The letter pattern of some word genres is only a whisker away from the letter pattern of other word genres. My current objective is to change a word of one genre into a word of another genre by swapping the positions of just TWO of its letters. By this means, some tautonyms with the letter pattern 1212 (TOTO) make palindromes with the letter patterns 2112 and 1221 (OTTO and TOOT) simply by swapping the positions of the first 2 letters, or last 2 letters, respectively. This is a simple example but, by judicious letter swapping, longer words can be brought into play. The two letters which are swapped can occupy any position in the word and don’t necessarily have to be adjacent as they are in TOTO. The genres of word under scrutiny here are palindromes, tautonyms, Miami words and pair isograms.

Unreferenced words can be found in the Oxford English Dictionary, Second Edition. Locations are taken from the United States Board on Geographic Names (BGN). These are populated places unless indicated otherwise. References for other words are given at the end. Abbreviations and acronyms are not admitted.

PALINDROMES AND TAUTONYMS

Only palindromes with an even number of letters can be considered for transposal to tautonyms.

4-LETTER WORDS

In 4-letter words, alternately swapping the first 2 letters, and then the last 2 letters, can produce a circle of alternating palindromes and tautonyms, two of each (swapped letters are underlined). The circle is reversible.

The following examples are based on a list of A - Z palindromes. The ‘X’ circle is incomplete.

<table>
<thead>
<tr>
<th>Palindrome (1221)</th>
<th>Tautonym (2121)</th>
<th>Palindrome (2112)</th>
<th>Tautonym (1212)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANNA</td>
<td>NANA</td>
<td>NAAN</td>
<td>ANAN</td>
</tr>
<tr>
<td>BAAB (surname)</td>
<td>ABAB (ch)</td>
<td>ABBA</td>
<td>BABA</td>
</tr>
<tr>
<td>COOC (ch)</td>
<td>OCOC (hill - Mexico)</td>
<td>OCCO (Peru)</td>
<td>COCO</td>
</tr>
<tr>
<td>DAAD (edd)</td>
<td>ADAD</td>
<td>ADDA (w2)</td>
<td>DADA</td>
</tr>
<tr>
<td>ESSE</td>
<td>SESE</td>
<td>SEES</td>
<td>ESES (ospd)</td>
</tr>
<tr>
<td>FAAF (wadi - Somalia)</td>
<td>AFAF (Ethiopia)</td>
<td>AFFA (w2)</td>
<td>FAFA (Benin)</td>
</tr>
<tr>
<td>GAAG (chilblain - Manx)</td>
<td>AGAG (mamsp)</td>
<td>AGGA, Tabelkozet el (oasis - Algeria)</td>
<td>GAGA</td>
</tr>
<tr>
<td>HUUH (p2)</td>
<td>UH-UH</td>
<td>UH-HU (edd)</td>
<td>HUHU</td>
</tr>
<tr>
<td>ISSI (stream - Benin)</td>
<td>SISI</td>
<td>SIIS</td>
<td>ISIS</td>
</tr>
<tr>
<td>JAAJ (dje)</td>
<td>AJAJ, Qal' at al (ruin - Bahrain)</td>
<td>AJJA, Oulad (Morocco)</td>
<td>JAJA (ipfb)</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------</td>
<td>-----------------------</td>
<td>------------</td>
</tr>
<tr>
<td>KAAK</td>
<td>AKAK (Gabon)</td>
<td>AKKA</td>
<td>KAKA</td>
</tr>
<tr>
<td>LAAL (edd)</td>
<td>ALAL (ch)</td>
<td>ALLA (w2)</td>
<td>LALA</td>
</tr>
<tr>
<td>MAAM</td>
<td>AMAM (locality - Ethiopia)</td>
<td>AMMA</td>
<td>MAMA</td>
</tr>
<tr>
<td>NEEN</td>
<td>ENEN</td>
<td>ENNE (wadi - Chad)</td>
<td>NENE</td>
</tr>
<tr>
<td>ONNO (Italy)</td>
<td>NONO</td>
<td>NOON</td>
<td>ONON</td>
</tr>
<tr>
<td>PAAP (edd)</td>
<td>APAP, Sungai (stream - Malaysia)</td>
<td>APPA (Bantoid lang.)</td>
<td>PAPA</td>
</tr>
<tr>
<td>QAAQ (Arabic: crow)</td>
<td>AQAQ (well - UAE)</td>
<td>AQQQA, Kafr (Lebanon)</td>
<td>QAAQA (stream -- Lesotho)</td>
</tr>
<tr>
<td>REER</td>
<td>ERER</td>
<td>ERRE</td>
<td>RERE</td>
</tr>
<tr>
<td>SAAS (ch)</td>
<td>ASAS (stream - Eq. Guinea)</td>
<td>ASSA</td>
<td>SASA (w2)</td>
</tr>
<tr>
<td>TAAAT (edd)</td>
<td>ATAT, Aarid el (slope - Lebanon)</td>
<td>ATTA</td>
<td>TATA</td>
</tr>
<tr>
<td>USSU</td>
<td>SUUS</td>
<td>SUUS (w3)</td>
<td>USUS (ch)</td>
</tr>
<tr>
<td>VAAV (edd)</td>
<td>AVAV (Turkey)</td>
<td>AVVA (p2)</td>
<td>VAVA (stream - Togo)</td>
</tr>
<tr>
<td>WAAW (edd)</td>
<td>AW-AW</td>
<td>AWWA, Abu (Sudan)</td>
<td>WAWA</td>
</tr>
<tr>
<td>XAAAX (area - Somalia)</td>
<td>XAAX</td>
<td>XAXA (China)</td>
<td>XAXA (China)</td>
</tr>
<tr>
<td>YAAY (p2)</td>
<td>AYAY</td>
<td>AYYA (stream - Russia)</td>
<td>YAYA (w2)</td>
</tr>
<tr>
<td>ZAAZ (a company)</td>
<td>AZAZ (name in Bible)</td>
<td>AZZA (hill - Egypt)</td>
<td>ZAZA (film title)</td>
</tr>
</tbody>
</table>

