.01	.02	.06	.14	.12	.02	.13	.01	.05	.13	.04	.12	.16
	0	0	.01	.02	.02	0	.02	0	.01	.02	.01	.02	.03
0		0	.01	.02	.02	0	.02	0	.01	.02	.01	.02	.03
.03	0		.04	.09	.07	.01	.08	0	.03	.08	.02	.08	.11
0	.03	0		.27	.24	.04	.26	.01	.10	.26	.09	.24	.32
0	.03	.06	.27		.55	.09	.62	.02	.23	.62	.21	.57	.75
0	.03	.06	.27	.66		.08	.53	.02	.20	.53	.18	.49	.67
0	0	0	0	.11	0		.08	0	.03	.08	.02	.08	.11
0	.03	.06	.25	.75	.64	.11		.02	.22	.59	.20	.55	.73
0	0	0	.03	.03	.03	0	0		.01	.02	.01	.02	.03
.03	0	.08	.14	.19	.19	0	.19	0		.22	.07	.20	.27
0	.03	.06	.33	.69	.61	.08	.66	.03	.22		.20	.55	.73
0	.03	.03	.14	.22	.19	.03	.22	0	.03	.19		.18	.24
0	.03	.06	.25	.61	.53	.08	.61	0	.14	.58	.19		.67
.03	.03	.08	.33	.72	.61	.11	.69	.03	.25	.69	.25	.64	

Pattern A

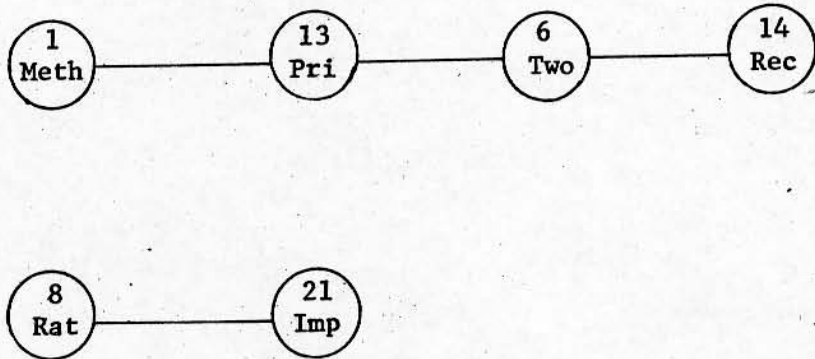


Figure 4 Skit-How Clusters

given and both orderings (13Pri and 14Rec) are possible depending upon what the message is.

The second sub-cluster gathers 8Rat and 21Imp. When a rational appeal is used, the communicator tends to draw the conclusion implicitly and leave its implications to the audience.

## 8. DISCUSSION AND SUGGESTIONS

This paper deals with the subject matter and communication techniques of Taiwan's family planning radio programs by content-analyzing radio scripts produced by the Institute of Family Planning, the official organization in charge of family planning IEC activities in Taiwan. Our main focus has been in exploring "what is said" and "how it is said" in the radio messages. Patterns of presenting the message content and persuasive strategies are studied through contingency analysis that shows the association structures among variables. The basic assumption is that ideas in a message are indicative of the source's thinking. By examining the relations between the message and the sources, it would be possible to make general inferences about the source and to predict potential effects the message might have on the audience provided the characteristics of the audience are known.

However, inferences were made only about the source based on the communication patterns that provide ample room for generating hypotheses for people concerned with family planning communication in and out of Taiwan. For one thing, while communication researchers have not contributed more than they have to the analysis of the communicators and what they do,<sup>28</sup> it is worth-while to investigate how decisions relating to persuasive messages are made by the communicators and what their intentions are. For another, it seems to be a constructive step in drawing up a list of variables for national policy programmers to determine what communication work might be of value at each stage of program development. Other countries would be able to make judgments as to whether their program is likely to

meet the same communication problems.<sup>29</sup>

Following is a summary of the major findings in this exploratory study:

(1) The emphasis of family planning radio programs in the early years of Taiwan's public information campaign was on spot announcements. They provide basic information such as the name and the effectiveness of a particular contraceptive method. They are relatively methods-oriented and are designed essentially for the awareness stage of adoption.

(2) As the family planning program continued to evolve, the emphasis of the radio programs was shifted to skits. They appeal to a higher cognitive level of the audience's perception and thus are relatively motivation-oriented. They are designed essentially for the remaining stages of the adoption process.

(3) The spots tend to contain a diversity of themes in a shorter length while the skits tend to contain less themes in a longer length. In both the spots and skits, the themes giving information do not interact with that of aiming to change the audience's values, beliefs, or attitudes. In other words, a different function between the spots and skits is recognized by the communicator.

