

KUNST MAKEDYAD

Create file of dyads

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1 General description

Sociometry is a label for a family of methods and techniques that are used for the study of relations among the members of a group. The term "sociometry" was originally introduced in 1953 by J.L. Moreno in his book "Who Shall Survive". Sociometric techniques have been used in various research fields, especially in social sciences. An introduction can be found in Borgatta (1978). In the past decades sociometric techniques regained popularity in the study of peer relations in childhood and adolescence. A recent overview is given by Newcomb, Bukowski and Pattee (in press). A good introduction in Dutch language in the use of sociometric techniques in peer relations research is presented by Cillessen and ten Brink (1991). The program MAKEDYAD is made as a tool to produce dyads. In this context a dyad is the combination of two members of a group. The two members will form a new 'case', the dyad. The program produces all possible combinations of two members of the group. Hence, when a group consists of n members, $n(n-1)/2$ dyads will be formed. For each dyads all kinds of data are computed and saved in a newly made file. Additionally an SPSS-syntax file will be produced to facilitate the use of the dyads.

The basic sociometric information data to be processed by MAKEDYAD are nominations of group members elicited by questions like "Which children in your group do you like most?".

The basic characteristic of MAKEDYAD is the reorganization of a dataset of nominations given by a group of persons into a new dataset of the nominations of two members of the group (the dyad). The nominations on at most 25 sociometric criteria or questions can be used. For each criterion several special arrangements of these received nominations, like raw scores, can be computed. Also cliques can be traced (see section 1.5).

In sociometric analysis two sociometric criteria or questions are used, usually one "positive" criterion (for example: acceptance) and one "negative" criterion (for example: rejection). In this manual the use of the program is explained and demonstrated with these two criteria but the program can handle up to 25 sociometric criteria.

MAKEDYAD can cope with special situations:

- Some group members have not participated (due to absence or refusal, etcetera).
- There are restrictions on the group members to be nominated. An example is the question "Which **girls** in your group do you like most?".

1.1 Properties of nominations: type of data

The two sociometric questions (or "criteria") acceptance and rejection are probably the most widespread in sociometric research in peer relations. They are often labeled or denoted as *LIKE* and *DISLIKE*. But MAKEDYAD also allows the use of other sociometric criteria. For example "Which children often start fights?".

An important issue is the decision whether to use fixed or free numbers of nominations. Fixed numbers of nominations can be gathered by using questions such as: "Name the three children in your group you like most". If the number of nominations is free one can use a formulation such as "Which children in your group do you like most?".

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The fixed number approach may sometimes force cases to nominate more or less group members than they would under the free number approach. Consider, for example, a sociometric question about "best friends". In the fixed number approach a person may be asked to name his three best friends in a group. In reality this person may not have a best friend in that group, or only one, or maybe four.

A further, more serious, disadvantage of the use of fixed numbers of nominations is that the number of mutual nominations may be too limited or too large, which can limit valid tracing of dyads and cliques.

A final disadvantage of fixed numbers of nominations is that possibilities for examination of differences between groups or between criteria are diminished. In general the choice of the method, free or fixed, influences the probability of occurrence of numbers of received nominations.

An advantage of fixed numbers of nominations is the easier data entry.

Sometimes cases nominate themselves. Self-nominations are mostly not accounted for in sociometric interviews. However, the nature of the criterion may determine whether self-nominations should be allowed in the sociometric interview procedure. In MAKEDYAD self-nominations are reported but ignored.

1.2 Method overview

MAKEDYAD reads sociometric data on the individual level and produces a file on the dyadic level. The original nominations stem from individual group members judging each other on a number of criteria. Often the group is a school class and the members are children. The judgments may be elicited by questions like "name three classmates you like most" and "name three children you like least". Each of these criteria contains information about individual children and about their relation with other children.

MAKEDYAD calls the group members **cases** and **items**. A case is the person that judges other group members and an item is the person being judged. In a school class the children are cases and items at the same time.

The file produced by MAKEDYAD consists of dyads containing information on individual level, on group level and on dyadic level. A listing will be produced that contains counts per group. An SPSS syntax file will be produced to facilitate the use the results in further analyses.

On the **group level** the following information may be produced for each of the criteria:

- The number of nominations made by either of the two cases in the dyad
- The number of times either case in the dyad is nominated within the group

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From the responses on each criterion several **individual** scores may be computed:

- The table of raw scores. The raw score of an item (a child) is the total number of times it is nominated by its classmates on the criterion.
- Frequencies of the scores.
- The scale scores.
- An overview of cliques. A group of children all nominating each other on the criterion is called a "clique". The theoretical number of cliques is very large, but if their actual number is not too large, the program will report. The clique report is less valid if only a small number of nominations is allowed.

On the **dyadic level** the following information will be produced:

- For each of the criteria there is a variable to indicate if the first case in the dyad nominates the second case in the dyad on that criterion.
- For each of the criteria there is a variable to indicate if the second case in the dyad nominates the first case in the dyad on that criterion.

From these two items other information may be derived, such as mutual nominations.

- Crosstabulations are made for each criterion: a two by two table with on one side the question "nominates the first member in the dyad the second member?" (yes or no) and on the other side the question if the second case nominates the first.

1.3 The data

As said before, the data consist of nominations on certain criteria, for example the following two:

"Which 3 of your classmates do you like most?" and

"Which 3 of your classmates quarrel a lot?"

In this case, the data must consist of two matrices, where the first one describes the responses on the 'Like' criterion and the second the responses on the 'Quarrel' criterion.

The program assumes a correspondence between rows (cases) and columns (items) in the data. Therefore their order must be arranged very carefully in the dataset. The following common rules are recommended:

- Cases are arranged in rows in the dataset, each case on a separate row. You may use more than one line per case but it is recommended to keep the same number of lines for each case.
- Include all group members in the dataset, even those that did not give or receive nominations.

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- The data may contain a **case number**. If so, nominations must refer to these case numbers. Otherwise they must refer to the sequence numbers of the cases. If a nomination is a number not in the list of case numbers, or not in the list of sequence numbers, it will be treated as a missing value.

If no case numbers are given cases in subsequent groups are continuously numbered. This means that a nomination of the first item in the second group must not be recorded as a 1 but as one more than the number of cases in the first group! In order to avoid mistakes it is better to include case numbers in the data. Do not confuse the case number and the case identification string that you can define in the datalist. The case identification string is only a label, used in the listing file.

During data entry the items (the group members that were nominated) are coded with their corresponding case or sequence numbers. These numbers are called "item numbers". In this way the item numbers always correspond to the case or sequence numbers.

In this program the number of nominations per case must always be fixed. This fixed number must be the same for all criteria. For example: If the first criterion is "Name three classmates you want to play with", the maximum number of nominations is 3. All nominations of a case represent one row in the data: possibly an identification string for the case, possibly a case number, 3 item for the nominations on the first criterion, 3 nominations on the second criterion and so on for all criteria.

However, a free number of nominations can be simulated by specifying a large number of nominations. If a case gives less nominations than is required, the missing nominations can (and must) be replaced by missing values, i.e. values that are not used as case numbers (if these are present) or values outside the range of sequence numbers (if the data do not contain case numbers).

All rows together form the data matrix.

If the data do not contain case numbers, all cases must be represented in the data, even those that do not nominate: otherwise the match between sequence numbers and cases would be distorted.

.....+.....1.....+.....2.....+.....3.....+....

Daphne	01	04	02	99	07	08	03
Mike	02	01	05	08	07	03	04
John	03	01	02	04	08	07	05
Bill	04	01	02	03	05	99	99
Jane	05	06	08	02	01	03	07
Fatima	06	01	03	05	02	04	08
Liz	07	99	99	99	99	99	99
Henry	08	01	03	05	02	04	06

Figure 1: Example of data

Figure 1 contains an example of the data in this form with a group of 8 children, 2 criteria and 3 nominations per criterion. Child 1 nominated only 2 children on the first question, child 4 nominated only 1 child on the second question and child 7 was not present when the test was administered, so it did not nominate anyone at all. The first 7 positions of each case contain a case-identification string, positions 9-10 contain a case number. No group number is defined.

