

# DreamSAT

## Automated Dream Data Entry System and Statistical Analysis Tool

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This spreadsheet is designed to facilitate the statistical analysis of dreams that have been coded with the Hall/Van de Castle system of quantitative content analysis. Of course, you still need to read the dreams and do the coding by hand; there's virtually no way to have a computer read English sentences and pull meaning out of them.

DreamSAT automatically generates a number of different reports based on the data you enter:

- Raw frequencies of all the elements that you coded.
- Indexes such as Male/Female Percent, Aggressor Percent, and F/C Index.
- An h-profile of all the indexes, compared to either the male or female norms.
- An A/F Square, which looks at aggressions and friendliness with male and female characters.

Here's what you need to use DreamSAT:

- A pile of dreams that you have hopefully already coded.
- Microsoft Excel 5.0 (or later), running on a Macintosh or Windows system. (Don't worry about RAM and processor speed; if your computer can run Excel 5, it can run DreamSAT.)
- *Basic* knowledge of how to use Excel.
- Detailed knowledge of the Hall/Van de Castle system of quantitative content analysis.

### How it works

You will enter coded dream data into the left side of a worksheet. As you enter the data, formulas on the right side of the sheet figure out whether the characters are male or female, whether the settings are indoor or outdoor, etc. The top row of the spreadsheet adds up the total frequencies for the dream.

When you are finished with a dream, you click a button which activates a series of commands. Your codings are checked, all the numbers on the data entry sheet are saved in a text file on your hard drive, and the top row (containing the frequencies) is copied onto a sheet called "Totals", which keeps track of everything that's been entered so far. Then the data entry sheet is cleared, and DreamSAT is ready for you to enter the codes from another dream.

Once you have entered the data from all the dreams, you can go look at the rest of the sheets, which show you everything you need to know: frequencies, percents, an h-profile, and an A/F Square. You probably shouldn't look at these findings until after you have entered all the raw data, so that you are not influenced by a desire to see results in one direction or another.

## New features

Most of this documentation was written in 1996 and hasn't been updated much since then. (I figured it was more important to put my energy into improving the spreadsheet itself!) There are a few notable features that have been added to DreamSAT since this document was first created:

- **Error checking:** DreamSAT will not let you save files containing codings that don't match the specifications of the Hall/Van de Castle coding system. If there are problems, or if DreamSAT runs too slow with the error checking on, it can be turned off.
- **File management:** DreamSAT tries to make sure that you save all of your files in the same place and with sensible names.
- **Editing:** you can edit a dream that you have previously entered by selecting the dream's number in the Totals sheet and then selecting "Edit this dream" from the DreamSAT menu. Edited files are saved using the "Save edited dream" command, also under the DreamSAT menu.
- **New calculations:** There are a few new formulas (for Self-Negativity Percent, Striving, etc.), but the basic layout remains the same.
- **Greater capacity:** The number of elements allowed in a single dream has been increased, since most people's computers can handle the extra formula calculations these days.

Hopefully these new features will be self-explanatory. If not, don't hesitate to contact me.

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## Before you start

Under normal circumstances, you should have your dreams completely coded *before* you enter them into DreamSAT. This is because DreamSAT creates a small text file for each dream, and DreamSAT cannot modify these files once they've been created. (*You* can modify them if you need to, but DreamSAT doesn't know how.)

DreamSAT is extremely useful if you have a lot of coded dreams lying around that you never bothered to count up and analyze statistically; in that case, you can plunge right in and start entering your data.

But if you haven't coded your dream reports yet, you need to plan your strategy. The best approach, any time you use the Hall/Van de Castle coding system, is to code an entire set of dreams for one category at a time. Therefore, you either have to write all the codes down somewhere else before using DreamSAT, or you can use our favorite method, which we'll summarize here:

- Get yourself a number of highlighting markers, in as many colors as possible. The big pens that have 10 different colors of ink are handy too.
- Go through all the dreams and mark all the characters in one color. Then do all the aggressions in another color, then all the friendliness, etc. (We use a single color for related categories, like success and failure.)
- When you go through the dreams in this manner, you're just looking to see that the dream elements exist, so don't worry about the exact codes; just make sure you find everything. As you get better at using the coding system, you may want to start writing some of the codes in the margins, especially simple, straightforward ones like characters and settings.

