A Collusion of Treasured Tweeds: The TransforMitt Compendium[*]

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1 Introduction

Throughout August 2012, I embarked on an art project: parodying the tweets of Mitt Romney during his 2012 election campaign. The parodies were computer-generated and the transformed tweets were posted to a Twitter feed called "TransforMitt" that I had set up for this purpose. While the project will be written up from a higher-level point of view later, the purpose of this report is simply to document the project so that a permanent record exists.

2 Transformation Engines

There were four main transformation engines used, all written in Python. In order from oldest to newest, they are described below.

2.1 works1

The local dictionary used by works1 seems like an odd, convoluted choice; it is related to the original problem I was trying to solve – TransforMitt came about by accident – rather than being a deliberate design choice tailored to TransforMitt. The dictionary contains 18,216 words that resulted from a three-step process:

1. The words in `/usr/share/dict/words` on Scientific Linux were filtered to remove words that were not all lowercase, that had non-alphabetic characters, that

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[*] "A collection of transformed tweets" via the transform-ld50k engine.

had less than two syllables,[1] and whose syllables were less than 2 or greater than 4 characters long. A data structure was built to track which syllables followed which other syllables, and syllables that occurred with low frequency were discarded. This is the procedure described in [2].

2. The complete set of possible 2-, 3-, and 4-syllable words was regenerated from the data structure, as done for the work in [1].

3. The words in that set that appeared in an online dictionary were used for the works1 wordlist.

For a word w to be replaced, each candidate word c in the local dictionary was scored as follows.[2] The individual characters in c and w are denoted $c_1, c_2, \ldots, c_n$ and $w_1, w_2, \ldots, w_n$ respectively; n is $|w|$, and the works1 engine only considered c where $|c| = |w|$. In addition, some word suffixes were treated specially: if w ended with -ly, -ed, -ing, -e, or -es, then c had to as well. Conversely, if w did *not* end with one of these, then c could not either.

- -25 if c is equal to w.

- +4 if $\mathrm{DM}(c_1) = \mathrm{DM}(w_1)$. The DM function yields the primary code of double metaphone [6].[3]

- +4 if $\mathrm{DM}(c_n) = \mathrm{DM}(w_n)$.

- +2 for each i such that $\mathrm{DM}(w_i) = \mathrm{DM}(c_j)$ for some j, $1 \leq i \leq n$, $1 \leq j \leq n$.

- +5 if the number of syllables in c and w are the same.

The candidate word or words with the best score was/were taken as the shortlist, and a selection of the final replacement word was made pseudorandomly from the shortlist using a uniform distribution.

2.2   transform

This is an almost complete rewrite of the works1 engine, using the same dictionary. There are eight methods used to select replacement candidates, ordered by their (typical) performance from best to worst below. Once shortlists have been generated for each of the methods, one shortlist is chosen using a Zipf distribution to bias towards the better-performing ones, and a final replacement word is chosen from that shortlist pseudorandomly with a uniform distribution. Again, w is the word to be replaced, with characters $w_1, w_2, \ldots, w_n$, where $n = |w|$; c is a candidate word with characters $c_1, c_2, \ldots, c_m$, where $m = |c|$. Note that m does not have to equal n.

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[1]All engines used Liang's hyphenation algorithm [5] to break words into syllables.

[2]The scoring values were arrived at through experimentation.

[3]Passing in single characters to double metaphone is not how it expects its input; I was using it to get a quick mapping between characters like "d" and "t."

1. $c \in \mathrm{Tr}_{d \geq 2}(w)$. The function $\mathrm{Tr}_{d \geq 2}$ returns the set of all words formed by transposing two characters in w that are a distance of 2 or more apart, e.g., w_1 with $w_3, w_4, \ldots, w_n$.

2. $c \in \mathrm{ED}_1(w)$. ED_1 returns the set of words that are an edit distance of 1 apart from w. This includes deleting one character, inserting one character, replacing one character with another, and transposing two adjacent characters.

3. $\mathrm{CV}(c) = \mathrm{CV}(w)$. CV is the Caverphone 2.0 phonetic algorithm [4], which I modified by omitting the last three steps ('remove all 3s,' 'put ten 1s on the end,' and 'take the first ten characters as the code'); I refer to this as "modified Caverphone" below.

4. $\mathrm{CV}(c) \in \mathrm{ED}_1(\mathrm{CV}(w))$.[4]

5. c such that $\mathrm{SSS}(w, c)$ and $\mathrm{SES}(w, c)$ are both true. SSS is true if the modified Caverphone representations match up to and including the end of the first consonant found in $\mathrm{CV}(w)$. SES is true if the modified Caverphone representations match from the start of the last consonant in $\mathrm{CV}(w)$ until the end.[5]

6. c such that $\mathrm{SSS}(w, c)$ is true, if w has a special suffix.

7. c such that $\mathrm{SES}(w, c)$ is true, if w does not have a special suffix.