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Dyads are constructed for pairs of cases/items within groups, but the program can handle several groups per file. There are three ways to define the groups within a file:

- using a variable that contains the group number. If the data contain also a case number, the case number must precede the group number in the datalist.
- separating groups by *blank* cases
- specifying the exact numbers of cases for the groups.

Moreover several files can be analyzed in one program run.

1.4 Files

There are five file types that are important for this program:

data files:

The files that contain the data to be analyzed. See section 1.3 for a description. One program run can analyze several files.

settings files:

These files are used to save the options as a user has specified them. A settings file contains all information about the analysis to be performed, including the description of the data, but not the data themselves. It is possible to have more than one settings file. By default their extension is `'.setmak'`.

listing files

A listing file contains the main results of an analysis in a nice layout for human readers. There will be one listing file for each data file. Its name will take its first part from the data file and end on `'.LST'` (or on `'1.LST'`, `'2.LST'`, ... and so on). You can inspect it by any editor, but in order to have an orderly layout you must view it in a small non-proportional font like Courier New 9.

the dyads file:

For each input file the program produces a dyads file. These files are meant to be input for other programs, like SPSS. Their names will take their first part from the data files and end with `'.OUT'` (or `'1.OUT'`, `'2.OUT'`, ... and so on).

SPSS-syntax files:

Along with each dyad file the program produces a file with SPSS commands. This syntax file is meant to be input for SPSS. Its name will take the first part from the data file and end with `'.SPS'` (or `'1.SPS'`, `'2.SPS'`, ... and so on).

2 Installing the program on Windows

The installation of the program is very simple:

1. Copy the file “MakeDyad.exe” to any place on your hard disk. Optionally you may make shortcuts on the task bar and/or the desktop.
2. After the first time you have used the program, double click on the listing file (with extension .lst). Windows will ask you to select the program to be used when opening the file. Select a simple text editor like NotePad or WordPad.
3. After the first time you have saved the program settings, double click on the settings file (with extension .setmak). Windows will ask you to select the program to be used when opening the file. Select the program “MakeDyad.exe” or any shortcut to it.

That is all: from now on, you can start the program by double clicking the exe-file, one of its shortcuts or one of its settings files.

3 Starting the program

To run *MakeDyad* you must double click on its exe-file (*MakeDyad.exe*) or, if you have used the program before, on one of its settings files (for instance *Current.setmak*). The first thing you will see then, is the main window of the program, as shown in Figure 2.

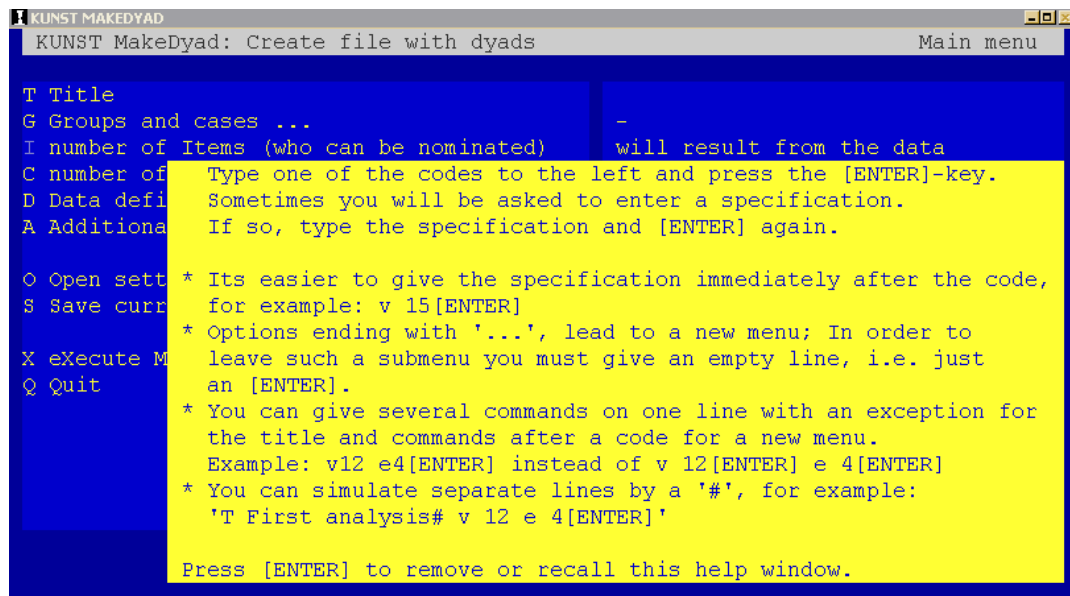


Figure 2: The main window for MakeDyad

On the screen the light part with the text 'Type one ...' is a yellow text window. Windows like that contain hints and explanations. If you have read the text (or don't need it at all), you can press the Enter-key and the yellow window will disappear (see Figure 3).

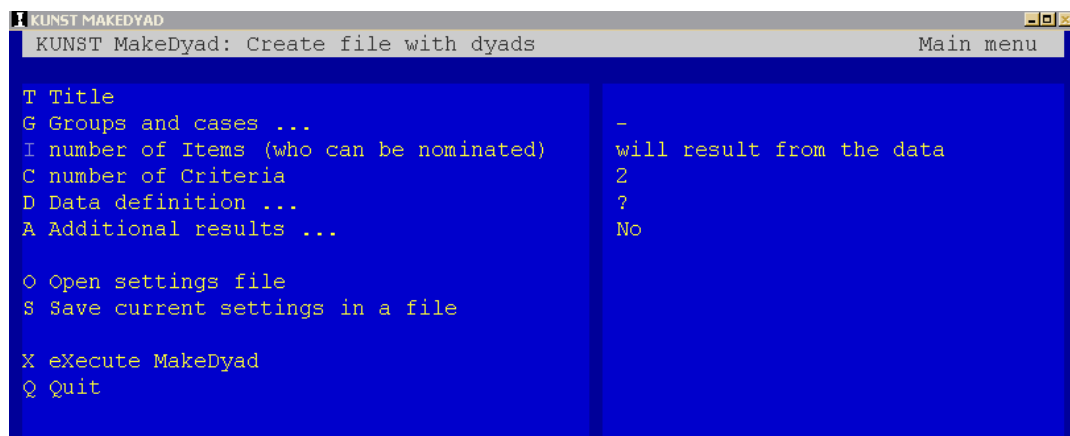


Figure 3: The main window for MakeDyad without help-window

Now you can see the entire main window. The left part is the main menu. It consists of a list of options, each preceded by a one-character code. To select an option you must type the code, followed by the information you want to give and then followed by the Enter-key. From now on, we will denote the Enter-key as: Enter. You may for

instance type: T Analyzing first data to define the title that will appear as a header in the listing file. If you do not know what the meaning of an option is, you may just enter its code and . There will appear a question on the screen and, if helpful, a yellow window to give you information. Press to remove the yellow window and then give the specification belonging to the code or ignore the yellow window and give the specification at once. Do not repeat the code itself!

The right part of the window gives a short review of the options as they currently are set. In the example of Figure 3 you can see:

- No title line is defined
- Groups and cases need not to be defined
- There are 2 criteria
- The data definitions are not yet specified, but must be given
- No additional results will be reported

4 Menu options

4.1 The Main Menu

The main menu contains the following options:

T Title

This option allows you to specify a header to be used in the listing file.

G Groups and cases ...

If you type `G` the main menu will be replaced by the groups and cases menu. This menu allows you to define the numbers of groups and the number of cases in each group. It will be discussed in section 4.2.

C number of Criteria

C is used to define the number of criteria. Up to 25 criteria can be handled.

D Data definitions ...

If you type `D` the main menu will be replaced by the data definitions menu. This menu allows you to define the input data. It will be discussed in section 4.3.

A Additional results ...

This option leads to a new menu, that allows you to ask for additional information in the listing file. It will be treated in section 4.4.

