Using table 4 and the .80 probability of being correct that they site on page 11, they following can be stated.

There are 32 possible 5-bit permutations for generated outputs. All **32** can be grouped with into a 0, 1, or 2 error message box with a .94208 reliability. (Some of the permutations/combinations fit into both 1 and 2 error boxes, and all of the 2 error entries ~~are redundant~~ match to both the (00000 and the 11011) or the (01110, and 10101) correct messages. That is, 2 error messages do not (as P&T suggest) uniquely identify a correct message, but only narrow the likely choices to 2.

Because of the 4 correct message codes they chose, several things happen. If a "correct" message is received, (eg. 00000) then it must be remembered that it also could be a 3 error message of 01110 or 10101,

a 4 error message of 11011. Since

a 0 error message ($p = .32768$) is roughly

6 times as likely as a 3 error message ($p = .0512$)

and 50 times as likely as a 4 error message ($.0064$)

than the 00000 choice is at least 6 times

($p \approx .82$) more likely than each of the other choices,

but is only about 3 times ($p = .67$) $[.0512 + .0512$

$+ .0064 = .1088]$ more likely than all of the

other messages. Most of the 1 error messages

have even smaller odds of relating to their

quite uniquely identifying a specific correct

message. For instance, the receipt of 00100 is

(as shown in Table 4) a one error message of 00000.

However, (not shown in Table 4) it also is a 2 error

message of both 01110 and 10101. Since

the odds of a two error message are $p = .2048$ and

these two probabilities, the message 00100 gives

only an ~ .5 chance of the message 00000

(being either 01110 or 10101)

being correct ($p = .4096$) relative to $p = .4096$ for $(.2048 + .2048$

The statistics get heavy here, and I haven't tried to do them fully, but the curve for "no error correcting" is very wrong (see inverted green curve for on Table 4) and I would bet that the "error correcting" curve is also erroneously high. Hence, I am suspicious of the accuracy of the "majority vote" curve.

SG1I

$$00000$$
$$01110$$
$$10101$$
$$11011$$

$$\underline{0} \quad \underline{1} \quad \underline{1} \quad \underline{1} \quad \underline{1}$$

$P_4 (00000) = .00128$

$P_3 (01110) = .08192$

$P_3 (10101) = .00512$

$P_2 (11011) = .02048$

$P_c \cong .75$

$\sum = .02688$

$\sim 3 : 9$

$$P_0 = (.8)^5 = .32768$$

$$P_1 = (.8)^4 (.2) = .08192$$

$$P_2 = (.8)^3 (.2)^2 = .02048$$

$$P_3 = (.8)^2 (.2)^3 = .00512$$

$$P_4 = (.8)^1 (.2)^4 = .00128$$

$$P_5 = (.2)^5 = .00036$$

$$\underline{0} \quad \underline{1} \quad \underline{1} \quad \underline{0} \quad \underline{1}$$

$P_3 (00000) = .00512 \quad (12.5\%)$

$P_2 (01110) = .02048 \quad (37.5\%)$

$P_2 (10101) = \quad (37.5\%)$

$P_3 (11011) = \quad (12.5\%)$