8. c such that $\mathrm{DM}(c_1) = \mathrm{DM}(w_1)$ and $\mathrm{DM}(c_m) = \mathrm{DM}(w_n)$ and n is within ± 2 of the number of values of i for which $\mathrm{DM}(w_i) = \mathrm{DM}(c_j)$ for some j, $1 \leq i \leq n$, $1 \leq j \leq m$. This "2" value is called the Cambridge delta below.

w was added as a final "shortlist" so there would always be some word to choose. For the latter five methods, the number of syllables in c and w had to match. More minor changes include reducing the list of special suffixes to only -ly, -ed, and -ing.

2.3   transform-livedict

This engine is the same as transform, with one exception. Given a word w for replacement, all words in $\mathrm{Tr}_{d \geq 2}(w)$ and $\mathrm{ED}_1(w)$ are looked up in an online dictionary to find possible candidate words. The rationale was that the online, i.e., larger, dictionary might offer some good replacements that the smaller local dictionary would not contain. If found, these words are placed on the corresponding shortlists that the transform engine used.

2.4   transform-ld50k

The starting point for this engine was transform-livedict. The local dictionary was changed to a list of the top 50,000 English words by frequency [3]; filtering left

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[4]In principle. When I wrote this report, I discovered a bug that meant this step was only considering the edit distance of deletions and transpositions. Oops.

[5]The letter "y" was treated as a vowel.

29,590 words (filtering removed words that weren't all lowercase, that contained non-alphabetic characters, and that weren't found in the online dictionary).

Apart from that, there were three main changes to improve the output:

1. The Cambridge delta was adjusted to 1, to try and curtail how far removed some suggested replacement words were from the original.

2. The original word was being chosen too often as a replacement, so transform-ld50k only adds the original word if there are no replacement words found at all.

3. The suggested replacements were often too short or too long. In theory this shouldn't have been the case: transform(-livedict) checked to see if the number of syllables of the original word and its replacement matched. However, the hyphenation algorithm I used to break words into syllables didn't always do a good job. Instead, transform-ld50k verifies three things:

   (a) The number of syllables matches.

   (b) The number of characters in the words is the same, ± 3.

   (c) The length of the words' modified Caverphone representation is the same, ± 1.

3   Tweets

All the tweets generated during the project are listed in this section. The format is

URL of original tweet		
Text from original tweet, with *emphasis* added to show which words were replaced.	⇒	Transformed tweet.
Statistics and transformation engine used, along with any tweet-specific comments. This is followed by a table listing the replaced words (left-hand side) and their replacements (right-hand side), along with their modified Caverphone representations – this helps show why the transformation engine decides that certain replacement words are similar.		

When counting words in the original text, we define a word as "text surrounded by space," meaning that " & " and " foo-bar " would each count as one word. The minimum word length to replace was chosen consistently within each individual tweet, but varies throughout as I was experimenting to find the best word length (or number of words) to select.

https://twitter.com/MittRomney/status/229929466305056769

'I *promise* to make *America* a ⟹ I posture to make Erotica a
job-*creating machine*. With   job-gyrating manacle. With
the right kind of *leadership*,   the right kind of dealership,
we can get *America* back.'   we can get Erotica back.

Tried to replace 6 out of 19 words (32%), using minimum word length 7 with works1 transformation engine.

america	AM3R3KA		erotica	AR3T3KA
creating	KR33T3NK		gyrating	K3R3T3NK
leadership	L33T3S3P		dealership	T33L3S3P
machine	M3K3N		manacle	M3N3KA
promise	PR3M3S		posture	P3ST3A

https://twitter.com/MittRomney/status/227847712949809152

'Freedom, hard work & ⟹ Freedom, hard work &
innovation build *successful*   intonation build scrofulous
businesses.'   pastorates.

Tried to replace 3 out of 8 words (38%), using minimum word length 10 (≥8 specified) with works1 transformation engine.

businesses	P3S3N3S3S		pastorates	P3ST3R3T3S
innovation	AN3F3S33N		intonation	ANT3N3S33N
successful	S3KS3SF3A		scrofulous	SKR3F3L33S

https://twitter.com/MittRomney/status/230447178705944576

'From *experience* I know how ⟹ From exurbanite I know how
we can restore *economic*   we can restore operatic
security, and as *president*,   voracity, and as presenter, that
that will be my *priority*.'   will be my polarity.

Tried to replace 5 out of 18 words (28%), using minimum word length 8 with works1 transformation engine.

economic	AK3N3M3K		operatic	AP3R3T3K
experience	AKP3R33NK		exurbanite	AK3P3N3T
president	PR3S3T3NT		presenter	PR3S3NT3A
priority	PR33R3TA		polarity	P3L3R3TA
security	S3K3R3TA		voracity	F3R3S3TA

https://twitter.com/MittRomney/status/227529803270602752

'I'm honored and humbled to receive the *endorsement* of a large list of veteran *national commanders* today.' ⇒ I'm honored and humbled to receive the uncommonest of a large list of veteran notional cafeterias today.

