

UNIQUE GENERIC LOCKS

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INTRODUCTION

This is a sequel to *Sequential Words* (Word Ways 2005003), words made from two or more generic letter sequences, one following the other. In UKULELE the palindromic sequence UKU is followed by the tautonymic sequence LELE. In *Unique Generic Locks* the opposite applies, the generic sequences being interlocked. In OPINION the palindromic sequence OPO is interlocked with the tautonymic sequence ININ. Many words unlock in more than one way; fewer, like OPINION, have a unique generic lock and these are the ones with which we are concerned.

All the words below consist of **two interlocked sequences**. Each word has at least 2 repeated letters simply because all the three genres under consideration have at least one repeated letter.

Sequences under consideration

3-, 4- and 5-letter palindromic sequences (P3, P4, P5) – letter patterns 121, 1221 and 12321.

4-letter tautonymic sequences (T4) – letter pattern 1212.

Miami sequences – letter pattern 12?12 (see *Miami Words* WW2000014).

Constraints

1. a generic sequence must consist of at least 3 letters (a palindromic triplet, P3). Thus, single letters and doubled letters are not allowed as sequences in their own right.
2. a word must not have more than 2 of any particular letter.
3. an unbroken generic sequence which forms part of a word cannot be used by itself as one of the sequences in the unlocking process.
4. words which are themselves palindromes, tautonyms or Miami words are excluded.
5. obscure locations are excluded.

Single letters, doubled letters, and palindromic triplets

Of major significance are the positions in the word of single letters, doubled letters and palindromic triplets. *As a general rule, the nearer any single letter(s) or doubled letter(s) is/are to the two ends of a word, the greater the chance of any lock being unique.*

A **single letter** cannot occupy the first or last positions. In most of the words one, or both, of the singles is/are as close to the ends as is possible – in the 2nd and/or the penultimate positions. The singles which form the cores of P5s and Miami sequences cannot be nearer the ends than the 3rd and/or antepenultimate positions.

Obviously, a **doubled letter** cannot be either the first two, or last two, letters of a word. Most of the doubled letters are also as close to the ends as is possible, specifically in the 2nd + 3rd and/or the antepenultimate + penultimate positions where they can only form the two central letters of a P4.

A **palindromic triplet** at the beginning/end of a word can only be 3 of the 4 letters of a T4.

Single letters, doubled letters and palindromic triplets are underlined.

Different letter patterns are given under the headings (a), (b), (c)...

References:

Unreferenced words can be found in the Oxford English Dictionary, Second Edition.

Other references are: **Cham** = Chambers English Dictionary; **OSPD** = Official Scrabble Players Dictionary; **Sted** = Stedman's Medical Dictionary; **tf** = Tertiary Faunas Vol. 1 by A. Morley Davies, George Allen & Unwin, 1971; **W2** = Webster's Second Edition

PALINDROMIC LOCKS

6-LETTER WORDS

This lock is made from two P3s. The words have **2 repeated letters and 2 singles**, each single acting as the core of one of the triplets. The 2 singles may occupy both the 2nd + penultimate positions (a), the 2nd + antepenultimate positions (b), or the 3rd + penultimate positions (c).

(a) This is the simplest type of lock possible, with just two letters interlocking.

TESTIS = TET + SIS IONIAN = IOI + NAN LADLED = LAL + DED

DREDGE = DRD + EGE TACTIC = TAT + CIC BARBER = BAB + RER

(b) RETORT = RER + TOT ANYWAY = ANA + YWY COERCE = COC + ERE

IRANIA (tf) = IRI + ANA ENSUES = ENE + SUS MIASMA = MIM + ASA

(c) PEOPLE = POP + ELE THATCH = TAT + HCH AERATE = ARA + ETE

PROPER = POP + RER INDIAN = IDI + NAN GREGOR = GEG + ROR

(b) and (c) have letter patterns which are mirror images

7-LETTER WORDS

These locks are made from a P3 and a P4. The words have **3 repeated letters and one single**, the single acting as the core of the P3. The single may be the 2nd letter (a), the penultimate letter (b), the 3rd letter (c), or the antepenultimate letter (d). A doubled letter - which occupies the 2nd + 3rd positions in (b) and (d), and the antepenultimate + penultimate positions in (c) - forms the 2-letter core of the P4.