- Once you've highlighted all the categories you're interested in, open up DreamSAT and enter the data, one dream at a time. *Now* you need to figure out the actual codes for all the dream elements. Of course, this requires a pretty solid knowledge of the coding system.

(It's *possible* to code dreams one category at a time using DreamSAT, but it requires a lot of futzing around. In a nutshell, you would have to code all dreams for the first category, then use the "Edit this dream" command in the DreamSAT menu to add additional codings one dream at a time.)

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## Setting up your workbook

DreamSAT is a template; when you open it, Excel makes a copy for you to work on, so you never alter the original file. When you first call it up, you will be looking at the sheet named "enter data" in your working copy. "Enter data" is the probably the only place you will need to type anything; the other sheets are automated.

### Cell B5: "Series"

If you don't change cell B5, DreamSAT will think your dream series is called "1996." If that's okay with you, then leave it; but you'll probably want to give it a more meaningful name, like "Fall1977," or "Robert3," or "Subj0007." The series name will be used in the names of the files created by DreamSAT, so Windows users must be sure that the series name is 8 characters or less. If you're using a Macintosh, you can enter up to 27 characters, but you may want to stick with 8 so that your files are compatible with Windows systems.

### Cell C5: "Dream"

This cell contains the number of the first dream in the series; this will probably be 1, but go ahead and change it if you need to. As you enter dreams, C5 will automatically increase. Cells B5 and C5 are used by the formula in cell A5.

### Save your workbook

After filling in the "Series" and "Dream" cells, you should save your working copy with a new name (use the "Save As..." command from Excel's "File" menu). You should probably give your new spreadsheet its own directory or folder on your hard drive, because of the text files that will be created as you work.

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## Entering dream data

Now that you're all set up, it's time to enter the data. We'll go through the spreadsheet one column at a time and show you how to enter your data, with the assumption that you have a pretty good understanding of the Hall/Van de Castle coding system and its terminology.

### Missing columns

Note that columns H, L, and P are missing. This is because each type of social interaction used to have a column that recorded the gender of the characters involved, but that information is now automatically calculated with a formula. We could have removed the three columns altogether, but we wanted to make sure data from earlier versions of DreamSAT would have the same layout as the latest version, so we simply hid the columns from view.

## Shaded cells

Part of the "enter dreams" worksheet is filled in with a gray pattern. You can't enter data in the shaded area, because there are no formulas in the right side of the sheet to calculate data in those cells. We did this to make DreamSAT move as quickly as possible; more formulas would mean you'd have to spend more time staring blankly at your computer screen. We left plenty of room for typical dream data; if you find yourself running out of space often, maybe you should consider excluding abnormally long dreams, since they can skew results anyway. (Hall and Van de Castle's original normative study actually excluded dream reports with less than 50 or more than 300 words; we recommend adhering to those guidelines.)

If you do run out of room and *really* need to enter data in the shaded cells, you can, but you *must* make sure that you extend the formulas down as far as you extend the data. For example, if you need to enter more than 20 characters in column D, make sure you paste extra formulas into columns AD-AL; if you need more space for friendliness, add formulas to columns AW-BE. (You can do this with your mouse; just select the white cells containing the formulas in question, grab the lower right corner of the highlighted box, and drag down into the shaded area.)

## Column D: CHAR/code

This column will contain all of the characters from the dream. Each character should have a code consisting of a number and three letters: no more, no less. Use all uppercase letters for consistency (your keyboard's "Caps Lock" key may come in handy while using DreamSAT), and enter each character in its own cell.

	CHAR
	code
"my friend Betty"	1FKA
"a flock of seagulls"	2ANI
"Batman"	5MPA
"my 5-year-old brother"	1MBC

## Column E: AGGRESSION/init

The "init" column is for the character(s) that initiated the interaction. If more than one character was the initiator, list all characters *in a single cell*, with their codes joined by plus signs. If the dreamer was one of many characters, be sure to *list the dreamer first*, because the spreadsheet only looks for the dreamer at the beginning of the cell.