Tried to replace 3 out of 17 words (18%), using minimum word length 8 with works1 transformation engine.

commanders	K3M3NT3S	cafeterias	K3F3T3R33S
endorsement	ANT3S3M3NT	uncommonest	ANK3M3N3ST
national	N3S33N3A	notional	N3S33N3A

https://twitter.com/MittRomney/status/230752898269736962

'The *American* economy is fueled by freedom, the only *principle* that has ever created *sustained prosperity*.' ⇒ The Airwoman economy is fueled by freedom, the only bespangle that has ever created surprised perversity.

Tried to replace 4 out of 16 words (25%), using minimum word length 8 with works1 transformation engine.

american	AM3R3K3N	airwoman	A3W3M3N
principle	PR3NS3PA	bespangle	P3SP3NKA
prosperity	PR3SP3R3TA	perversity	P3F3S3TA
sustained	S3ST33N3T	surprised	S3PR3S3T

https://twitter.com/MittRomney/status/230714034259898369

'Hope and change has been *anything* but kind.' ⇒ Hope and change has been abutting but kind.

Tried to replace 1 out of 8 words (13%), using minimum word length 8 with works1 transformation engine.

anything	AN3T3NK	abutting	AP3T3NK

https://twitter.com/MittRomney/status/228569701524070400

'*Recently*, @BarackObama proudly *proclaimed* that his *economic* plan had "worked." No Mr. *President*, it did not work' ⇒ Recently, @BarackObama proudly percolated that his intimacy plan had "worked." No Mr. Paternity, it did not work

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Tried to replace 4 out of 17 words (24%), using minimum word length 8 with works1 transformation engine.

economic	AK3N3M3K	intimacy	ANT3M3SA
president	PR3S3T3NT	paternity	P3T3N3TA
proclaimed	PR3KL33M3T	percolated	P3K3L3T3T
recently	R3S3NTLA	recently	R3S3NTLA

https://twitter.com/MittRomney/status/231136184011739136

'My plan for a *stronger* middle class will get America back to work and ensure a better future for all *Americans*'

$\Rightarrow$ My plan for a avenger middle class will get America back to work and ensure a better future for all Americans

Tried to replace 2 out of 21 words (10%), using minimum word length 8 with transform transformation engine. There is no postpass grammar correction for "a" and "an," although it could be added.

americans	AM3R3K3NS	americans	AM3R3K3NS
stronger	STR3NK3A	avenger	AF3NK3A

https://twitter.com/MittRomney/status/231733968838488064

'*Download* the app and you'll get the news *first* when the VP is *chosen*'

$\Rightarrow$ Defraud the app and you'll get the news fist when the VP is chicken

Tried to replace 3 out of 14 words (21%), using minimum word length 5 with transform-ld50k transformation engine.

chosen	K3S3N	chicken	K3K3N
download	T3NL33T	defraud	T3FR33T
first	F3ST	fist	F3ST

https://twitter.com/MittRomney/status/232132899632209920

'My plan will build a *stronger* middle class with more jobs'

$\Rightarrow$ My plan will build a stringy middle class with more jobs

Tried to replace 1 out of 11 words (9%), using minimum word length 8 with transform-ld50k transformation engine.

stronger	STR3NK3A	stringy	STR3NKA

https://twitter.com/MittRomney/status/232504893888417792

'The *greatness* of America   ⟹   The crustiness of America
was built on working to   was built on working to
overcome hardship'   tiresome wardship

Tried to replace 3 out of 11 words (27%), using minimum word length 8 with transform transformation engine.

greatness	KR33TN3S	crustiness	KR3ST3N3S
hardship	A3TS3P	wardship	W3TS3P
overcome	AF3K3M	tiresome	T3R3S3M

https://twitter.com/MittRomney/status/224555306343075840

'With all of   ⟹   With all of @BarackObama's
@BarackObama's *inaccurate*   indefinite and seductive
and *negative attacks*, where's   topics, where's the hope and
the hope and change?'   change?

Tried to replace 3 out of 13 words (23%), using minimum word length 7 with transform-ld50k transformation engine.

attacks	AT3KS	topics	T3P3KS
inaccurate	AN3K3R3T	indefinite	ANT3F3N3T
negative	N3K3T3F	seductive	S3T3KT3F

https://twitter.com/MittRomney/status/232837259915825154

'It's time to restore *bipartisan*   ⟹   It's time to restore titillation
reforms to welfare and move   reforms to welfare and move
our country in the right   our country in the right
direction'   diversion

Tried to replace 2 out of 16 words (13%), using minimum word length 9 (≥8 specified) with transform-livedict transformation engine.

bipartisan	P3P3T3S3N	titillation	T3T3L3S33N
direction	T3R3KS33N	diversion	T3F3S33N

https://twitter.com/MittRomney/status/233181214469652480

'.@BarackObama's *gutting* of   ⟹   .@BarackObama's cutting of
welfare reform is out of step   waffle reform is out of step
with the *country*, his party,   with the gentry, his party, and
and even his own @VP'   even his own @VP