(a) ACETATE = ACA + ETTE RIDERED = RIR + DEED LUTELET (W2) = LUL + TEET

(b) APPEASE = APPA + ESE MOONMAN (W2) = MOOM + NAN

(c) UNQUEEN = UQU + NEEN

(d) APPLIAL = APPA + LIL

(c) and (d) have letter patterns which are mirror images

8-LETTER WORDS

Locks made from two P4s occur in a few 8-letter words which have **4 repeated letters and no singles**. These are pair isograms (words with 2 of each different letter). A doubled letter - which occupies the 2nd + 3rd positions in (a), the antepenultimate + penultimate positions in (b), and both these positions in (c) - forms the 2-letter core of one of/both the P4s.

(a) AGGERARE (Cham) = AGGA + ERRE

(b) RATA-ROOT = RAAR + TOOT

(c) WOOD-WEED = WOOW + DEED

Some 8-letter words have locks made from a P3 and a P5. These words have **3 repeated letters and 2 singles**, the latter acting as the cores of the P3 and P5. One of the singles is either the 2nd letter (a), (c) and (e), or the penultimate letter (b), (d) and (f). In (e) and (f), a palindromic triplet forms the 3-letter core of the P5.

(a) ROSERIES = ROR + SEIES VESUVIUS = VEV + SUIUS

(b) HEDGEHOG = HEDEH + GOG

(a) and (b) have letter patterns which are mirror images

(c) ABERDARE = ABA + ERDRE OVERMORE = OVO + ERMRE RESTARTS = RER + STATS

(d) MISTIMES* = MITIM + SES GARBAGER = GABAG + RER

OVERVOTE = OVRVO + ETE UNBENUMB = UNENU + BMB

(c) and (d) have letter patterns which are mirror images

(e) SEMITISM (a transposal of MISTIMES*) = SES + MITIM

SATIRIST = SAS + TIRIT

(f) BEARABLE = BARAB + ELE CLINICAL = CINIC + LAL

(e) and (f) have letter patterns which are mirror images

9-LETTER WORDS

Locks made from a P4 and a P5 occur in a few 9-letter words which have **4 repeated letters and one single**, the single forming the core of the P5. A doubled letter, which occupies the 2nd + 3rd positions in (a), and the antepenultimate + penultimate positions in (b), forms the 2-letter core of the P4. In (c), a palindromic triplet forms the 3-letter core of the P5.

(a) IRRETIATE = IIRI + ETATE

(b) WEDGEWOOD = WEGEW + DOOD

(c) NAZARENER = NAZAN + REER (the single letter is hidden as the core of a palindromic triplet)

Unique locks which involve a P6 sequence do not exist because 123321 can be further split into the locked palindromic sequences 131 and 232.

TAUTONYMIC LOCKS

These are rare compared with their palindromic counterparts.

8-LETTER WORDS

This lock consists of two T4s. The words have **4 repeated letters and no singles**. They are pair isograms. The terminal palindromic triplets each form 3 letters of one of the two T4s. It is noteworthy that these examples are also sequential words with a palindromic triplet sequence followed by a Miami sequence (a) and vice versa (b).

(a) TIT.ANIAN = TITI + ANAN

(b) CAUCA.SUS = CACA + USUS TANTA.ENE (W2) = TATA + NENE

(a) and (b) have letter patterns which are mirror images

Unique locks which involve a T6 sequence do not exist because 123123 can be further split into the locked palindromic sequences 121 and 323.

MIAMI LOCKS

None found. It appears that words made of 2 locked Miami sequences also unlock in other ways.