## Column F: AGGRESSION/code

The "code" column contains the numeric code for the subclass of the interaction that took place (in the case of aggression, from 1 to 8), followed by a symbol that indicates the direction of the interaction. The symbol can only be one of the following: > = R \*. There must *not* be a space between the number and the symbol.

## Column G: AGGRESSION/rec

The format of the "recipient" column is identical to that of the initiator column. Join multiple characters with pluses, and make sure the dreamer comes first. If the interaction was self-directed (i.e., the coding symbol was \*), the dreamer should *not* be entered as the recipient, only as the initiator.

Here are some examples of aggressions, to illustrate the scoring of social interactions:

	AGGRESSION		
	init	code	rec
"The policeman yelled at me."	1MOA	2>	D
"My sister and I hated the mean policeman."	D + 1FTA	1>	1MOA
"I got in a big fistfight with the women."	D	7=	2FUA
"My mom and Geena Davis yelled at Burt Reynolds and me."	1FMA+ 1FPA	2>	D + 1MPA
"The policeman arrested my brother."	1MOA	6>	1MBA
"I cheated 100 strangers out of their life savings."	D	5>	2JSA
"I yelled at the policeman and at my sister."	D	2>	1MOA+ 1FTA
"I thought my hair looked like hell."	D	1*	
"The women and their kids yelled at me..."	2FSA+ 2ISC	2>	D
"...so I just pretended they didn't exist."	D	3R	2FSA+ 2ISC

### Columns I-K: FRIENDLINESS

Friendliness is entered exactly like aggression, except of course that there are only 7 subclasses instead of 8.

### Columns M-O: SEX

Sexual interactions are entered exactly like aggression and friendliness, but there are only 5 subclasses.

### Column Q: ACTIVITIES/init

The "init" column contains the code of the character(s) who engaged in the activity. As always, list the dreamer first if he/she is one of the characters; and if a number of characters are all involved together, put all the codes in a single cell (joined by + symbols).

### Column R: ACTIVITIES/code

Enter one of the activity codes: P, M, L, V, S, A, E, or C. Remember that P and V activities can be interactions, so those letters may be followed by a >, =, R, or \* symbol.

### Column S: ACTIVITIES/rec

This column is only used with P and V activities, and it denotes the character(s) who was/were the "recipient" of the physical or verbal activity. The rules for the "init" column apply here: put the dreamer first (if present), and put a series of characters in a single cell.

	ACTIVITIES		
	init	code	rec
"My aunt flew to Oregon."	1FRA	L	
"I saw Julie across the room."	D	S	
"Norm picked his nose."	1MKA	P	
"The doctors and I were laughing."	D + 2IOA	E	
"He attacked the minister."	1MSA	P>	1IOA
"I kissed Dave passionately."	D	P>	1MKA
"Carla said she liked me..."	1FKA	V>	D
"...so I said I liked her too."	D	VR	1FKA

Note that many interactions will get scored as both activities and as aggressions, friendliness, or sexuality. When this is the case, both sets of codes should look almost identical. For instance:

<i>Dream excerpt</i>	<i>Coding as interaction</i>	<i>Coding as activity</i>
"He attacked the minister"	1MSA 7> 1IOA (agg.)	1MSA P> 1IOA
"I kissed Dave passionately"	D 3> 1MKA (sex)	D P> 1MKA
"Carla said she liked me"	1FKA 2> D (fri.)	1FKA V> D
"...so I said I liked her too"	D 2R 1FKA (fri.)	D VR 1FKA

### Column T: SUCC/char

Since the Hall/Van de Castle coding system does not distinguish between different classes of success, all you need to record is the code of the character(s) who achieved the success; don't type SU. List the dreamer first, if the dreamer was part of a group. DreamSAT does not record consequences of success, failure, misfortune, or good fortune, since they happen so rarely and are not used in any meaningful statistical indexes.

	SUCC
	char
"I finally passed Calculus III."	D
"Fred and Louise won the bridge tournament."	1MKA+
	1FKA
"He convinced me to buy a solar-powered necktie."	1MUA

### Column U: FAIL/char

This is exactly like the "SUCC" column; just enter character codes (*not* FL), with the dreamer first if present.