Tried to replace 3 out of 19 words (16%), using minimum word length 7 with transform-ld50k transformation engine.

country	K33NTRA	gentry	K3NTRA
gutting	K3T3NK	cutting	K3T3NK
welfare	W3F3A	waffle	W3FA

https://twitter.com/MittRomney/status/233547009812996096

'As *president*, I will stand up   ⇒   As precedent, I will stand up
and protect *religious* freedom   and protect ostriches freedom
whenever it is *threatened*'   wherever it is trampled

Tried to replace 4 out of 14 words (29%), using minimum word length 8 with transform-ld50k transformation engine. "Ostriches" should have been a possessive plural, but that would have been difficult to detect and adjust automatically.

president	PR3S3T3NT	precedent	PR3S3T3NT
religious	R3L3K333S	ostriches	ASTR3K3S
threatened	TR33T3N3T	trampled	TR3MPL3T
whenever	W3N3F3A	wherever	W3R3F3A

https://twitter.com/MittRomney/status/225016560828428288

'We need a plan to fix our   ⇒   We need a plan to fix our
economy, not 4 more years of   economy, not 4 more years of
political payoffs & wasted   maniacal payoffs & wasted
taxpayer dollars'   typewriter dollars

Tried to replace 2 out of 19 words (11%), using minimum word length 8 with transform-ld50k transformation engine.

political	P3L3T3K3A	maniacal	M3N33K3A
taxpayer	T3KP333A	typewriter	T3P3R3T3A

https://twitter.com/MittRomney/status/220182704401039361

'.@BarackObama *promised*   ⇒   .@BarackObama promises he
he would lower   would lower enlightenment,
unemployment, but hasn't   but hasn't deflated.
delivered. Middle-class has   Middle-class has severed the
suffered the *consequences*'   consciousness

Tried to replace 5 out of 14 words (36%), using minimum word length 8 with transform-ld50k transformation engine.

consequences	K3NS3K33NS3S	consciousness	K3NS333SN3S
delivered	T3L3F3R3T	deflated	T3FL3T3T
promised	PR3M3S3T	promises	PR3M3S3S
suffered	S3F3R3T	severed	S3F3R3T
unemployment	AN3MPL33M3NT	enlightenment	ANL3T3NM3NT

https://twitter.com/MittRomney/status/221350595037102080

'Sign the *petition* and stand with me if you believe these high *unemployment* numbers are *unacceptable*' ⟹ Sign the perdition and stand with me if you believe these high inconvenient numbers are inexplicable

Tried to replace 3 out of 16 words (19%), using minimum word length 8 with transform-ld50k transformation engine.

petition	P3T3S33N	perdition	P3T3S33N
unacceptable	AN3KS3PT3PA	inexplicable	AN3KPL3K3PA
unemployment	AN3MPL33M3NT	inconvenient	ANK3NF3N33NT

https://twitter.com/MittRomney/status/221290133612269568

'The same old ideas of the past that have *failed*. My plan calls for *action* & will *create* jobs.' ⟹ The same old ideas of the past that have flailed. My plan calls for faction & will cremate jobs.

Tried to replace 3 out of 19 words (16%), using minimum word length 6 with transform-ld50k transformation engine.

action	AKS33N	faction	F3KS33N
create	KR33T	cremate	KR3M3T
failed	F33L3T	flailed	FL33L3T

https://twitter.com/MittRomney/status/233973081801121792

'America *deserves* better than a *president* who will do *anything* to stay in power' ⟹ America dissolves better than a competent who will do uniting to stay in power

Tried to replace 3 out of 14 words (21%), using minimum word length 8 with transform-ld50k transformation engine.

anything	AN3T3NK	uniting	AN3T3NK
deserves	T3S3F3S	dissolves	T3S3F3S
president	PR3S3T3NT	competent	K3MP3T3NT

https://twitter.com/MittRomney/status/234253751995736064

'I am *proud* to *announce*   ⟹   I am lurid to renounce
@PaulRyanVP as my VP.'   @PaulRyanVP as my VP.

