The transposal of PROSE into SPORE is exactly the same as the transposal of OLIVE into VOILE: both can be represented by the transformation 12345 - 41325, which says that the letter in first position is moved to second position, the letter in second position is moved to fourth position, and so on to the letter in fifth position which remains fixed. To save space, the transformation is written 41325.

The inverse transposal, SPORE into PROSE, is represented by a different transformation, 24315. However, not all transposal-pairs lead to two different transformations; CORAL into CAROL is represented by 14325, as is CAROL into CORAL. This occurs whenever each letter in the word either remains fixed (as C, R, L) or changes position with another letter (as A and 0).

The number of different n-letter transformations is one less than the number of distinct ways n different letters can be arranged in a row: n(n-1)(n-2) ... 2·1, denoted by the symbol n! (factorial n). It is an interesting task to try and find transposal-pairs which illustrate each possible transformation. Because many transposal-pairs can be used to illustrate two transformations, the number of different transposal-pairs that must be found is smaller than n! -- 1, 4, 16, 72 and 397 for words of two, three, four, five and six letters. Ralph Beaman has derived an iterative formula for T(n), the number of different transposal-pairs:

\[ T(n) = T(n-1) + (n-1) T(n-2) + (n-1) \left( \frac{1}{2} \right) (n-2) + (n-1) \]

valid for n = 3 or more (to prime the pump, set T(1) = 0, T(2) = 1).

A complete set of five-letter transposal-pairs is listed in the February 1970 Word Ways. When Dennis Ritchie of Bell Telephone Laboratories compiled a transposal list of words in Webster's Second, it became possible to prepare an analogous set of six-letter transposal-pairs. In the table below, each transformation (or pair of transformations) is followed by the commonest transposal-pair known; all words can be found in Webster's Second or Third Unabridged. The hardest transposal-pairs to find were EDISON - DEINOS, ORANGS - GARSON and ARISEN - REINAS.
abides dibase
insure ursine
German manger
tashie
bloomy symbol
course source
Cyranu Nyroca
conrue rounce
shirty thyrsl
course source
blos:my sy:mbol
re:nts tubers
nigers  
amic iceman
almost mom
danger ranged
dalath halted
duties suited
signal langus
dialer railed
coxite exotic
drones nozed
creant tanrec
deltas salted
exotic
blos:my sy:mbol
renigts
renigts
Hanging
blos:my sy:mbol
blos:my sy:mbol

retain retina
trades treads
resign reigns
steady stayed
cheats chaste
resing renigts
forest foster
breath Bertha
stored sorted
rouges rugose
pearly parley
fringe finger
purism primus
clarct cartel
points pitons
pleats petals
stinge signet
geodal goaled
friend finder
roamed radome
player parley
slider girde
plates pastel
luting ungilt
fillets itself
boater orbate
German engram
Daniel aldine
cotise ocict
ascent stance
listen inlets
famuli aimful
spino prison
isotac scota
spider prides
spiter priest
soiler oriel
pseudo souped
unable nebula
nailer Arline
sauser argues
noetic ochine
dances ascend
triose Restio
strone tensor
moused odeums
spinal plains
arkose resoak
strone tenors
listen silent
halter later
lustre sulter
ulcers Clerus
sample maples
hamlet Malthe
Daniel nailed
vowels wolves
Lawrie waller
raptly paltry
dotage togaed
lament mantle
slater alerts
timers mister
gifted fidget
rawest waters
sacred cadres
redtop depot
ruggate Guetar
ashore hoarse
gooled algedo
medals damsel
spinet instep
ruined inured
pastel staple
insult sunlit
slider idlers
sprite ripest
enfold fondle
debris brides
velour louvre
escort corset
solemn lemons
stable ablest
depart parted
camels mescal
Olenus ensoul
faster strafe
coheir heroic
deacon acnode
master stream
domed damino
tubers brutes
Teucri uretic
dogies goolds
yogurt grouty
cashel seach
cashel deasil
potman tampon
unstar Saturn
trins inerts
turbo robust
ambled beldam
denial nailed
sector corset
escrow covers
lapsed pedals
hustle sleuth
starve averts
delta lasted
lemony myelon
Lesath shelta
alldine Delian
dispel sliped
kitsch thickes
septal pleats
enacts ascent
usager argues
soaker arkose
pretan entrap
insert sterin
rectal claret