	FAIL
	char
"I couldn't get rid of the mosquitoes."	D
"The senator lost his bid for re-election."	1MOA
"Despite the firefighters' efforts, the house was destroyed."	2JOA

**Column V: M-FORTUNE/code**

This is *just a number*, from 1 to 5, which indicates the subclass of the misfortune. Do *not* type M1, M2, etc.

**Column W: M-FORTUNE/char**

This is the character that was involved in the misfortune. Same rules as always: dreamer goes first, etc.

		M-FORTUNE	
		code	char
"My whole family got the flu."		5	2JYA
"Patrick and I got lost, so we were ten minutes late."		1	D + 1MKA
"Half the zebra herd died because of the drought."		6	2ANI

**Column X: G-FORT/char**

Like success and failure, good fortune has no subclasses, so just enter the character code(s). You know the drill.

		G-FORT
		char
"Erma won the lottery."		1FKA
"I found out that with the new tax laws, I'd get a bigger refund."		D

**Column Y: EMOT/code**

This is a two-letter code for one of the five emotions: HA, SD, AN, AP, or CO. (And remember that anger can often be scored as a level 1 aggression, if you didn't put it there already.)

**Column Z: EMOT/char**

This is the character(s) that experienced the emotion.

		EMOT	
		code	char
"Kelly was crying because her pet hermit crab had died."		SD	1FKA
"I was really nervous about my Spanish test."		AP	D
"I had never seen him before, but he seemed happy to see me."		HA	1MSA
"The waitress and the manager were really annoyed with the guy who kept coming in and falling asleep at Table 5."		AN	1FOA+ 1IOA

### Column AA: SET/code

Two-letter setting codes. If there was no setting (which happens rarely), enter NS. Otherwise, the first letter should be either I, O, or A, and the second letter should be U, F, D, G, or Q.

	SET code
"There was a big lake, and a little path wound along the cliff."	OU
"I was back in my hometown, standing under the stoplight."	OF
"I was in the French Quarter of New Orleans."	AG
"It looked like my room, but there were stained-glass windows."	ID

### Column AB: OBJ/code

This column should contain two-letter object codes, with each code in its own cell. Most studies do not make use of this coding category.

	OBJ code
"a pile of coins"	MO
"his big toe"	BE
"the New Jersey Turnpike"	ST
"shingles on the roof"	AD
"a glow-in-the-dark frisbee"	IR
"a bowl of fruit"	FO
"the crabapple tree"	NA
"my computer's modem"	CM

### Column AC: MOD/code

This column contains the codes for modifiers, which always consist of one capital letter followed by a plus or minus sign. In practice, this category is even less commonly used than objects.

	MOD code
"A black cat."	C-
"A tall building."	S+
"I thought he was gorgeous."	E+
"It was freezing in the attic."	T-
"I ran as fast as I could."	V+

### Click the button

When you have entered all the data for a single dream, simply click the large button on the left side of the worksheet marked "Click here to save this dream and continue." The data will be saved and you'll be ready to move on. If you are done with your pile of dreams, then you can go on to the next section, "Totals."

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## Totals

Every time you finish entering a dream, a summary of that dream is added to the Totals worksheet. This sheet looks at all the summaries and keeps track of two things: raw frequencies of dream elements, and how many dreams contain at least one occurrence of each element.

### Row 1: Frequencies

The formulas in row 1 simply sum all the numbers from row 5 on down. On the left side of the spreadsheet (columns D through AC), most coding categories take up more than one column; in those cases, only the "code" column is summed in row 1.

### Row 2: Number of dreams

Row 2 counts how many dreams in the set contain each dream element. The formulas are in the following format: `=COUNTIF(XX5:XX16384, ">0")`. We don't use a simple COUNT function because then the zeroes would be counted, and we don't want that.

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## Percents

This sheet contains all the percents and indexes that you'll need if you want to get a quick glance at your data or publish the results of a study. Also included are the Hall/Van de Castle norms for male and female college students, and h statistics that compare your data to the norms.