**6-LETTER WORDS**

As a constraint, I only admit 6-letter words having three different letters of the alphabet (as opposed to two different letters). In 6-letter words, the transposals are accomplished by alternately swapping the 1st and 3rd letters, then the 4th and 6th letters. Once more, the circle is reversible.

As previously, these examples are based on a list of A-Z palindromes. In this case, several circles are incomplete.

---

**palindrome (123321)**

- ABOOBA (well-Somalia)
- BATTAB Khor(wadi-Sudan)
- CASSAC
- DISSID
- EALLAE (p2)
- FINNIF
- GORROG (Somalia)
- HALLAH
- IRAARI (WW93251)
- JILLIJ, Burj (lighthouse - Tunisia)
- KINNIK
- LAKKAL, Kef (mount. - Algeria)
- MUSSUM

**tautonym (321321)**

- ABAPOBA (Papua NG)
- TABTAB, HASS(well-Algeria) TABBAT (wadi-Algeria)
- SACSAC
- SIDSID (point in Philippines)
- LAELAE(island-Indonesia)
- NIFNIF (Bilin:light rain)
- ROGROG (Sudan)
- LAHLH (hill - Lebanon)
- ARIARI (Colombia)
- LIJILJ, AL (well - Yemen)
- NIKNIK (name of a puppet)
- KALKAL (well - Djibouti)
- SUMSUM (Afghanistan)

**palindrome (321123)**

- ABOABO(stream-Ghana)
- BATBAT (Philippines)
- SADDIS (Philippines)
- EALEAL Beer(astronomer)
- NIFFIN (bay - Papua NG)
- ROGGOR (computer game)
- LAHALH, Ain Abd (spring HALHAL (mountains - Morocco)
- ARIIRA (tumulus - Tunisia)
- ARIIRA (a Japanese game)

**tautonym (123123)**

- ABBOBO (stream - Ghana)
- BRJLIDJ, Bail (lighthouse - Tunisia)
- JIKKIN
- LAKLAK, Sef (mount. - Algeria)
- MUSMUS (Ecuador)
NAMMAN
ORI-IRO (p2)
POSSOP (p2)
QAZZAQ
RAGGAR (wadi - Somalia)
SANNAS
TERRET
UREERU
VOLLOV (surname)
WERREW (p2)
XARRAX (WW94158)
YANNAY, Bet (Israel)
ZURRUZ (WW93251)

PALINDROMES AND MIAMI WORDS

Miami words have the letter pattern 12?12 (see Miami Words 2000014). With 5 letters, they can be transposed to make palindromes (and vv) but not tautonyms or pair isograms, both of which have an even number of letters. Below, a list of A - Z palindromes is flanked by Miami words. The Miami words on the left are made by swapping the first 2 letters of the palindromes; those on the right are made by swapping the last 2 letters of the palindromes. Note that the pairs of Miami words are reversals.