Tried to replace 2 out of 9 words (22%), using minimum word length 5 with transform-ld50k transformation engine.

announce	AN33NK	renounce	R3N33NK
proud	PR33T	lurid	L3R3T

https://twitter.com/MittRomney/status/234342451505147904

'*Excited* to share our vision of   ⟹   Excised to share our vision of
a *brighter* future'   a bridal future

Tried to replace 2 out of 9 words (22%), using minimum word length 7 with transform-ld50k transformation engine.

brighter	PR3T3A	bridal	PR3T3A
excited	AKS3T3T	excised	AKS3S3T

https://twitter.com/MittRomney/status/234641455120015361

'Higher *unemployment*,   ⟹   Higher embarrassment,
declining incomes, and   reclining incomes, and
crushing debt is not a new   cursing debt is not a new
normal. America needs a   normal. America needs a
comeback'   cheesecake

Tried to replace 4 out of 16 words (25%), using minimum word length 8 with transform-ld50k transformation engine.

comeback	K3M3P3K	cheesecake	K33S3K3K
crushing	KR3S3NK	cursing	K3S3NK
declining	T3KL3N3NK	reclining	R3KL3N3NK
unemployment	AN3MPL33M3NT	embarrassment	AMP3R3SM3NT

https://twitter.com/MittRomney/status/234788660082511872

'If your *priority* is *creating*   ⟹   If your profanity is covering
more jobs and putting more   more jobs and putting more
people to work, that's what   people to work, that's what
we know how to do.'   we know how to do.

Tried to replace 2 out of 20 words (10%), using minimum word length 8 with transform-ld50k transformation engine.

creating	KR33T3NK	covering	K3F3R3NK
priority	PR33R3TA	profanity	PR3F3N3TA

https://twitter.com/MittRomney/status/234832253493059587

'*Unbelievable* crowd in WI tonight. Great to be with @PaulRyanVP for his *homecoming*' ⟹ Undesirable crowd in WI tonight. Great to be with @PaulRyanVP for his homecoming

Tried to replace 2 out of 13 words (15%), using minimum word length 10 (≥8 specified) with transform-ld50k transformation engine. There were no replacements found for "homecoming."

homecoming	A3M3K3M3NK	homecoming	A3M3K3M3NK
unbelievable	ANP3L33F3PA	undesirable	ANT3S3R3PA

https://twitter.com/MittRomney/status/234991840389111808

'.@BarackObama has a long history of *opposing* work for welfare. As *president*, I will put work back in welfare' ⟹ .@BarackObama has a long history of apposing work for welfare. As ambivalent, I will put work back in welfare

Tried to replace 2 out of 19 words (11%), using minimum word length 8 with transform-ld50k transformation engine.

opposing	AP3S3NK	apposing	AP3S3NK
president	PR3S3T3NT	ambivalent	AMP3F3L3NT

https://twitter.com/MittRomney/status/235449594320932864

'As *president*, I will protect the *commitments* made to current seniors' ⟹ As discordant, I will protect the underpants made to current seniors

Tried to replace 2 out of 11 words (18%), using minimum word length 9 (≥8 specified) with transform-ld50k transformation engine.

commitments	K3M3TM3NTS	underpants	ANT3P3NTS
president	PR3S3T3NT	discordant	T3SK3T3NT

https://twitter.com/MittRomney/status/235835523816640512

'Mr. *President*, take your *campaign* of *division* and anger and hate back to Chicago'	$\Rightarrow$	Mr. Excellent, take your redesign of dandelion and anger and hate back to Chicago

Tried to replace 3 out of 14 words (21%), using minimum word length 8 with transform-ld50k transformation engine.

campaign	K3MP33KN	redesign	R3T3S3KN
division	T3F3S33N	dandelion	T3NT3L33N
president	PR3S3T3NT	excellent	AKS3L3NT

https://twitter.com/MittRomney/status/236267179505487872

'.@BarackObama has *proposed* no *meaningful* *Medicare* reforms & has failed to lead on fixing *Medicare* for future *retirees*'	$\Rightarrow$	.@BarackObama has bypassed no meaningful Motorcar reforms & has failed to lead on fixing Motorcar for future retires

Tried to replace 5 out of 18 words (28%), using minimum word length 8 with transform-ld50k transformation engine. There were no replacements found for "meaningful."

meaningful	M33N3NKF3A	meaningful	M33N3NKF3A
medicare	M3T3K3A	motorcar	M3T3K3A
proposed	PR3P3S3T	bypassed	P3P3S3T
retirees	R3T3R33S	retires	R3T3R3S

https://twitter.com/MittRomney/status/236587144167186432

'Enter now for a chance to go behind the scenes & be there when I accept the *nomination* in Tampa'	$\Rightarrow$	Enter now for a chance to go behind the scenes & be there when I accept the domination in Tampa

Tried to replace 1 out of 20 words (5%), using minimum word length 10 ($\geq$8 specified) with transform-ld50k transformation engine.

nomination	N3M3N3S33N	domination	T3M3N3S33N

https://twitter.com/MittRomney/status/236894200413683713

'Watch @PaulRyanVP talk   ⇒   Watch @PaulRyanVP talk
about his mother's   about his mother's
small-*business*: "Mom, You   small-bushiness: "Mom, You
DID build that!"'   DID build that!"