(4) The overall characteristic of the themes mentioned in the scripts is that the concrete themes are relatively preferred rather than the abstract ones. However, comparatively more abstract concepts are found in the skits than in the spots. Some themes considered as important for family planning communication, such as "a smaller family is a happier family" and "the morality of family planning", do not appear very often in Taiwan's family planning radio scripts in both the spots and skits.

(5) There is no significant difference between the spots and skits in the persuasion techniques used. However, in both the spots and skits, more items are devoted to information-oriented than method-oriented, two-sided than one-sided, rational appeal than emotional appeal categories.

There is more room for the persuasion techniques used in the skits than the spots because the skits tend to be lengthier.

(6) Some communication principles tested in the laboratory settings and considered as effective in appealing, such as group conformity (bandwagon effect) and high source credibility, are not prevailing in both the spots and skits. This also true, to a lesser extent, to "repetition" (of slogans) although this category is not sensitive to the inter-message variations of repeating certain key words under the definition of the term "repetition" given in the present study.

The results derived from this study are highly suggestive, if one has the effectiveness of persuasive communication in mind. On the other hand, it would be misleading to describe the decision-making of the communicator without reference to his audience, as Mcquail puts it:

A requirement for mass dissemination is wide audience appeal, and perceptions of the interests and values of dominant groups who make up the "target" audience are bound to shape what is communicated.<sup>30</sup>

This is, of course, beyond the scope of the present study. However, research of this type would help not only understand the communication behavior of the source, but also of the audience.

The study and evaluation of family planning communication in Taiwan are limited to 1) whether information should be more method-oriented or motivation-oriented, 2) whether information should be more method-what or -how and -why, 3) whether the content should be more specific, and 4) whether the Institute of Family Planning should try to get more TV time. Surprisingly, what is not done is just as revealing as what is done. What about other considerations such as emphasizing the themes of "a smaller family is a happier family", "the morality of family planning" and the strategies of "group conformity", "high source credibility" while a radio script is being prepared? These are either themes considered as important in family planning information campaign or strategies tested as effective in persuasive communication. They should be taken



into account, if not adopted, at certain stages in public information campaigns.

#### FOOTNOTES

1. Chao-lang Chen's study dealt mainly with the former. It should be considered as a complementary study for the present one. See his "Decision strategies on Content and Utilization of Family Planning Radio Program in Taiwan" in Journal of Population Studies, Inauguration Issue, January 1977.
2. Theresa M. Jazmines, "A Content Analysis of Newspaper Articles on Family Planning," IMC-UNESCO Project on Research, Development and Training in Family Planning Communications, Second Progress Report, March-April 1972, Institute of Mass Communication, University of the Philippines, May 1972, p. 413.
3. Herminia M. Alfonso, "Descriptive Analysis of Information Campaign Materials for Family Planning in Some Asian Countries: A Pilot Study of Print Media," IMC-UNESCO Project on Research, Development and Training in Family Planning Communications, Second Progress Report, March-April 1972, Institute of Mass Communication, University of the Philippines, May 1972, pp. 36-37.
4. Ibid, pp. 2-3
5. Matthew B. Cort and Oliver D. Finnigan, III, "Family Planning Themes and Slogan," first draft, the East-West Center, 1973, p.1.
6. Ibid, pp. 2-3.
7. Randall Harrison, "Family Planning Posters: A Brief Analysis," draft for discussion and comment, the East-West Center, 1973, pp. 1-2.
8. Wilbur Schramm, "Family Planning Information in the Seventies," paper prepared for the Conference on Blue-Printing Plans to Support the Information-Communication of Family Planning Programs during the 1970's, Chicago, 1971, pp. 4-5.
9. Everett M. Rogers, "Family Planning Word-Symbols: Semantic

- Problems in Diffusion," in David Radcl (ed.) Rural Africana, the African Studies Center, Michigan State University, 1971, p. 102.
10. George P. Cernada and Laura P. Lu, "The Kaohsiung Study," Studies in Family Planning, The Population Council, Vol. 3, No. 8, August 1972, p. 199.
  11. Y. Hsu, F. Niu and G. Huang, "The Use of Mass Media," in George Cernada (ed.) Taiwan Family Planning Reader, The Chinese Center for International Training in Family Planning, Taichung, Taiwan, 1970, p. 82.
  12. The Chinese Center for International Training in Family Planning, "Taiwan's Information-Education Budget," in Family Planning Communications in Taiwan Area, Republic of China, published and distributed by the Center, Taichung, Taiwan, 1973, mimeographed copy, page number unmarked.
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