So far, each pair of locked sequences has been of the same genre, both palindromic sequences or both tautonymic sequences, some of the same length, some of different lengths.

Now we turn to unique locks which consist of the following combinations of different genres:

palindromic + tautonymic

palindromic + Miami

tautonymic + Miami

PALINDROMIC-TAUTONYMIC LOCKS

7-LETTER WORDS

This lock consists of a P3 and a T4. The words have **3 repeated letters and one single**, the latter forming the core of the P3. The single letter is in the 2nd position in (a) and (c), the penultimate position in (b) and (d), the 3rd position in (e), the antepenultimate position in (f). In (e) and (f), the terminal palindromic triplets each form 3 letters of the T4.

(a) MIASMAS = MIM + ASAS IRANIAN = IRI + ANAN

(b) TESTERS = TETE + SRS

(a) and (b) have letter patterns which are mirror images

(c) OPINION = OPO + ININ

(d) REARAGE = RARA + EGE

(c) and (d) have letter patterns which are mirror images

(e) INDIANA = IDI + NANA KECKSES = KCK + ESES

(f) TITANIA = TITI + ANA

(e) and (f) have letter patterns which are mirror images

8-LETTER WORDS

This lock consists of a P4 and a T4. The words have **4 repeated letters and no singles**. They are pair isograms. In (a) and (b) the doubled letter in the 2nd + 3rd positions forms the middle of the P4. In (a) and (c) a terminal palindromic triplet forms the last 3 letters of the T4.

(a) APPEASES = APPA + ESES APPEARER = APPA + ERER

(b) OPPINION = OPPO + ININ

(c) JIPIJ.APA (a sequential word) = JIJI + PAPA

9-LETTER WORDS

This lock consists of a P5 and a T4. The words have **4 repeated letters and one single**, the latter forming the core of the P5. The single is either the 4th letter (b) and (c), or the 4th letter from the end (a). Each terminal palindromic triplet forms 3 letters of the T4.

(a) PAPERWARE (Cham) = PAPA + ERWRE

(b) COLPOCELE = COPOC + LELE TINGITANA (Cham - a plant species name) = TIGIT + NANA

(a) and (b) have letter patterns which are mirror images

(c) PRIMIPARA = PIMIP + RARA REAWARDED (W2) = RAWAR + EDED

PALINDROMIC-MIAMI LOCKS

8-LETTER WORDS

This lock consists of a P3 and a Miami sequence. The words have **3 repeated letters and 2 singles**, the latter forming the cores of the P3 and Miami sequences. The singles occur in the 2nd + antepenultimate positions in (a) and (c), the 3rd + penultimate positions in (b) and (d), the 2nd + 4th from the end in (e) and (g), and the 4th + penultimate in (f) and (h).

(a) SPISERIE = SPS + IERIE TRITAXIA (tf) = TRT + IAXIA

(b) CALCEATE = CALCA + ETE KICKSIES = KICKI + SES

(a) and (b) have letter patterns which are mirror images

(c) WARTWORT = WAW + RTORT LAKELIKE (Cham) = LAL + KEIKE AVERAGER = AVA + ERGER

UNEDUCED (W2) = UNU + EDCED

(d) LIFELINE = LIFLI + ENE TIGHTISH = TIGTI + HSH RIVERINE = RIVRI + ENE

KIDSKINS (W2) = KDIKI + SNS

(c) and (d) have letter patterns which are mirror images

(e) OVERDOER = OVO + ERDER FAULTFUL = FAF + ULTUL

(f) WASH-WAYS = WAHWA + SYS CATHCART = CAHCA + TRT INSWINGS = INWIN + SGS

TINCTION = TICTI + NON SINESIAN = SIESI + NAN

(e) and (f) have letter patterns which are mirror images

(g) NEIGHING = NEN + IGHIG

(h) RECIRCLE = RCIRC + ELE

(g) and (h) have letter patterns which are mirror images

9-LETTER WORDS

This lock consists of a P4 and a Miami sequence. The words have **4 repeated letters and one single**, the Miami core. In all these words except BASEBALLS (c), the single occupies either the 3rd position (b), (d), (e), (h) and (j), or the antepenultimate position (a), (f), (g) and (i).

