TRIPARTITE NUMERICAL TAUTONYMS

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A numerical tautonym is traditionally defined as a word which can be divided into a sequence of at least two (adjacent) parts, where each part has both the same number of letters as well as the same alphabetic value sum (see David Morice, *The Dictionary of Wordplay*). For example, the four letters in the word THIS can be transposed into the corresponding numbers 20-8-9-19 (where A = 1, B = 2...Z = 26), which can be divided into the two parts 20-8 and 9-19. If the numbers in the first part are added together, then we obtain 28, which is precisely the sum of the two numbers in the second part. Note that the two-part numerical tautonym THIS is 'balanced' in two respects: The numerical value of each of the two parts is identical, as is the number of letters in each part.

Given the standard definition of numerical tautonym it should therefore come as no surprise that the articles that have appeared in Word Ways on this topic have limited their investigation to words whose total number of letters can be evenly divided by the number of parts in that word. For example, Leslie Card (Word Ways 3, 1970 and Word Ways 4, 1971) presents a sizeable list of two-part six-letter numerical tautonyms and two-part eight-letter tautonyms. In addition to examples like these, Darryl Francis (Word Ways 3, 1970) considers two-part numerical tautonyms for words consisting of ten and twelve letters. More recently, Susan Thorpe (Word Ways 44, 2011) investigates two-part six-letter 'digitalized' numerical tautonyms.

In the penultimate article referred to above Darryl Francis also presents a small number of numerical tautonyms with three, four or five parts (in which each part consists of either two or three letters). For example, the word NOTION can be divided into three parts of two letters each, where each part has a numerical value of 29 (NO-TI-ON: 14+15=20+1=15+14). The author observes that numerical tautonyms consisting of three or more parts are 'rare words' – an assessment I share, as I point out below.

In the present article I consider numerical tautonyms like NOTION, which consist of three parts, i.e. tripartite numerical tautonyms (TNTs). In contrast to the work cited above, I relax the restriction that the number of letters in the word must always be evenly divided by the number of its parts. A consequence of my modification of the conventional rules is that the number of letters within the three parts in a TNT need not be identical to the number of letters within the other parts. This means that TNTs are tautonyms only because each of the three parts has the same alphabetic value sum.

Before I present concrete examples I consider first in Table 1 the types of TNTs that are theoretically possible given a total word length between three and six letters. In Table 1 '□' represents a letter and '|' the break between the three parts of a TNT. In the left hand column I have listed the total number of letters per TNT word. If there are three separate parts for any given word, then there are two ways of determining the dividing line between them. The first way is illustrated in the second column. All of these examples have in common that the letter distributions among the three parts are symmetrical in the sense that the first part and the third part must have the same number of letters. In the final column we can see that it is also possible in theory to have an asymmetrical letter distribution. I consider it to be axiomatic that the letters within each part must be adjacent, otherwise one of the parts in a TNT could consist of letters which are situated between a letter which belongs to a different part.

Table 1: Letter distributions in tripartite numerical tautonyms:

<table>
<tr><th>number of letters per word</th><th>symmetrical</th><th>asymmetrical</th></tr>
<tr><td>3</td><td>□|□|□</td><td>-------</td></tr>
<tr><td>4</td><td>□|□□|□</td><td>□□|□|□ or □|□|□□</td></tr>
<tr><td>5</td><td>□□|□|□□
□|□□□|□</td><td>□|□|□□□ or □|□□|□□ or □□|□□|□ or □□□|□|□</td></tr>
<tr><td>6</td><td>□□|□□|□□
□|□□□□|□</td><td>□|□|□□□□ or □|□□|□□□ or □|□□□|□□ or □□|□|□□□
or □□|□□□|□ or □□□|□|□□ or □□□|□□|□</td></tr>
</table>

For a word to consist of three (non-null) parts there must clearly be at least three letters; hence, the minimal number of letters in a TNT is three. By definition, three-letter TNTs must therefore always be symmetrical and palindromic. There can only be one type of symmetrical four-letter TNT (see above), while the two other types of four-letter TNTs are asymmetrical. Symmetrical and asymmetrical TNTs consisting of five or six letters are as indicated above.

Symmetrical TNTs can be thought of as a type of balanced word because they consist of three parts with the same numerical value and because the first part and the third part consist of the same number of letters. This being said, they are not as balanced as traditional numerical tautonyms, which consist of two or more parts, where each part must contain an identical number of letters.

Why are TNTs worthy of study? One reason is that they are rare, as previously noted. In this respect, TNTs differ significantly from standard numerical tautonyms. For example, Leslie Card lists an astounding 519 six-letter (two-part) numerical tautonyms – a number which pales in comparison with the TNTs I list below. A second reason – one clearly related to the first – concerns the connection between TNTs and palindromes: While all palindromes with an even number of letters are also two-part numerical tautonyms (e.g. DEED: 4+5=5+4), very few palindromes – regardless of the number of letters – are TNTs. Put differently, in compiling a list of two-part numerical tautonyms of six letters, for example, one could simply begin by procuring a list of six-letter palindromic words nowadays available through the internet. But this procedure does not work with TNTs. The fact that only a small subset of all palindromes can be included in the set of TNTs is one of the reasons why TNTs are – in my view – more interesting that traditional numerical tautonyms, in which the total number of letters in the word must be evenly divided by the number of parts in the word.