O Open settings file

If you ever have saved the options for *MakeDyad* or if you have received a settings file from someone else, you can retrieve the options from the settings file. If you type `O`, a file-selector box will appear on the screen that allows you to select the settings file. By default settings files from *MakeDyad* have the extension `.setmak`. It may be convenient to save your current settings before collecting new ones. The program may remind you of that. After you have collected information from a settings file, its name will be visible on the upper right part of the main window.

S Save current settings

If you want to save the options and specifications that you have made so far, you can enter `S`. If you do so, a file-selector box will appear, that allows you to specify the place and the name of the file to which the settings must be written.

X eXecute MakeDyad

If you have specified all options you can type `X` to start the computations. The program will check if all obligatory options are specified and if there are no

inconsistencies. If everything is right, the computations will start. If the program is correctly installed it will, when it is finished, automatically open the last (or only) listing file it has made. If it fails to do so, you can open it yourself by any text editor like *WordPad*, *NotePad* or *Word*. In order to have a nicely outlined text, you must select a small non-proportional font like Courier New 9.

Q Quit

The option Q is a kind of emergency exit. If you choose it, *MakeDyad* will halt without performing any calculations and without producing any output files.

4.2 Defining groups and cases

Cases are the persons that are nominating. Items are the persons that can be nominated. The number of cases may be specified by option **G**. The number of items cannot be given. It will always result from the number of cases in a group. There exists a system dependent maximum of cases and items within a group. Usually this is 500.

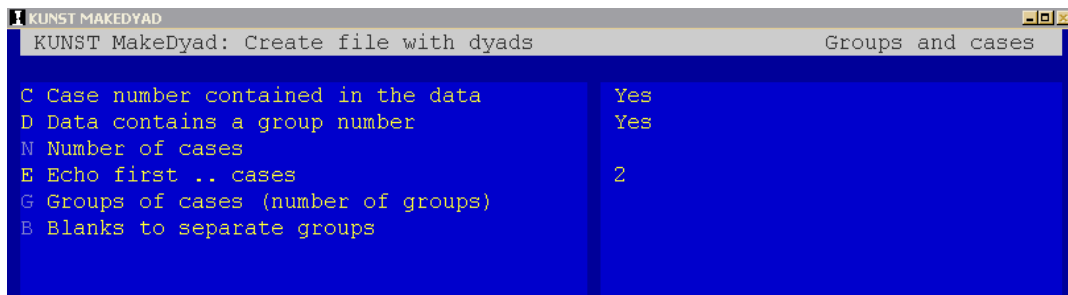


Figure 4: The Groups and Cases menu .

From the main menu, you may type the option **G** to enter the groups and cases menu. After you have filled out the options in this menu you must press to return to the main menu.

If your input file(s) contain a group number (option D is Yes) and you want to analyze all groups, you can leave the options in this menu at their default values (see Figure 4), with a possible exception for the option E.

In the groups and cases menu the following options can be chosen:

C Case number contained in the data

Option C is used to specify if there is a variable in the data containing a case number. If it is, this variable is called *CaseNr*. The case numbers are used to nominate cases. If a nomination refers to a number outside list of case numbers in the group, it will be treated as a missing value.

If there is no case number in the data, the nominations must refer to the sequence numbers of the cases. If a nomination is outside the range of sequence numbers in the group, it will be considered missing.

D Data contains a group number

With this option you can indicate if there is a variable in the data containing a group number. If there is, this group number is used to define the groups and the number of cases in each group. When there is more than one group, each group is processed separately, i.e. dyads are formed per group.

If the data are read in free form and contain both a case number and a group number, the group number must come after the case number and both must precede the nomination data.

When the data do not contain a group number, the groups are defined by the options Number of cases, Groups of cases and Blanks to separate groups.

B Blanks to separate groups

If this option is given a number, the program will recognize the boundaries between groups by an empty line, or, to be precise, a case with spaces in a specific field of its first line. The given number is the starting position of the field, its length is always 4.

If you are using fixed format input with more than one line per case, the empty case must contain also more lines.

G Groups of cases

This option can be used to define the number of groups. If the option Blanks is used to separate groups, you do not need to specify this number, but it offers the probability to restrict the analysis to a smaller number of groups.

If groups are not separated by blanks, and the input files contain more than one group each, there is an alternative way of keeping groups apart: specifying the number of groups by this option and then specifying the exact number of cases in each group. If a file contains more groups than the given number, only that number of groups will be analyzed.

N Number of cases

This option can be used to define the numbers of cases in consecutive groups. It makes only sense if the option Blanks is not used and the number of groups is specified. You may leave out the size of the last group; the program will assume that it runs until the end of the file.

If each input file contains only one group, you can specify 'N All' to indicate that the file must be read from beginning to end and that the program must count the cases itself.

You type: g 3

In this way you specify that there are (at least) three groups (in each input file).

You type: n 25 29

Hereby you specify the size of the first two groups. The program will assume 'all' for the third group, that is all cases until the end of file.

```
E Echo first .. cases
```

If you type `e ##` the first ## cases of each group will be shown in the listing file. This may help you to check if the input specifications are correct.

4.3 Definition of the data

From the main menu, you may type the option `D` to enter the data definitions menu. After you have filled out the options in this menu you must press to return to the main menu.

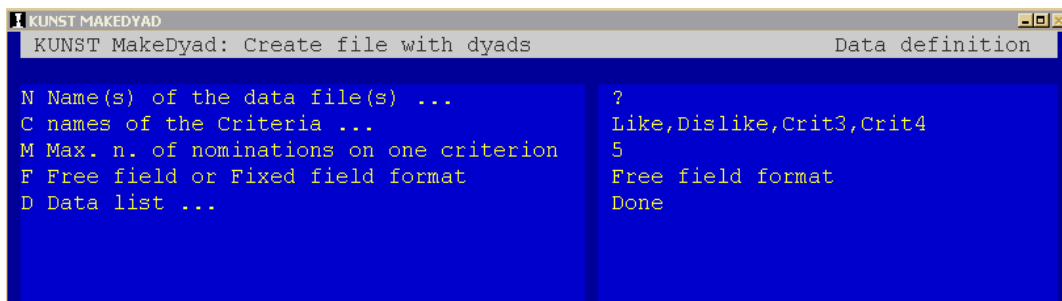


Figure 5: The data definition menu

In the data definition menu (see Figure 5) the following options can be chosen:

```
N Name(s) of the data file(s)
```

If you choose this option a file-selector box will appear that enables you to select one or more input files.

```
C names of the criteria
```

By default there are two nomination criteria with the default names *Like* and *Dislike*. If there are more than two criteria, the third and further ones will be named *Crit3*, *Crit4*, etc. Option `C` is used to redefine the names of the criteria. Note that names cannot be longer than 8 characters. When you type `C`, the screen will reveal a list of all criteria with their names (see Figure 6). Now you can change a name by entering the sequence number followed by a name.

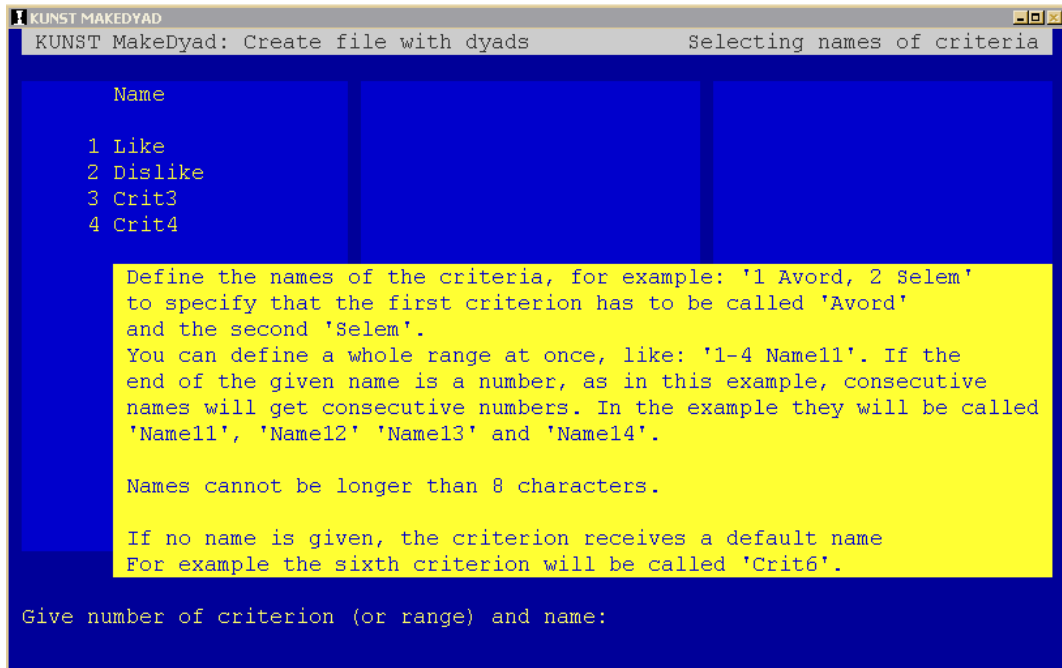


Figure 6: The list of criteria and their names

You can define a whole range at once, like 1-4 Crit1. If the name ends with a number, as in this example, consecutive names will get consecutive numbers.

