A 5-DIMENSIONAL MAGIC DIE

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This extends the 3-dimensional HOT-PAD and the 4-dimensional SALT-MINE dice described in "Magic Word Dice", May, 2007 to a fifth dimension (see also J. Puder's remarks in the August 2007 Colloquy). A schematic (2-dimensional!) drawing of the 5-cube follows. It is based on the word pair POLAR-MINES and every node word uses exactly one each of the five pairs 1 = P-M, 2 = O-I, 3 = L-N, 4 = A-E and 5 = R-S.

On the back cover is the double torus representation that will be easiest to use for the magic.

The 32 nodes. All words in NI2 unless noted

1 POLAR
2 MOLAR
3 POLAS (Beers, Sp.)
4 MOLAS
5 POLES
6 MOLES
7 POLER
8 MOLER
9 PILER
10 MILES
11 PILAS (Butteries, Sp.)
12 FILES
13 MOLAR (Vintage Recording Tape)
14 MILAS (Mines, Sp.)
15 PILES
16 MILES (Mines, Sp.)
17 PIAS (Batteries, Sp.)
18 MINAS
19 PINES
20 MINES
21 PONES
22 MINES
23 PONES (Notice, Slaves owner)
24 MINAS
25 POLAR
26 PONAR (Polish help group)
27 PINER
28 MINER
29 PONER (To put, Sp.)
30 PONER
31 PINAR
32 PINAR
The magic trick is performed as follows. The subject starts on a word-node of his choice and moves in 5-dimensions as often as he pleases, calling out the number (dimension) of the edge he travels as he does so. When he is finished, he gives the magician either the start or end node word and the magician immediately gives the missing word.

The Method. The magician simply keeps track of the five dimension numbers noting that $x+\bar{x} = 0$ for all $x$. For example, suppose the subject calls out 4, 3, 2, 4, 1, 5, 2 and stops. The 4s and 2s cancel leaving only 3, 5, and 1. This means that the two terminal words differ in the 1$\text{st}$, 3$\text{rd}$ and 5$\text{th}$ places. So if one word was POLAR the other word would have to be MONAS.