Now that I have built up the suspense with my somewhat long-winded theoretical preamble, the brave reader who has made it this far will expect me to present an extensive list of TNTs. Sadly, I do not have one. As mentioned above, TNTs – especially those of the symmetrical variety – are very difficult to find and this will be obvious once the reader considers my paltry list of examples. Assuming that there are more TNTs than the ones I have listed here, the reader is welcome to do future logologists a service by expanding the present list in the next issues of Word Ways.

According to Webster's Third and OED (online) there are no three-letter TNTs (not including acronyms or abbreviations), but when one consults other works two examples can be found: (i) AAA (1=1=1): According to the sources cited in Dmitri Borgman's article from 1985 (Word Ways 18), AAA is the chief of the signet-bearers in the land of Kens in the court of King Aspalut of the XXVth dynasty; (ii) zzz (26=26=26): The representation of sleeping or snoring.

Most readers of this journal are no doubt aware of the fact that many dictionaries do not deem it necessary to include this onomatopoetic word on their pages.

I have found three four-letter symmetrical TNTs in the aforementioned sources. The first example is an interjection and the second is a type of rock.

HECH	(H-EC-H: 8=5+3=8)
MALM	(M-AL-M: 13=1+12=13)
SODS	(S-OD-S: 19=15+4=19)

In addition to the examples listed above the German word NEIN (N-EI-N: 14=5+9=14) can be included for those readers who might be interested in non-English TNTs. (An asymmetrical four-letter English TNT is the word GELL (GE-L-L: 7+5=12=12); I confess that I have restricted my TNT search – regardless of the number of letters – to the symmetrical variety.)

Examples of symmetrical five-letter TNTs are listed below. Recall from Table 1 that there are two types, namely □□|□|□□ and □|□□□|□. Note that SEXES is the only palindrome on this list.

CLOMB	(CL-O-MB: 3+12=15=13+2)
HEMAL	(HE-M-AL : 8+5=13=1+12)
REWIN	(RE-W-IN : 18+5=23=9+14)
SEXES	(SE-X-ES: 19+5=24=5+19)
WAXES	(WA-X-ES: 23+1=24=5+19)
SANDS	(S-AND-S: 19=1+14+4=19)
SKAGS	(S-KAG-S: 19=11+1+7=19)

The number of TNTs could be expanded by including proper names which might not be listed in the sources cited above. Two examples of five-letter symmetrical TNTs are FIONA (FI-O-NA: 6+9=15=14+1) and the palindrome MANAM (MA-N-AN: 13+1=14=1+13), which is an island in Papua New Guinea.

Here are four German five-letter TNTs. All four words are very common and can be found in most lexica for that language.

ARSEN	(AR-S-EN: 1+18=19=5+14)	'arsenic'
KITAS	(KI-T-AS: 11+9=20=1+19)	'day care centers for children'
MANIE	(MA-N-IE: 13+1=14=9+5)	'mania'
RASEN	(RA-S-EN: 18+1=19=5+14)	'lawn'

The symmetrical TNTs with six letters listed below include nine of the ten words provided by Darryl Francis in the article cited earlier. (His tenth example is GLENDO, which is a town in Wyoming). The one example I have listed below which was not mentioned by Darryl Francis is SELLES. In the final column I list the meanings for the benefit of readers who might not include dictionary reading as one of their pastimes.

BULKER	(BU-LK-ER: 2+21=12+11=5+18)	'a petty thief'
FROISE	(FR-OI-SE: 6+18=15+9=19+5)	'a kind of pancake'
ILLING	(IL-LI-NG: 9+12=12+9=14+7)	'evil-doing, obsolete'
NOTION	(NO-TI-ON: 14+15=20+9=15+14)	'idea'
REAVER	(RE-AV-ER: 18+5=1+22=5+18)	'a robber'
SELLES	(SE-LL-ES: 19+5=12+12=5+19)	'saddle, archaic'
SHRIVE	(SH-RI-VE: 19+8=18+9=22+5)	'to impose penance upon'
STRUTS	(ST-RU-TS: 19+20=18+21=20+19)	'strut, inflected form'
TALING	(TA-LI-NG: 20+1=12+9=14+7)	'the telling of tales'
VAINER	(VA-IN-ER: 22+1=9+14=5+18)	'vain, comparative form'

Note that all of the six-letter TNTs listed above are of the form □□|□□|□□. The only example of a □|□□□□|□ TNT of which I am presently aware is the palindromic word REDDER (18=5+4+4+5 =18).

To my knowledge the only TNT longer than six letters is the word TRANSFUND (TRA-NSF-UND: 20+18+1=14+19+6=21+14+4), although I confess that I have only looked for this type of example in a rather haphazard fashion. The courageous reader is invited to devote her or his time and energy to this endeavor.

It should go without saying that a diligent logologist could apply the same principles discussed above for TNTs in Table 1 to numerical tautonyms consisting of four, five or six parts.

I conclude with a question which is intended to serve as the basis for a logological meditation: Is it a coincidence that the majority of the English TNTs listed above are rare or obsolete words or does the English language simply have a strong bias against TNTs and if so, why?