M Max. n. of nominations on one criterion

The data contain the numbers of the items that are nominated. There is a maximum to the number of possible nominations. You are asked for this maximum with the option M. If a case nominates less items than this maximum the remaining values must given as missing values, i.e. as numbers that are not in the range of case numbers or (if there are no case numbers) not in the range of sequence numbers.

F Free field or Fixed field format

This option defines where the values in a case are to be found:

In a *free* format, the positions of the values may be different from row to row, although there order must be always the same. The user can still choose whether line numbers are specified or not. **In general, the use of free format is highly recommended since it is less sensitive to irregularities in the data or mistakes in the specifications.**

In a *fixed* format, each case consists of the same number of lines (most probably just one) and each value has a precisely defined position in that line. You must define these positions in the **data list**. This format is especially useful if the values are typed one after another without intervening spaces or commas. Fixed format allows also to skip data values or to read them in an order that is different from the physical sequence within a line. If the data contain a case number and a group number and the group number precedes the case number, you can use fixed format to correct their order.

Each time you type F the choice between fixed and free format switches.

D Data list ...

If you type **D**Enter, the data list will be shown. See section 4.5 for an explanation of all the possible options.

4.4 Additional results in the listing file

The option A in the Main-menu leads to the additional-results-menu (see Figure 7). The options in this menu offer the possibility to get additional information in the listing file besides to what is given by default.

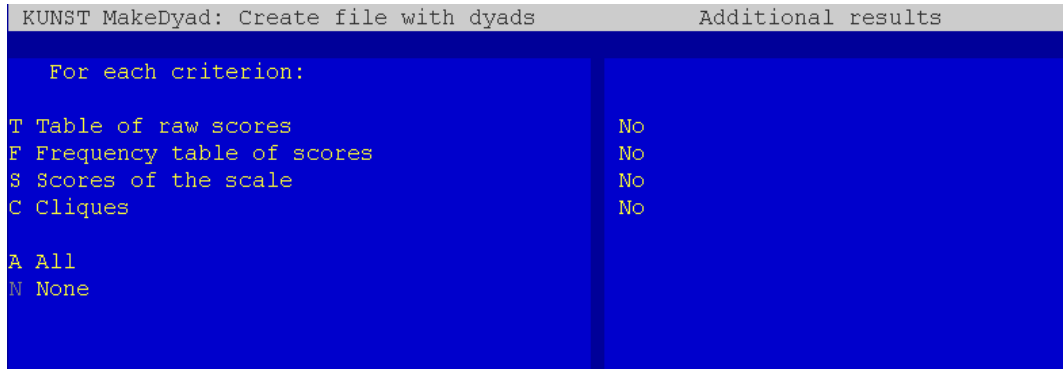


Figure 7: The Additional-results menu.

All the options apply to each of the criteria. So if there are 25 criteria the listing may be very large.

T Table of raw scores

By typing **T**Enter you switch the option from *yes* to *no* or the other way around. If it is *yes* the responses on the criteria are given in the form of 0/1 flags with for each nominating case the total number of nominations he or she made and the proportion relative to the total of possible nominations.

F Frequency table of scores

By typing **F**Enter you switch the option from *yes* to *no* or the other way around. If it is *yes* the listing file will contain the frequencies of the sum scores (for each item the number of times it has been nominated) with the following statistics: Sum, Mean, Standard Deviation, Variance, Minimum, Maximum and Mode.

S Scores of the scale

By typing **S**Enter you switch the option from *yes* to *no* or the other way around. If it is *yes* the listing file will contain the scores of the scale: for each case the number of times it is nominated, the expected value, the standardized score and the probability to obtain the score.

C Cliques

By typing **C**Enter you switch the option from *yes* to *no* or the other way around. If it is *yes* the listing file will contain a list of cliques. A clique is a group of cases all

nominating each other on a certain criterion. When the number of cliques exceeds the number of items or 37, instead of the list of cliques, a table of all symmetric nominations is shown.

4.5 The data list

The option D in the data-definition menu leads to a new window with a layout that differs from the usual menu layout. Its layout depends on the chosen format type. If the input file contains one single line per case and the scores are separated by spaces or tabs, you can select the free format option and skip the data list, with possibly one exception: By default the case identification (the text identifying the case) is taken from positions 1-8 of the input lines. If this identification is to be found elsewhere, you must use the data list to adjust its location.

```

KUNST MAKEDYAD
KUNST MakeDyad: Create file with dyads          Data list: Columns
Case id.: columns 1 - 8;                        Tot. lines per case 1
Name Type Line Columns                        Name Type Line Columns
1 CaseNr C 1 ... - ...                        17 Crit35 1 ... - ...
2 GroupNr G 1 ... - ...                       18 Crit41 1 ... - ...
3 Like1 1 ... - ...                            19 Crit42 1 ... - ...
4 Like2 1 ... - ...                            20 Crit43 1 ... - ...
5 Like3 1 ... - ...                            21 Crit44 1 ... - ...
6 Like4 1 ... - ...                            22 Crit45 1 ... - ...
7 Like5 1 ... - ...
8 Dislike1 1 ... - ...
9 Dislike2 1 ... - ...
10 Dislike3 1 ... - ...
11 Dislike4 1 ... - ...
12 Dislike5 1 ... - ...
13 Crit31 1 ... - ...
14 Crit32 1 ... - ...
15 Crit33 1 ... - ...
16 Crit34 1 ... - ...

C=Columns I=case id. T=Total lines N=Name L=Line numbers D=Delete A=Add
Give C, I, T, N, L, A, D or continue with column definitions:

```

Figure 8: The data list for fixed format data

If the groups-and-cases menu indicates that the data contain a case number, the program will automatically generate an entry for it in the data list. It will be marked as a C-type variable. In the same way the program will generate an entry for a group number if the groups-and-cases menu indicates that such a variable is present. If both a case number and a group number are present, the case number will come first. If their order in the data is different and the data format is fixed, you can indicate the correct order by the *columns* information.

The data list contains always the variables for the nominations on all criteria, starting with the nominations on the first criterion (in this case 5 nominations on *Like*, which will receive the names *Like1* to *Like5*), followed by the nominations of the second criterion (in this case 5 nominations on *Dislike*, which will receive the names *Dislike1* to *Dislike5*), followed by the nominations of the third criterion (in this case 5 nominations on *Crit3*, which will receive the names *Crit31* to *Crit35*), and so on for all criteria. The names of these nominations depend on the names of the criteria.

Figure 8 shows a data list for fixed format data. Now you can type one of the indicated characters (C, I, T, N, L, A, D) followed by a sequence number or a range of sequence numbers and then followed by the corresponding information. The possibilities can best be clarified by some examples:

You type: `c1 5-7`

Thereby you specify that the first column (the case number) be in positions 5 through 7 (right adjusted).

From now on, you can leave the code `c` out; it will be assumed as long as you do not select another code.