**Miami word (21321)**
KA(IA) (pull)
ABRAB (well - Sudan)
ACMAC (Philippines)
ADRAD (greatly afraid)
SETSE (a pan in Botswana)
AFRAF (a Christian name)
UGRUG (pull)
AH(LAH) (wadi - Oman)
LI(IALI, Ain el (spring - Tunisia)
AJNAJ (an Esperanto word)
AKCAK, Asagi (Turkey)
ALHAL (hill - Morocco)
AMRAM (wadi - Israel)
ANSAN (N. Korea)
ROERO, Monteu (Italy)
APRAP (a music magazine)
UQRUQ (a Turkish word)
ARSAR Lerrnagagat (mountain - Armenia)
ESNES (old word=day-labourers)
ATFAT Haydar (Egypt)
AURAU (Germany)
EVLEV (surname)

**Palindrome (12321) A - Z**
AKIK (p2)
BARAB Chah (Afghanistan)
CAMAC (surname)
DARAD, El (Somalia)
EST-SE (ME 'East Sea' - p2)
FAFAR (p2)
GURUG (p2)
HALAH (edd)
ILIALI (p2)
JANAJ (Egypt)
KACAK(stream-Czechoslovakia)
LAHAL (Beng Lahal Pruol - lake in Cambodia)
MARM (=marram-reed grass)
NASAN, Um (island - Bahrain)
ORERO (facility center-Kenya)
PARAP (Australia)
QURUQ (Iran)
RASAR (15th century ‘raiser’)

**Miami word (12312)**
AKIK(ak uskwogmiut village-hod)
BARBA (Latin: a beard - ch)
CAMCA (stream - Moldova)
DARDA (Albania)
EST (favours)
FAFAR (an Abbey near Rome)
GURGU (stream - Afghanistan)
HALHA Horoo (Mongolia)
ILAIL (hill - Kenya)
JANJA (Sierra Leone)
KACKA, Kuznika (Poland)
LAHLA (lake - Papua NG)

**ESNES (old word=day-labourers)**
SENES(pl. of ‘senex’-old man)
Saffe (farm - Algeria)
UARAU (East Timor)
VELEV (p2)

**ORI-IRO (p2)**
IROIRO (anglicized 'women')
IROIRI (an Ashaninka language of Peru word)
SOPSOP (Uganda)
ZAQQAQ (a ruin in Libya)
GARGAR (stream-Armenia)
NASNAS
RETRET
ERUERU (surname of a Sheffield volleyball player in UK)
LOVLOV (French love term)
REWWER (p2)
RAXXAR (an antibiotic)
NAYNAY (stream-Jamaica)
RUZRUZ (a web site)

**POSSOP (p2)**
SOPPOS (Colombia)
SOPPOS (cat name on web)
GARRAG (Morocco)
SANSAN (Guinea)
TERTER
UREURE, Te(mt. New Zea.)
VOL VOL (= volvo)
WERWER (area in Germany)
XARXAR (Azerbaijan)
YANYAN (Nigeria)

**QAZZAQ**
ZAQQAZ (cat name on web)
QUQQAZ (a ruin in Libya)
RAGGAR (wadi - Somalia)
GARRAG (stream-Armenia)
NAYNAY (stream-Jamaica)
RUZRUZ (a web site)

**RAGGAR**
GARRAG (stream-Armenia)
NAYNAY (stream-Jamaica)
RUZRUZ (a web site)

**SANNAS**
NASNAS

**TERRET**
RETRET

**UREERU**
ERUERU (surname of a Sheffield volleyball player in UK)

**VOLLOV**
LOVLOV (French love term)

**WERREW**
REWWER (p2)

**XARRAX**
RAXXAR (an antibiotic)

**YANNAY, Bet (Israel)**
NAYNAY (stream-Jamaica)

**ZURRUZ**
RUZRUZ (a web site)

**Miami words**

AKIK (pull)
BARAB Chah (Afghanistan)
CAMAC (surname)
DARAD, El (Somalia)
EST-SE (ME 'East Sea' - p2)
FAFAR (p2)
GURUG (p2)
HALAH (edd)
ILIALI (p2)
JANAJ (Egypt)
KACAK (stream-Czechoslovakia)
LAHAL (Beng Lahal Pruol - lake in Cambodia)
MARM (=marram-reed grass)
NASAN, Um (island - Bahrain)
ORERO (facility center-Kenya)
PARAP (Australia)
QURUQ (Iran)
RASAR (15th century ‘raiser’)