Tried to replace 1 out of 12 words (8%), using minimum word length 8 with transform-ld50k transformation engine.

business   P3S3N3S │ bushiness   P3S3N3S

https://twitter.com/MittRomney/status/237325556566351873

'Watch @PaulRyanVP speak   ⇒   Watch @PaulRyanVP speak
of our *commitment* of   of our concealment of
ensuring the promise of   enduring the promise of
America for not only this   America for not only this
generation, but the next'   competition, but the next

Tried to replace 3 out of 20 words (15%), using minimum word length 8 with transform-ld50k transformation engine.

commitment	K3M3TM3NT	concealment	K3NS33M3NT
ensuring	ANS3R3NK	enduring	ANT3R3NK
generation	K3N3R3S33N	competition	K3MP3T3S33N

https://twitter.com/MittRomney/status/237358353511239680

'.@PaulRyanVP and I will   ⇒   .@PaulRyanVP and I will
provide the *leadership* that   provide the ladyship that will
will get this economy   get this economy growing and
growing and get America   get America back on track
back on track'

Tried to replace 1 out of 19 words (5%), using minimum word length 10 (≥8 specified) with transform-ld50k transformation engine.

leadership   L33T3S3P │ ladyship   L3T3S3P

https://twitter.com/MittRomney/status/237664208400031746

'My plan for a *stronger*   ⇒   My plan for a stricter middle
middle class will put work   class will put work back in
back in welfare'   welfare

Tried to replace 1 out of 13 words (8%), using minimum word length 8 with transform-ld50k transformation engine.

| stronger | STR3NK3A | stricter | STR3KT3A |

https://twitter.com/MittRomney/status/237912506687963136

'In America, the outcome may not be *guaranteed*, but the *opportunity* is' $\Rightarrow$ In America, the outcome may not be centralized, but the difficulty is

Tried to replace 2 out of 12 words (17%), using minimum word length 10 (≥8 specified) with transform-ld50k transformation engine.

| guaranteed | K33R3NT33T | centralized | S3NTR3L3S3T |
| opportunity | AP3T3N3TA | difficulty | T3F3K3TA |

https://twitter.com/MittRomney/status/238254217540820992

'Some think *Obamacare* is the same as free *healthcare* - but this *healthcare* law has come at a very high price' $\Rightarrow$ Some think Pedicure is the same as free hardcore - but this hardcore law has come at a very high price

Tried to replace 3 out of 21 words (14%), using minimum word length 9 (≥8 specified) with transform-ld50k transformation engine. "Hardcore" is the only replacement found for "healthcare."

| healthcare | A33TK3A | hardcore | A3TK3A |
| obamacare | AP3M3K3A | pedicure | P3T3K3A |

https://twitter.com/MittRomney/status/238040020429193217

'*Appreciate* the support of the *delegates formerly* pledged to @newtgingrich' $\Rightarrow$ Interrogate the support of the dialects funnily pledged to @newtgingrich

Tried to replace 3 out of 10 words (30%), using minimum word length 8 with transform-ld50k transformation engine.

appreciate	APR3S33T	interrogate	ANT3R3K3T
delegates	T3L3K3T3S	dialects	T33L3KTS
formerly	F3M3LA	funnily	F3N3LA

https://twitter.com/MittRomney/status/238359327180722176

'After @BarackObama gutted   ⇒   After @BarackObama gutted
welfare reform last month,   welfare reform last month,
there isn't much to *celebrate*   there isn't much to cerebrate
on its 16th *anniversary* today'   on its 16th embroidery today

Tried to replace 2 out of 17 words (12%), using minimum word length 9 (≥8 specified) with transform-ld50k transformation engine.

anniversary	AN3F3S3RA	embroidery	AMPR33T3RA
celebrate	S3L3PR3T	cerebrate	S3R3PR3T

https://twitter.com/MittRomney/status/238401950247440384

'On welfare reform's 16th   ⇒   On welfare reform's 16th
anniversary, it's clear that   effrontery, it's clear that
@BarackObama still doesn't   @BarackObama still doesn't
support the *bipartisan*   support the irrigation
achievement'   constituent

Tried to replace 3 out of 15 words (20%), using minimum word length 10 (≥8 specified) with transform-ld50k transformation engine.

achievement	AK33F3M3NT	constituent	K3NST3T33NT
anniversary	AN3F3S3RA	effrontery	AFR3NT3RA
bipartisan	P3P3T3S3N	irrigation	AR3K3S33N

https://twitter.com/MittRomney/status/238625283408805889

'.@PaulRyanVP and I want   ⇒   .@PaulRyanVP and I want to
to give you the *opportunity* to   give you the immortality to
join us in OH this *Saturday*!   join us in OH this Severity!
Enter now before it's too late'   Enter now before it's too late

Tried to replace 2 out of 22 words (9%), using minimum word length 8 with transform-ld50k transformation engine.

opportunity	AP3T3N3TA	immortality	AM3T3L3TA
saturday	S3T3T3A	severity	S3F3R3TA

16

https://twitter.com/MittRomney/status/238684068592644097

'Under @BarackObama,   ⟹   Under @BarackObama,
we've seen new *barriers* to   we've seen new carriers to
energy *production* & failure   energy prevention & failure to
to take *advantage* of   take admittance of America's
America's *resources*'   freckles