You type: `3-7 11-20`

This means that variables 3, 4, 5, 6 and 7 (the scores on the *Like* criterion) occupy positions 11 through 20, so variable 3 is in position 11-12, variable 4 is in positions 13-14, variable 5 is in positions 15-16, variable 6 is in positions 17-18 and variable 7 in positions 19-20.

You type: `2 8`

This means that variable 2 (the group number) occupies position 8.

You type: `L8 2`

Now you have entered a different code. The code **L** indicates that you are defining line numbers. You specify that variable 8 (the first score on criterion *Dislike*) is contained in the second line of a case. Line numbers must be in ascending order. Therefore, the program will adjust the line numbers of variable 9 and higher to 2 if they are still 1. From now on, you may leave the code `L` out, until you switch to another code.

You type: `13-17 3`

You specify that variables 13 through 17 (the scores on criterion *Crit3*) are contained in the third line of a case.

You type: `I1-8`

With the option **I** you define an area in the first line of each case that contains an alphanumerical case-identification. Its value may be used in the listing file to identify a case. The field can be up to 18 characters long. If the case identification is not present in the data (`i 0`), the case receives a default name: '`C`' followed by its case number followed by '....' (for example `C18....`).

You type: `T4`

If you don't use the option **T**, the program will assume that the number of lines for each profile is equal to the line number of the last affect in the data list. If there are more lines in a row, you must specify that by the option `T`. In this example, you specify that there are 4 lines in each profile.

You type: A3`Enter`

The option **A** allows you to add other variables to the list. These variables receive the type * and the name *Extra* followed by a number, like Extra1, Extra2. All sequence numbers and all other definitions will be adjusted accordingly. In this example, you add a third and fourth variable.

You can also specify a range of variable numbers, for instance 'A23-25' to add the additional variables 23, 24 and 25.

For a further explanation on additional variables see subsection 4.5.1

You type: N3 Pleasure`Enter`

The code **N** indicates that you are specifying names. Variable 3 will receive the name 'Pleasure'. Names will be truncated to 8 characters. Note that only the additional variables (*-type) may receive other names. The variables *CaseNr* and *GroupNr* have fixed names and the variables that represent scores on the criteria derive their name from the name of the criterion.

You type: 2-5 Esteem`Enter`

Variables 2 through 5 will all be called 'Esteem' (only the *-typed ones).

You type: 6-12 Var6`Enter`

Variables 6 through 12 will be called 'Var6', 'Var7', ..., 'Var12'. As you see, if the name ends on a number subsequent names will have their numbers adjusted (only the *-typed ones).

You type: D5`Enter`

The option **D** allows you to remove a variable from the list (only the *-typed ones). All sequence numbers and all other definitions will be adjusted accordingly. In this example, you remove the fifth variable. You can also specify a range of variable numbers, for instance 'D5-7' to remove the variables 5, 6 and 7.

You type: F`Enter` or B`Enter`

If there are more than 32 variables, they will not fit at once on the data list screen. Therefore, you have the possibility to scroll forward and backward with the options **F** and **B**.

If you use free format data (see Figure 9), you do not need to specify anything in the data list. However, you may specify on which line of a case each variable is recorded. So you can use the option **L**. The options **I**, **T**, **A**, **N** and **D** are also available. Their meaning and use are the same as with fixed format data (see above).

```

KUNST MakeDyad: Create file with dyads          Data list: Adding
Case id.: columns 1 - 8;                        Tot. lines per case ????
  Name  Type Line                               Name  Type Line
-----
  1 CaseNr  C Free                               17 Crit33   Free
  2 GroupNr G Free                               18 Crit34   Free
  3 Extra1  * Free                               19 Crit35   Free
  4 Extra2  * Free                               20 Crit41   Free
  5 Like1   Free                               21 Crit42   Free
  6 Like2   Free                               22 Crit43   Free
  7 Like3   Free                               23 Crit44   Free
  8 Like4   Free                               24 Crit45   Free
  9 Like5   Free
10 Dislike1 Free
11 Dislike2 Free
12 Dislike3 Free
13 Dislike4 Free
14 Dislike5 Free
15 Crit31  Free
16 Crit32  Free

I=case id. T=Total lines N=Name L=Line numbers D=Delete A=Add
Give I, T, N, L, A, D or continue with adding extra variables:

```

Figure 9: The data list for free format data

If you have finished the data list, you can go back to the data menu by entering an empty line (just `Enter`). If the yellow window is still visible, you must enter two empty lines (`Enter Enter`): one to remove the yellow window and one to return to the data menu.

4.5.1 Additional variables

The options **N** (names), **A** (add) and **D** (delete) are only to be used for additional variables. These variables are not nominations, not the case number and not the group number. They represent individual characteristics of the dyad members. These variables must be numerical. In the dyadic output file each of these variables will appear as a couple: the score for the first dyad member and the score for the second member.

The additional variables are marked by their type: a star. Only the variables with type * can be removed (D) or named (N). If, for example, the variables 5, 7 and 8 are starred and you enter `D 5-8` the variables 5, 7 and 8 are removed, but variable 6 remains in the data list. Actually variable 6 moves backward and becomes variable 5.

The names you give to these variables are used as variable names in the SPSS-syntax file. To these names a '1' is added for the first case in the dyad and a '2' for the second case. For example, if you name an additional variable *Reputat*, the two names in the SPSS-syntax file will be *Reputat1* and *Reputat2*.

It should be noted that, when you have more additional variables with a sequence number in the last possible position (8), this sequence number is replaced by '1' and '2'. In this case the names will receive a "sequence character" in position 7, that is an A, B, C and so on. If, for example, the data list contains the names *Reputat1* to *Reputat5*, the SPSS-syntax will call them *ReputaA1*, *ReputaB1*, *ReputaC1*, *ReputaD1* and *ReputaE1* for the first dyad member and *ReputaA2*, *ReputaB2*, *ReputaC2*, *ReputaD2* and *ReputaE2* for the second member.

5 Results

After execution of GRIDAN you will find three new files in your working directory:

- the listing file
- the file of dyads
- the SPSS-syntax file

5.1 Results in the listing file

The listing file will contain the main results for each group. Its precise content depends on the specifications by the user and the input data. The lines in the listing have a length of 80 characters or less. View (and print) the file with a small non-proportional font like Courier 9.

- The file starts with an overview of the options as the user has chosen them. If the nominations in the data contain any values not in the list of case numbers, they are treated as missing values. If these values are greater than zero they are reported in the listing file.
- Then follow the results .

For each of the criteria optionally the following information is reported:

- The responses on the criterion are shown including for each case the number of nominations made and its proportion relative to the total of possible nominations.
 - A frequency table is given of the sum scores (the number of times each item is nominated) along with some statistics like the mean, standard deviation and variance.
 - For each item the sum score is given along with its expected value, the Z-score, the probability and the number of symmetric nominations.
The expected value is defined by the sum of the proportions of all cases minus an items own proportion.
The Z-score is the standardized sum score.
The probability of the score is based on the right tail of the generalized binomial distribution.
When case A nominates B on the criterion and case B nominates also A, it is called a symmetric nomination. The number of symmetric nominations for each case is reported.
 - Cliques are reported if present.
- For each group cross tabulations are made for the dyads on each criterion: "Nominates the first case in the dyad yes or no the second case in the dyad?" against "Nominates the second case in the dyad yes or no the first case in the dyad?".

5.2 The file of dyads

Following are the variables written to the file and their location:

There are 9 lines per dyad-case.