**ESNES (old word=day-labourers)**
SENES (pl. of ‘senex’ - old man)

**ATFAT Haydar (Egypt)**
TAFAT (farm - Algeria)

**AURAU (Germany)**
UARAU (East Timor)

**EVLEV (surname)**
VELEV (p2)

**NAMMAN**
MANMAN Dey (Niger)
IROIRI (an Ashaninka language of Peru word)

**ORI-IRO (p2)**
IROIRO (anglicized 'women')

**POSSOP (p2)**
SOPPOS (Uganda)

**QAZZAQ**
ZAQQAQ (a ruin in Libya)

**RAGGAR (wadi - Somalia)**
GARGAR (stream-Armenia)

**SANNAS**
NASNAS

**TERRET**
RETRET

**UREERU**
ERUERU (surname of a Sheffield volleyball player in UK)

**VOLLOV (surname)**
LOVLOV (French love term)

**WERREW (p2)**
REWWER (p2)

**XARRAX (WW94158)**
RAXXAR (an antibiotic)

**YANNAY, Bet (Israel)**
NAYNAY (stream-Jamaica)

**ZURRUZ (WW93251)**
RUZRUZ (a web site)

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MORE THAN TWO DIFFERENT GENRES

So far, we have considered transposals involving 2 different genres. Now let us explore transposals involving more than 2 different genres, specifically palindromes, tautonyms and pair isograms.

Palindromes and tautonyms have definitive letter patterns for a particular length of word. In 6-letter words these are 123321 and 123123 respectively. Pair isograms of a particular length, on the other hand, can have one of several letter patterns. For convenience, we can divide these patterns into 2 types. In the first type, the letters in the first half of the word are repeated, in a different order, in the second half of the word. Let us call these split pair isograms (SPIs for short). In the second type of pattern this is not the case. We can call these non-split pair isograms (NSPIs).

6-letter SPIs which are not palindromes (123321) or tautonyms (123123) have one of the patterns 123132, 123213, 123231, 123312. NSPIs have one of the patterns 112233, 112323, 112332, 121232, 121323, 121332, 122133, 122231, 122313, 122331. For the purposes of this article, SPIs and NSPIs are treated as separate genres.

Starting at the left hand column in each case, the two letters which are swapped to make the word in the next column to the right are underlined.

3 DIFFERENT GENRES

<table>
<thead>
<tr>
<th>SPI</th>
<th>tautonym</th>
<th>palindrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARGRA, Sidi Mohamed (Morocco)</td>
<td>RAGRA, Tall ar (Iran)</td>
<td>RAGGAR (wadi - Somalia)</td>
</tr>
<tr>
<td>BARBRA</td>
<td>BARBAR</td>
<td>RABBAR, Lovgrunds (reef - Sweden)</td>
</tr>
<tr>
<td>DREDER</td>
<td>DERDER (reef - Australia)</td>
<td>REDDER</td>
</tr>
<tr>
<td>FELFLE, Ain el (spring-Labanon)</td>
<td>FELFEL (Ethiopia)</td>
<td>LEFFEL</td>
</tr>
<tr>
<td>HRAHAR, El (locality-Algeria)</td>
<td>HARHAR (hill - Yemen)</td>
<td>HARRAH (Egypt)</td>
</tr>
<tr>
<td>KALKAL, Ben Zitel el (Morocco)</td>
<td>KALKAL (well - Djibouti)</td>
<td>KALLAK (st)</td>
</tr>
<tr>
<td>LA-E-AL (island - Burma)</td>
<td>LAELAE (island - Indonesia)</td>
<td>EALLAE</td>
</tr>
<tr>
<td>NSANAS, Chabet (wadi-Morocco)</td>
<td>NASNAS (edncm)</td>
<td>NASSAN (Burkina Faso)</td>
</tr>
<tr>
<td>PREPER (Czechoslovakia)</td>
<td>PERPER (Iran)</td>
<td>REPPER</td>
</tr>
<tr>
<td>SALSA, Sidi Bru (tomb-Tunisia)</td>
<td>SALSA, Cachoeira (falls - Brazil)</td>
<td>SALLAS (France)</td>
</tr>
<tr>
<td>TELTE, (Russia)</td>
<td>TELTE, (area - Somalia)</td>
<td>TELLET Surd (wadi - Egypt)</td>
</tr>
</tbody>
</table>

4 DIFFERENT GENRES

These two 4-word chains are each made using 4 different genres:

<table>
<thead>
<tr>
<th>palindrome</th>
<th>NSPI</th>
<th>tautonym</th>
<th>SPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATTAN* (surname)</td>
<td>NANTAT (Burma)</td>
<td>TANTAN*</td>
<td>TANTNA (mountain-Tunisia)</td>
</tr>
<tr>
<td>KINNIK (Guinea)</td>
<td>KINNIK (hod)</td>
<td>MALMAL (Somalia)</td>
<td>TIGIT (mountain - Morocco)</td>
</tr>
<tr>
<td>MALMA (Peru)</td>
<td>TIGGII (edd)</td>
<td>TIGTIG (Philippines)</td>
<td></td>
</tr>
</tbody>
</table>
In order to construct chains with more than 4 words, at least one genre has to be used twice. This chain of 5 words, covering 4 genres, is achieved by incorporating a second palindrome:

**SPI palindrome** | **NSPI palindrome** | **tautonym**
---|---|---
SUTTSU (Japan) | SUTTUS* | SUSTUT (peak-Canada) TUSTUS* Pampa (Peru)

These two 7-word chains each duplicate 3 of the 4 genres:

**SPI palindrome tautonym** | **NSPI palindrome** | **tautonym**
---|---|---
ANGGAN NAGGAN, Air (stream-Malaysia) | NAGNAG GAGNAN GANNAG (w2) (stream-Sweden) | GANGAN GNAGAN (p2) (OE 'gnaw'-ch)

Each of the above five chains have additional genre links. The first 2 chains each have a single additional link and these are identified by asterisks*. The last 3 chains have more than one additional link. These are best displayed with the words arranged as a network:

---

**LONGER WORDS**

So far, all the genre transposals have been of length 4, 5 and 6 letters, but longer words can be similarly transposed by swapping two letters. Each of the genre transposals below has 3 or more words. The genres involved are tautonyms, SPIs and NSPIs.

**8-LETTER WORDS**

Only 8-letter words with four different letters of the alphabet are admitted.

**tautonym** | **SPI** | **tautonym**
---|---|---
KALUKALU (Philippines) | KALUKULA (DR Congo) | KULAKULA (Estonia)
MALUMALU (area - Solomon Is.) | MALUMULA (Malawi) | MULAMULA (Mozambique)
MARIMARI (well - Somalia) | MARIMIRA (forest - Kenya) | MIRAMIRA (Bolivia)
MARUMARU (river - Nigeria) | MARUMURA (admin. div. Japan) | MURAMURA (stream - Ghana)
MOUSMOUS, Chabet el (stream - Algeria) | MOUSSOUM, Guessa (Chad) | SOUMSOUM, Mayo (stream - Cameroon)
tautonym
GIRAGIRA (stream - Angola)
KILOKILO (Philippines)
KOLAKOLA (cape - Zambia)
LOKALOKA (creek - Fiji)
PORAPORA (Papua NG)
PUTAPUTA(stream-New Zea.)
SIRASIRA (a Solomon Is.)

NSPI
KARAKORO (Burkina Faso)
RUCACURA, Rio (stream - Chile)

SPI
KARUKARU* (Papua NG) (a pan in Botswana)

tautonym
CHAI-CHAI* (Mozambique)
CHAI-CHIA (China)
KARUKARU* (Papua NG) (a pan in Botswana)

tautonym
GIRIGARA (Senegal)
KILIKOLO (stream - Iv.Coast)
KOLOKALA (Madagascar)
LOKOLAKA (Indonesia)
POROPARA (stream-Iv.Coast)
SIRISARA (stream - Guinea)

SPI
CHAI-CHIA (China)
CHIA-CHIA (China)
KURUKARA* (pop. locality Rwanda)

10-LETTER WORDS
This is the only example I found which has five different letters of the alphabet:

NSPI
CHECANNELHE, Chefe (Mozambique)

SPI
CHENACHANE (Algeria)

REFERENCES

ch Chambers Dictionary
csd Chambers Scots Dictionary
dje Dictionary of Jamaican English, Cassidy and Le Page
edd The English Dialect Dictionary, ed. J. Wright 1898
hod Handbook of American Indians, ed. F.W. Hodge 1907
ipfb Quentin Crewe’s International Pocket Food Book, 1988
Manx The English & Manx Dictionary by Rev. W. Gill & Rev. J.T. Clarke, Manx Soc. 1866
ospd Official Scrabble Players Dictionary
p2 The Palindromicon II by J. Grant & D. Tilque, Word Ways Monograph Series 6, 2002
pull The Complete Word Game Dictionary by T. Pulliam & G. Carruth, Facts on File 1984
st Stedman’s Medical Dictionary
WW Word Ways
w2/w3 Websters Second/Third Edition