In (a), (b), (c) and (d) the doubled letter forms the middle of the P4.

(a) ASSEDATED = ASSA + EDTED MOOSEMISE (W2) = MOOM + SEISE

(b) DOUEDOPPE = DOUDO + EPPE

(a) and (b) have letter patterns which are mirror images

(c) BASEBALLS = BAEBA + SLLS

(d) CHECKHOOK (W2) = CHECH + KOOK

(e) TIGRETIER (Sted) = TIGTI + REER

(f) RACKAROCK = RAAR + CKOCK

(e) and (f) have letter patterns which are mirror images

- (g) UNENDURED = UNNU + EDRED
- (h) GALIGNANI = GALGA + INNI
(g) and (h) have letter patterns which are mirror images
- (i) LUCULENCE = LUUL + CENCE
- (j) TENSITIES (OSPD) = TENTE + SIIS

10-LETTER WORDS

This lock consists of a P5 and a Miami sequence. The words have **4 repeated letters and 2 singles**. In the 3rd and antepenultimate positions, the singles form the core letters of the P5 and Miami sequences (a), and vice versa (b).

- (a) CANALICULI = CANAC + LIULI COMOLECULE (W2) = COMOC + LEULE
STATUESQUE = STATS + UEQUE
- (b) OMBROMETER = OMBOM + RETER PHOSPHENES = PHOPH + SENES
(a) and (b) have letter patterns which are mirror images

TAUTONYMIC-MIAMI LOCKS

This lock consists of a T4 and a Miami sequence. The words have **4 repeated letters and one single**, the latter acting as the core letter of the Miami sequence. The single is in the 3rd position in (c), (d), and (e), the 4th position in (b), and is the 4th letter from the end in (a). Each word begins (a), or ends (b, c, d, e), with a palindromic triplet which forms the first/last 3 letters of the T4.

- (a) TETRAMERA = TETE + RAMRA
- (b) CYTOCYSTS = CYOCY + TSTS
(a) and (b) have letter patterns which are mirror images
- (c) BAG-BEARER = BAGBA + ERER
- (d) TORTUOSUS (Cham) = TORTO + USUS
- (e) IMPRIMERE (Cham) = IMPIM + RERE

ISOMORPHS AND REVERSE ISOMORPHS

Isomorphs are words having the same letter pattern with no crashing letters. The most interesting isomorphs involve words with repeated letters and doubled letters, just the type of words offered above. In mirror image letter patterns, when there are no crashing letters, the two words can be perceived as **reverse isomorphs**. Here is a selection of isomorphs and reverse isomorphs found above. A vertical line links mutual isomorphs.

isomorphs-----reverse isomorphs

From 'Palindromic Locks':
 ANYWAY |.....| THATCH
 COERCE |.....| PROPER
 IRANIA |.....| INDIAN

From 'Palindromic-Tautonymic Locks':
 INDIANA |..... TITANIA
 KECKSES |.....

From 'Palindromic-Miami Locks':
 AVERAGER |..... LIFELINE
 WARTWORT |.....

isomorphs-----reverse isomorphs

ABERDARE |.....| OVERVOTE
 RESTARTS |.....| UNBENUMB

COLPOCELE |..... PAPERWARE
 TINGITANA |.....

LAKELIKE |..... TIGHTISH
 UNEDUCED |.....

Finally, we come full circle back to the simplest possible type of lock, that between two palindromic triplets with just 2 interlocking letters (see 'Palindromic Locks'). The three words TESTIS, IONIAN and DREDGE are mutual isomorphs. Furthermore, each one of them is a reverse isomorph of the other two. However, these words hold another surprise. They each have the same letter pattern when read forwards or backwards, so each is its own isomorph reversal!