Line	Column(s)	Contents
1	01-05	Group number of the dyad
	06-10	Dyad sequence number
	11-12	Line number within the dyad-case this line with the characteristics of the first case in the dyad
	14-31	Case-identification of the first case in the dyad
	32-36	Case number of the first case in the dyad
	37-??	Additional variables of the first case in the dyad
	2	01-05
06-10		Dyad sequence number
11-12		Line number within the dyad-case this line with the characteristics of the second case in the dyad
14-31		Case-identification of the second case in the dyad
32-36		Case number of the second case in the dyad
37-??		Additional variables of the second case in the dyad
3		01-05
	06-10	Dyad sequence number
	11-12	Line number within the dyad-case this line with the characteristics of the dyad
	14-31	Case-identification of the first case in the dyad
	33-50	Case-identification of the second case in the dyad
	51-55	Group number of the dyad
	4	01-05
06-10		Dyad sequence number
11-12		Line number within the dyad-case this line with 1/0-scores for yes or no the first case in the dyad nominates the second case in the dyad on up to 25 criteria
14-31		Case-identification of the first case in the dyad
33-50		Case-identification of the second case in the dyad
51-52		Case 1 nominates case 2 on criterion 1 (1 = yes)
53-54		Case 1 nominates case 2 on criterion 2 (1 = yes)
55-56		Case 1 nominates case 2 on criterion 3 (1 = yes)
etc		until optionally
99-100		Case 1 nominates case 2 on criterion 25 (1 = yes)
5		01-05
	06-10	Dyad sequence number
	11-12	Line number within the dyad-case this line with 1/0-scores for yes or no the second case in the dyad nominates the first case in the dyad on up to 25 criteria
	14-31	Case-identification of the second case in the dyad
	33-50	Case-identification of the first case in the dyad
	51-52	Case 2 nominates case 1 on criterion 1 (1 = yes)
	53-54	Case 2 nominates case 1 on criterion 2 (1 = yes)
	55-56	Case 2 nominates case 1 on criterion 3 (1 = yes)

	etc	until optionally
	99-100	Case 2 nominates case 1 on criterion 25 (1 = yes)
6	01-05	Group number of the dyad
	06-10	Dyad sequence number
	11-12	Line number within the dyad-case this line with the nominations by the first case in the dyad on up to 25 criteria
	14-31	Case-identification of the first case in the dyad
	32-35	number of nominations on criterion 1 by first case in the dyad
	36-39	number of nominations on criterion 2 by first case in the dyad
	etc	until optionally
	128-131	number of nominations on criterion 25 by first case in the dyad
7	01-05	Group number of the dyad
	06-10	Dyad sequence number
	11-12	Line number within the dyad-case this line with the number of times the first case in the dyad is nominated on up to 25 criteria
	14-31	Case-identification of the first case in the dyad
	32-35	number of times the first case is nominated on criterion 1
	36-39	number of times the first case is nominated on criterion 2
	etc	until optionally
	128-131	number of times the first case is nominated on criterion 25
8	01-05	Group number of the dyad
	06-10	Dyad sequence number
	11-12	Line number within the dyad-case this line with the nominations by the second case in the dyad on up to 25 criteria
	14-31	Case-identification of the second case in the dyad
	32-35	number of nominations on criterion 1 by second case in the dyad
	36-39	number of nominations on criterion 2 by second case in the dyad
	etc	until optionally
	128-131	number of nominations on criterion 25 by second case in dyad
9	01-05	Group number of the dyad
	06-10	Dyad sequence number
	11-12	Line number within the dyad-case this line with the number of times the second case in the dyad is nominated on up to 25 criteria
	14-31	Case-identification of the second case in the dyad
	32-35	number of times the second case is nominated on criterion 1
	36-39	number of times the second case is nominated on criterion 2
	etc	until optionally
	128-131	number of times the second case is nominated on criterion 25

There is no need to look this up all the time, because the commands to enter this data in SPSS are contained in the SPSS-syntax file.

5.3 The SPSS-syntax file

The SPSS-syntax file contains the necessary lines to read the dyads-file, make variable labels, value labels and give some examples of how to make selections. There will be enough commented lines in the file to get an idea of the possibilities.

6 Example run

```

.....+.....1.....+.....2.....+.....3.....+.....4.....+.....5.....+.....6.....+.....7.....+.....8.
048E282 1 048 2 4 9 19 0 0 8 3 23 0 0 9 0 0 0 0 .664 -1.650 ....
048B282 2 048 2 7 11 12 18 0 0 0 0 0 0 11 18 0 0 0 -1.445 .194 ....
0483217 3 048 1 5 6 8 10 17 1 0 0 0 0 0 17 10 6 5 0 -.771 .935 ....
048C281 4 048 2 1 19 28 15 9 5 6 23 0 0 19 0 0 0 0 1.339 -.744 ....
0485160 5 048 1 6 3 27 8 21 9 4 1 24 0 3 17 27 0 0 .341 -.468 ....
0484169 6 048 1 5 3 27 8 14 9 1 4 2 24 3 27 8 0 0 .335 -.116 ....
048F281 7 048 2 2 21 11 12 26 1 0 0 0 0 21 11 18 26 0 -1.465 -.361 ....
0484217 8 048 1 3 10 15 17 27 16 23 0 0 0 10 17 27 0 0 .692 1.157 ....
048D281 9 048 2 1 4 28 0 0 24 27 7 0 0 1 19 28 0 0 -1.278 -1.634 ....
0482217 10 048 1 3 8 17 0 0 1 0 0 0 0 8 3 0 0 0 -.795 .848 ....
048C282 11 048 2 26 21 14 12 2 0 0 0 0 0 26 2 14 21 0 -1.545 .503 ....
048D280 12 048 2 11 26 21 22 24 9 0 0 0 0 26 22 18 11 0 -1.101 .240 ....
0486216 13 048 1 15 19 28 0 0 24 0 0 0 0 19 28 0 0 0 1.604 .661 ....
048A281 14 048 2 26 11 4 6 28 9 24 0 0 0 4 11 0 0 0 .706 -1.061 ....
0481217 15 048 1 13 28 19 0 0 24 1 0 0 0 19 28 0 0 0 1.596 .419 ....
.
.
etc.

```

In this section an example of input and output is given. The data are read from file "MakeDyadExample.dat". Part of the file is shown in Figure 10.

Figure 10: Part of the example data.

The columns 1 to 10 contain the case identification. They are followed by a case number, a group number and the gender.

The following 15 codes are the nominations on 3 criteria, each naming 5 item-numbers. The first 5 codes contain the responses on the question "Name 5 classmates you like most". The next 5 codes contain the responses on "Name 5 classmates you like least". In the third 5 codes are the responses on "Name maximal 5 classmates you call your friend".

The nominations are followed by scores on 5 additional variables (in Figure 10 only the first two are shown): they are the scores on the big five: Extraversion, Agreeableness, Conscientiousness, Emotional stability and Openness.

Because all variables in a case are separated by blanks, the data will be read in free format.

In Figure 11 through Figure 15 you see the menus after all the options have been specified.


```

KUNST MAKEDYAD
KUNST MakeDyad: Create file with dyads
Main menu

T Title
G Groups and cases ...
I number of Items (who can be nominated)
C number of Criteria
D Data definition ...
A Additional results ...

O Open settings file
S Save current settings in a file

X eXecute MakeDyad
Q Quit

Example with 2 groups and addition
-
will result from the data
3
Done
No

```

Figure 11: The main menu for the example.

```

KUNST MAKEDYAD
KUNST MakeDyad: Create file with dyads
Groups and cases

C Case number contained in the data
D Data contains a group number
N Number of cases
E Echo first .. cases
G Groups of cases (number of groups)
B Blanks to separate groups

Yes
Yes
2

```

Figure 12: The groups-and-cases for the example.

```

KUNST MAKEDYAD
KUNST MakeDyad: Create file with dyads
Data definition

N Name(s) of the data file(s) ...
C names of the Criteria ...
M Max. n. of nominations on one criterion
F Free field or Fixed field format
D Data list ...

MakeDyad.dat
Like,Dislike,Friend
5
Free field format
Done

```

Figure 13: The data definition for the example.

```

KUNST MAKEDYAD
KUNST MakeDyad: Create file with dyads
Selecting names of criteria

Name
1 Like
2 Dislike
3 Friend

```

Figure 14: The criterion names for the example.

```

KUNST MAKEDYAD
KUNST MakeDyad: Create file with dyads          Data list: Names
Case id.: columns 1 - 10;                      Tot. lines per case ???
  Name  Type Line                               Name  Type Line
1 CaseNr  C Free                               17 Friend4   Free
2 GroupNr G Free                               18 Friend5   Free
3 Gender  * Free                               19 Extraver  * Free
4 Like1   Free                                20 Agreeabl  * Free
5 Like2   Free                                21 Conscien  * Free
6 Like3   Free                                22 EmotStab  * Free
7 Like4   Free                                23 Openness  * Free
8 Like5   Free
9 Dislike1 Free
10 Dislike2 Free
11 Dislike3 Free
12 Dislike4 Free
13 Dislike5 Free
14 Friend1 Free
15 Friend2 Free
16 Friend3 Free

I=case id. T=Total lines N=Name L=Line numbers D=Delete A=Add
Give I, T, N, L, A, D or continue giving names:

```

Figure 15: The Data list for the example.