Tried to replace 4 out of 17 words (24%), using minimum word length 8 with transform-ld50k transformation engine.

advantage	ATF3NT3K	admittance	ATM3T3NK
barriers	P3R33S	carriers	K3R33S
production	PR3T3KS33N	prevention	PR3F3NS33N
resources	R3S33S3S	freckles	FR3KL3S

https://twitter.com/MittRomney/status/238706364187303936

'My plan for Energy   ⟹   My plan for Energy
Independence will deliver   Indifference will deliver more
more jobs & more take-home   jobs & more take-home pay
pay for middle-class *families*'   for middle-class studies

Tried to replace 2 out of 16 words (13%), using minimum word length 8 with transform-ld50k transformation engine.

families	F3M3L33S	studies	ST3T33S
independence	ANT3P3NT3NK	indifference	ANT3F3R3NK

https://twitter.com/MittRomney/status/238727664976920576

'Incomes down sharply in the   ⟹   Incomes down sharply in the
imaginary recovery   impregnable raspberry
@BarackObama touts. We   @BarackObama touts. We
can do better'   can do better

Tried to replace 2 out of 13 words (15%), using minimum word length 8 with transform-ld50k transformation engine.

imaginary	AM3K3N3RA	impregnable	AMPR3KN3PA
recovery	R3K3F3RA	raspberry	R3SP3RA

https://twitter.com/MittRomney/status/238748017333776385

'.@BarackObama's war on coal has cost *Americans* jobs & raised energy prices' $\Rightarrow$.@BarackObama's war on coal has cost Emissions jobs & raised energy prices

Tried to replace 1 out of 12 words (8%), using minimum word length 9 (≥8 specified) with transform-ld50k transformation engine.

americans	AM3R3K3NS	emissions	AM3S33NS

https://twitter.com/MittRomney/status/239060585986273280

'I welcome the support of the *delegates formerly* pledged to @RickSantorum' $\Rightarrow$ I welcome the support of the delegate fearfully pledged to @RickSantorum

Tried to replace 2 out of 11 words (18%), using minimum word length 8 with transform-ld50k transformation engine. I had been considering adding a check to ensure that singular words didn't become plural, and vice versa, but making the plural into singular works here.

delegates	T3L3K3T3S	delegate	T3L3K3T
formerly	F3M3LA	fearfully	F33F3LA

https://twitter.com/MittRomney/status/239081000318144514

'I have spent my life turning around *troubled enterprises*, and I will bring these *experiences* to the White House' $\Rightarrow$ I have spent my life turning around threatened aspirations, and I will bring these mercenaries to the White House

Tried to replace 3 out of 19 words (16%), using minimum word length 8 with transform-ld50k transformation engine.

enterprises	ANT3PR3S3S	aspirations	ASP3R3S33NS
experiences	AKP3R33NS3S	mercenaries	M3S3N3R33S
troubled	TR33PL3T	threatened	TR33T3N3T

https://twitter.com/MittRomney/status/239108812693450752

'Almost 5.2 million *Americans* have been out of work for at least 6 months in the *imaginary recovery* @BarackObama touts' $\Rightarrow$ Almost 5.2 million Barbarians have been out of work for at least 6 months in the unattractive rectory @BarackObama touts

Tried to replace 3 out of 20 words (15%), using minimum word length 8 with transform-ld50k transformation engine.

americans	AM3R3K3NS	barbarians	P3P3R33NS
imaginary	AM3K3N3RA	unattractive	AN3TR3KT3F
recovery	R3K3F3RA	rectory	R3KT3RA

https://twitter.com/MittRomney/status/239399099806400512

'In the *imaginary recovery*   ⟹   In the hereditary sanctuary
@BarackObama touts,   @BarackObama touts,
manufacturing lost 562,000   manipulating lost 562,000
jobs & the sector is showing   jobs & the sector is showing
signs of *weakness*.'   signs of wieners.

Tried to replace 4 out of 18 words (22%), using minimum word length 8 with transform-ld50k transformation engine. "Manipulating" is the only replacement found for "manufacturing."

imaginary	AM3K3N3RA	hereditary	A3R3T3T3RA
manufacturing	M3N3F3KT3R3NK	manipulating	M3N3P3L3T3NK
recovery	R3K3F3RA	sanctuary	S3NKT33RA
weakness	W33KN3S	wieners	W33N3S

https://twitter.com/MittRomney/status/239505461664153600

'I applaud those in Tampa   ⟹   I applaud those in Tampa
making *appropriate schedule*   making elaborate twitter
changes.'   changes.