When you first open DreamSAT, the Percents sheet contains all of the most commonly used percentages. You probably will not want to use every single one of them, and you should go ahead and remove the ones you don't need. The best way to do this is to either hide or delete entire rows, by selecting the row headings on the left side of the window.

If you want to add another row to the table, add its name to column B and the appropriate normative finding to column D or E. Then copy the h formula from column F or G and paste it into your new row. You'll need to create your own formula for column C; see the next section for information on doing this using named cells.

### Column C: Your series

The numbers in column C are generated by reading numbers from the Totals sheet. But rather than cell references, the formulas use *names*. Most of the numbers in row 1 (and the left side of row 2) of Totals have easy-to-remember names, such as `char_female` and `agg_physical`. You can see the names of the cells by moving your cursor through row 1 of Totals and watching Excel's name box on the left side of the formula bar. All of the names in the major coding categories begin with short abbreviations: `char`, `agg`, `fri`, `sex`, `act`, `succ`, `fail`, `mf`, `gf`, `emot`, `set`, `obj`, & `mod`.

If you want to add more percentages or indexes to the Percents sheet, you can use the named cells to calculate just about anything you need. For instance, you could calculate the average number of settings per dream by entering the following formula: `=set_total/dreams_total`.

## Columns D & E: Norms

These columns contain the Hall/Van de Castle norms for male and female college students, as reported in *Finding Meaning in Dreams: A Quantitative Approach*, by G. William Domhoff. If you add anything to column C, you should also add something to column D or E if you want to include your findings in an h-profile. You can get the normative figures from Domhoff's book or from our Web site: <http://zzyx.ucsc.edu/~dreams/Norms/>.

## Columns F & G: h vs. males or females

When we designed this spreadsheet, we obviously didn't know whether you were going to be using it to study dreams of males or females, so we built in formulas that allow you to do either. The h values in columns F and G are calculated using a formula on a hidden macro sheet. In case you're curious, the formula is as follows:

$$h = \cos^{-1}\left[2(1 - P_{\text{sample}}) - 1\right] - \cos^{-1}\left[2(1 - P_{\text{norms}}) - 1\right]$$

[The P's are proportions between 0 and 1, and the cosine function uses radians.]

**Note:** The A/C, F/C, and S/C indexes do NOT use the h statistic, because h only works for proportions between 0 and 1. It is theoretically possible (although highly unlikely) that a interaction/character ratio might exceed 1. Therefore, DreamSAT simply uses the numerical difference between the two ratios, multiplied by 2.36 to bring the numbers into the same range you'd expect from the h statistic. (2.36, or  $3\pi/4$ , was determined through empirical randomization studies.)

## h-profile buttons

There are two buttons in cell B2. If you are going to be comparing your data to the male norms, click the "male" button. For the female norms, click the "female" button. This initializes the h-profile on the next sheet. Any time you add or remove rows from the Percents table, click the button again to recalculate the h-profile.

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## h-profile

The h-profile is automatically calculated using data from the Percents sheet, but you need to click one of the "Make h-profile" buttons to start the process (see above). Once you've clicked a button, the h-profile will be continually updated every time any number is changed on the Totals or Percents worksheets.

Feel free to change the formatting, colors, scale, etc. of the h-profile chart. You may want to make it three-dimensional, or you could set it up horizontally rather than vertically on the page. (You will almost certainly want to increase the font size on the category axis; we had to make it small so that everything would fit on the initial, unabridged chart.) If you know your way around DreamSAT and are an experienced Excel user, you can even add a new column to the Percents sheet and compare two sets of data on the same h-profile. (We also have a specialized, but still rough, spreadsheet that can do this for you; ask me for a copy of "Compare.xlt" if you're interested.)

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## **A/F Square**

The A/F Square shows the pattern of aggressions and friendliness with respect to the gender of the characters with whom the dreamer interacts. (As on the Percents sheet, the formulas here actually use names rather than cell references; for example, the "Aggressions with male characters" cell contains the formula =char\_male/agg\_male.)

We have provided the male and female norms in separate A/F Squares below the square for your sample. If you are studying female dreamers, you may want to delete the male norms to get them out of the way (and vice versa).

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*<http://www.dreamresearch.net/DreamSAT/>*