After execution the program will have produced a **listing file** that looks as follows:

View (and print) this file with a small non-proportional font like Courier 9.
Lines contain 80 characters or less.

```
-----
* * * * * 13-11-2003 13:56:54
```

```
  MakeDyad: KUNST program to create a file with all dyads within a group
             Interactive version 1.00, November 2002
```

```
* * * * *
The operation and the accuracy of the program are not guaranteed.
```

Example with 2 groups and additional variables.

```
=====
```

```
  1. Summary of the user specifications and input data.
```

```
=====
```

```
The data are numbers of nominated items.
These numbers are case numbers (CaseNr).
There are 5 nominations on each of the following 3 criteria:
      Like      Dislike  Friend
With each case 6 extra variables will be read.
```

```
The data will be read from file:
  C:\Kunst\Testdata\MakeDyadExample.dat
```

```
The total number of items that can be nominated will be computed from the data.
The number of groups will result from the group number (GroupNr).
The number of cases will be computed.
Of the cases 2 will be echoed.
```

```
The file with the dyads will be called:
  MakeDyad.out
The file with the accompanying SPSS-syntax will be called:
  MakeDyad.sps
```

```
The variables in the data:
-----
```

```
The data are in completely free form.
Seq.num.
```

```
  1      CaseNr
  2      GroupNr
  3      Gender
  4      Likel
  5      Like2
  6      Like3
  7      Like4
  8      Like5
  9      Dislike1
 10     Dislike2
 11     Dislike3
 12     Dislike4
 13     Dislike5
 14     Friend1
 15     Friend2
 16     Friend3
 17     Friend4
 18     Friend5
 19     Extraver
```

```
20 Agreeabl
21 Conscien
22 EmotStab
23 Openness
```

The case identification will be taken from columns 1 to 10 of the first line.

The data will be read now:

First cases:

```
Case 1 (048E282012):          Case number 1
                             Group 48
Like           4      9     19      0      0
Dislike        8      3     23      0      0
Friend         9      0      0       0      0
Additional variables:
                2.000    0.664   -1.650   -1.661   -0.311   -0.688
```

```
Case 2 (048B282022):          Case number 2
                             Group 48
Like           7     11     12     18     0
Dislike        0      0      0      0      0
Friend        11     18      0      0      0
Additional variables:
                2.000   -1.445    0.194    0.808    0.267   -0.407
```

The number of cases read is 52.
Dyads will be made for 2 groups.

Example with 2 groups and additional variables.

```
=====
2. PROCESSING GROUP 48
=====
```

The number of cases in this group is 28, which will result in 378 dyads.

Example with 2 groups and additional variables.

```
=====
3. INFORMATION ON DYADIC LEVEL OF GROUP 48
=====
```

```
=====
3.1 Group 48: Dyadic table on criterion Like
=====
```

		Second case nominates first case		
		yes	no	total
First case nominates second case	yes	42	20	62
	no	20	296	316
total		62	316	378

```
=====
3.2 Group 48: Dyadic table on criterion Dislike
=====
```

```

=====
                Second case nominates first case
                  yes      no      total
First case      yes       5       16      |      21
nominates
second case     no       19      338     |      357
-----|-----
                  total    24     354     |      378
=====

```

```

=====
3.3  Group 48: Dyadic table on criterion Friend
=====

```

```

                Second case nominates first case
                  yes      no      total
First case      yes      22      19      |      41
nominates
second case     no      13     324     |      337
-----|-----
                  total   35     343     |      378
=====

```

Example with 2 groups and additional variables.

```

=====
4.  PROCESSING GROUP 102
=====

```

The number of cases in this group is 24, which will result in 276 dyads.

Example with 2 groups and additional variables.

```

=====
5.  INFORMATION ON DYADIC LEVEL OF GROUP 102
=====

```

```

=====
5.1  Group 102: Dyadic table on criterion Like
=====

```

```

                Second case nominates first case
                  yes      no      total
First case      yes      29      16      |      45
nominates
second case     no      21     210     |      231
-----|-----
                  total   50     226     |      276
=====

```

5.2 Group 102: Dyadic table on criterion Dislike

```
=====
```

		Second case nominates		first case
		yes	no	total
First case	yes	4	18	22
nominates				
second case	no	26	228	254
	total	30	246	276

5.3 Group 102: Dyadic table on criterion Friend

```
=====
```

		Second case nominates		first case
		yes	no	total
First case	yes	20	9	29
nominates				
second case	no	17	230	247
	total	37	239	276

==== Normal end of analysis =====

The output **dyads file** is called "MakeDyad.out". Part of it is shown in Figure 16:

```
.....+.....1.....+.....2.....+.....3.....+.....4.....+.....5.....+.....6.....+.....7.....+.....8
48  1 1 048E282012                1      2.000    0.664   -1.650   -1.661   ...
48  1 2 048B282022                2      2.000   -1.445    0.194    0.808   ...
48  1 3 048E282012                048B282022      48
48  1 4 048E282012                048B282022      0 0 0
48  1 5 048B282022                048E282012      0 0 0
48  1 6 048E282012                3      3      1
48  1 7 048E282012                2      9      1
48  1 8 048B282022                4      0      2
48  1 9 048B282022                3      1      2
48  2 1 048E282012                1      2.000    0.664   -1.650   -1.661   ...
48  2 2 0483217031                3      1.000   -0.771    0.935    1.198   ...
48  2 3 048E282012                0483217031      48
48  2 4 048E282012                0483217031      0 1 0
48  2 5 0483217031                048E282012      0 1 0
48  2 6 048E282012                3      3      1
48  2 7 048E282012                2      9      1
48  2 8 0483217031                5      1      4
48  2 9 0483217031                7      1      5
.
.
etc
```

Figure 16: First part of the output file of dyads.

The SPSS-syntax file will look like this:

```

TITLE 'Example with 2 groups and additional variables.'.
COMMENT The file MakeDyad.out
        contains all dyads with scores on the following 3 criteria:
        Like      Dislike  Friend
        There are 2 groups. The dyads are made within each group
.
DATA LIST FILE='MakeDyad.out' FIXED RECORDS=9
  /1 Group DyadNr (2F5)
    CaseLab1(T14,A18) CaseNr1(T32,F5)
    Gender1
    Extravel
    Agreeabl
    Consciel
    EmotStal
    Opennes1
    ( 9F10)
  /2 CaseLab2(T14,A18) CaseNr2(T32,F5)
    Gender2
    Extrave2
    Agreeab2
    Conscie2
    EmotSta2
    Opennes2
    ( 9F10)
  /3
  /4 N1_2C1 TO N1_2C3 (T51,3F2)
  /5 N2_1C1 TO N2_1C3 (T51,3F2)
  /6 Nom1C1 TO Nom1C3 (T32,3F4)
  /7 Cnt1C1 TO Cnt1C3 (T32,3F4)
  /8 Nom2C1 TO Nom2C3 (T32,3F4)
  /9 Cnt2C1 TO Cnt2C3 (T32,3F4)
.
VAR LABELS CaseLab1'Label of first case in the dyad'
           / CaseLab2'Label of second case in the dyad'
           / CaseNr1 'Number of first case in the dyad'
           / CaseNr2 'Number of second case in the dyad'
           / Group   'Group of the dyad'
           / DyadNr  'Sequence number of the dyad'
           / N1_2C1  'Case 1 nominates case 2 on Like'
           / N2_1C1  'Case 2 nominates case 1 on Like'
           / Nom1C1  'NNominations by case 1 on Like'
           / Nom2C1  'NNominations by case 2 on Like'
           / Cnt1C1  'Times case 1 is nominated on Like'
           / Cnt2C1  'Times case 2 is nominated on Like'
           / N1_2C2  'Case 1 nominates case 2 on Dislike'
           / N2_1C2  'Case 2 nominates case 1 on Dislike'
           / Nom1C2  'NNominations by case 1 on Dislike'
           / Nom2C2  'NNominations by case 2 on Dislike'
           / Cnt1C2  'Times case 1 is nominated on Dislike'
           / Cnt2C2  'Times case 2 is nominated on Dislike'
           / N1_2C3  'Case 1 nominates case 2 on Friend'
           / N2_1C3  'Case 2 nominates case 1 on Friend'
           / Nom1C3  'NNominations by case 1 on Friend'
           / Nom2C3  'NNominations by case 2 on Friend'
           / Cnt1C3  'Times case 1 is nominated on Friend'
           / Cnt2C3  'Times case 2 is nominated on Friend'
.
VALUE LABELS N1_2C1 TO N1_2C3 0 'No' 1 'Yes'
             /N2_1C1 TO N2_1C3 0 'No' 1 'Yes'
.
EXECUTE.
SAVE OUTFILE='MakeDyad.sav'.

COMMENT If you want to execute one of the following example, just remove the
        leading asterisk (*) from the appropriate lines and run them.

COMMENT EXAMPLE 1:  ++++++

```



```

COMMENT Example of how to make the variable
      SexType of the dyad: MaleMale, FemaleFemale and Mixed
      supposing there is a variable Gender for each of the
      cases in the dyad called Gender1 and Gender2.
*GET FILE='MakeDyad.sav'.
*COMPUTE SexType = -1.
*IF (Gender2 = Gender1) SexType = Gender1.
*VALUE LABELS SexType -1 'Mixed'.
*FORMAT SexType(F2).
*EXECUTE.
*SAVE OUTFILE='MakeDyad.sav'.

COMMENT EXAMPLE 2: ++++++

COMMENT Example for making tables.
COMMENT Dyadic tables on the first 3 criteria.
*GET FILE='MakeDyad.sav'.
*CROSSTABS
* /TABLES=n1_2c1 BY n2_1c1 BY Group
* /TABLES=n1_2c2 BY n2_1c2 BY Group
* /TABLES=n1_2c3 BY n2_1c3 BY Group
* /FORMAT= AVALUE TABLES /CELLS= COUNT .

COMMENT EXAMPLE 3: ++++++

COMMENT Example of a selection.
COMMENT Select the dyads of reciprocal likers (Criterion 1)
      and write them in a separate file.
*GET FILE='MakeDyad.sav'.
*SELECT IF((n1_2c1 = 1) & (n2_1c1 = 1)).
*EXECUTE .
*SAVE OUTFILE='ReciprocalLike.sav'.

COMMENT EXAMPLE 4: ++++++

COMMENT Another example of a selection.
COMMENT Select the antagonistic dyads:
      case 1 likes case 2 (Criterion 1) and
      case 2 dislikes case 1 (Criterion 2).
*GET FILE='MakeDyad.sav'.
*SELECT IF((n1_2c1 = 1) & (n2_1c2 = 1)).
*EXECUTE .
*SAVE OUTFILE='Antagonistic.sav'.

COMMENT EXAMPLE 5: ++++++

COMMENT Example of a selection followed by a filter.
COMMENT Select from all neutral likers (Criterion 1) as many as
      there are mutual likers according to the table from
      CROSSTABS (Example 2) or from the listing of program MakeDyad.
COMMENT First select the dyads of neutral likers
      and write them in a separate file.
*GET FILE='MakeDyad.sav'.
*SELECT IF((n1_2c1 = 0) & (n2_1c1 = 0)).
*EXECUTE .
*SAVE OUTFILE='NeutralLike.sav'.

COMMENT Select from these neutral dyads as many as reciprocal dyads
      according to the table from CROSSTABS (Example 2) or
      from the listing of program MakeDyad.

COMMENT For Group 48.

*USE ALL.
*COMPUTE Filter_$(Group = 48).
*FILTER BY Filter_$.
*EXECUTE .
*SORT CASES BY Filter_$(D) .
*DO IF $CaseNum = 1.

```

```

*COMPUTE #s_$_1=42.
*COMPUTE #s_$_2=296.
*END IF.
*DO IF #s_$_2 > 0.
*COMPUTE Smpl_1 = UNIFORM(1)* #s_$_2 < #s_$_1.
*COMPUTE #s_$_1 = #s_$_1 - Smpl_1.
*COMPUTE #s_$_2 = #s_$_2 - 1.
*ELSE.
*COMPUTE Smpl_1 = 0.
*END IF.
*FORMAT Smpl_1 (F1.0).
*EXECUTE .

COMMENT For Group 102.

*USE ALL.
*COMPUTE Filter_$=(Group = 102).
*FILTER BY Filter_$.
*EXECUTE .
*SORT CASES BY Filter_$ (D) .
*DO IF $CaseNum = 1.
*COMPUTE #s_$_1=29.
*COMPUTE #s_$_2=210.
*END IF.
*DO IF #s_$_2 > 0.
*COMPUTE Smpl_2 = UNIFORM(1)* #s_$_2 < #s_$_1.
*COMPUTE #s_$_1 = #s_$_1 - Smpl_2.
*COMPUTE #s_$_2 = #s_$_2 - 1.
*ELSE.
*COMPUTE Smpl_2 = 0.
*END IF.
*FORMAT Smpl_2 (F1.0).
*EXECUTE .

COMMENT Now select all the samples and write them in a file.
*USE ALL.
*SELECT IF ((Smpl_1 = 1)
* or (Smpl_2 = 1)
* ).
*EXECUTE .
*SORT CASES BY Group, DyadNr (A).
*SAVE OUTFILE='NeutralLike.sav' /DROP=Filter_$ TO Smpl_2.

COMMENT EXAMPLE 6: ++++++

COMMENT A more complex example.
COMMENT Count per person the number of mutual friends in a new
variable 'NFriends' in the case that friend is criterion 3.

*GET FILE='MakeDyad.sav'.
*COMPUTE IsMutual = N1_2C3 * N2_1C3.
*EXECUTE.
*SORT CASES BY Group (A) CaseNr1 (A) CaseLab1 (A).
*EXECUTE.
*AGGREGATE /OUTFILE='Friend1_aggr.sav'
* /BREAK=Group CaseNr1 CaseLab1
* /friend_1 = SUM(IsMutual).
*
*SORT CASES BY Group (A) CaseNr2 (A) CaseLab2 (A).
*EXECUTE.
*AGGREGATE /OUTFILE='Friend2_aggr.sav'
* /BREAK=Group CaseNr2 CaseLab2
* /friend_2 = SUM(IsMutual).

*GET FILE = 'Friend2_aggr.sav'.
*RENAME VARIABLES CaseNr2 = CaseNr1.
*RENAME VARIABLES CaseLab2 = CaseLab1.
*EXECUTE.
*SORT CASES BY Group (A) CaseNr1 (A) CaseLab1 (A).
*SAVE OUTFILE = 'Friend2_aggr.sav'.

```

```
*GET FILE = 'Friend1_aggr.sav'.
*SORT CASES BY Group (A) CaseNr1 (A) CaseLab1 (A).
*SAVE OUTFILE = 'Friend1_aggr.sav'.

*MATCH FILES /FILE='Friend1_aggr.sav'
*           /FILE='Friend2_aggr.sav'
*           /BY Group CaseNr1 CaseLab1.

*EXECUTE.
*IF Missing(Friend_1) Friend_1 = 0.
*IF Missing(Friend_2) Friend_2 = 0.
*COMPUTE NFriends = Friend_1 + Friend_2.
*EXECUTE.
*VAR LABELS NFriends 'Number of mutual friends'.
*CROSSTABS TABLES = NFriends BY Group
* /FORMAT= AVALUE TABLES / CELLS= COUNT.
```

7 Literature

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