Tried to replace 2 out of 9 words (22%), using minimum word length 8 with transform-ld50k transformation engine. Given the medium, this one was too good to pass up.

appropriate	APR3PR33T	elaborate	AL3P3R3T
schedule	SK3T3A	twitter	TW3T3A

https://twitter.com/MittRomney/status/239739259463024644

'In 2008, @BarackObama   ⟹   In 2008, @BarackObama
attacked John McCain for   atoned John McCain for
proposing cuts to *Medicare*,   praising cuts to Marmalade,
but now @BarackObama cut   but now @BarackObama cut
Medicare by $716b'   Marmalade by $716b

Tried to replace 4 out of 18 words (22%), using minimum word length 8 with transform-ld50k transformation engine.

attacked	AT3K3T	atoned	AT3N3T
medicare	M3T3K3A	marmalade	M3M3L3T
proposing	PR3P3S3NK	praising	PR33S3NK

https://twitter.com/MittRomney/status/240526230254923779

'When you attack success like @BarackObama has, you will see less of it. *Celebrate* your *achievements*' ⟹ When you attack success like @BarackObama has, you will see less of it. Serenade your sweatpants

Tried to replace 2 out of 16 words (13%), using minimum word length 9 (≥8 specified) with transform-ld50k transformation engine.

achievements	AK33F3M3NTS	sweatpants	SW33TP3NTS
celebrate	S3L3PR3T	serenade	S3R3N3T

https://twitter.com/MittRomney/status/240565049675108352

'If you have a *business* and you started it, you did build it. And you deserve credit for that' ⟹ If you have a bookcase and you started it, you did build it. And you deserve credit for that

Tried to replace 1 out of 19 words (5%), using minimum word length 8 with transform-ld50k transformation engine.

business	P3S3N3S	bookcase	P33K3S

https://twitter.com/MittRomney/status/240595831437275138

'Small *businesses* are the *lifeblood* of our economy. Be proud of your success' ⟹ Small buffaloes are the lifeboat of our economy. Be proud of your success

Tried to replace 2 out of 13 words (15%), using minimum word length 9 (≥8 specified) with transform-ld50k transformation engine.

businesses	P3S3N3S3S	buffaloes	P3F3L33S
lifeblood	L3F3PL33T	lifeboat	L3F3P33T

https://twitter.com/MittRomney/status/240919648856576000

'We have 23 million *Americans* today that are out of work or *underemployed*' ⟹ We have 23 million Pelicans today that are out of work or underemployed

Tried to replace 2 out of 13 words (15%), using minimum word length 9 (≥8 specified) with transform-ld50k transformation engine. There were no alternative suggestions for "underemployed."

americans	AM3R3K3NS	pelicans	P3L3K3NS
underemployed	ANT3R3MPL333T	underemployed	ANT3R3MPL333T

https://twitter.com/MittRomney/status/240941830060011520

'.@PaulRyanVP is a man of *tremendous character*, and I look forward to hearing him speak tonight'

⇒

.@PaulRyanVP is a man of delirious conjecture, and I look forward to hearing him speak tonight

Tried to replace 2 out of 16 words (13%), using minimum word length 9 (≥8 specified) with transform-ld50k transformation engine.

character	K3R3KT3A	conjecture	K3N33KT3A
tremendous	TR3M3NT33S	delirious	T3L3R333S

https://twitter.com/MittRomney/status/240955810631520256

'After nearly 4 years of *declining* incomes and *skyrocketing* costs, *Americans* deserve better. Join me'

⇒

After nearly 4 years of disrupting incomes and scavenging costs, Courtesans deserve better. Join me

Tried to replace 3 out of 15 words (20%), using minimum word length 9 (≥8 specified) with transform-ld50k transformation engine. "Scavenging" is the only replacement found for "skyrocketing."

americans	AM3R3K3NS	courtesans	K33T3S3NS
declining	T3KL3N3NK	disrupting	T3SR3PT3NK
skyrocketing	SK3R3K3T3NK	scavenging	SK3F3NK3NK

https://twitter.com/MittRomney/status/240958522286800898

'With the right steps & the right *leadership*, the 21st century can & will be an American century'

⇒

With the right steps & the right censorship, the 21st century can & will be an American century

Tried to replace 1 out of 18 words (6%), using minimum word length 10 (≥9 specified) with transform-ld50k transformation engine. Ironically, the original tweet was deleted. (Upon further examination, it seemed to be a duplicate tweet from a few weeks earlier.)

leadership	L33T3S3P	censorship	S3NS3S3P

https://twitter.com/MittRomney/status/240977548681551872

'It is not only bad *economics* $\Rightarrow$ It is not only bad dramatics to
to saddle future *generations*   saddle future corporations
with a *mountain* of debt, it is   with a fountain of debt, it is
immoral'   immoral

Tried to replace 3 out of 18 words (17%), using minimum word length 8 with transform-ld50k transformation engine.

economics	AK3N3M3KS	dramatics	TR3M3T3KS
generations	K3N3R3S33NS	corporations	K3P3R3S33NS
mountain	M33NT33N	fountain	F33NT33N

https://twitter.com/MittRomney/status/241235548122013696

'Our Plan for a *Stronger* $\Rightarrow$ Our Plan for a Stranger
Middle Class will create 12   Middle Class will create 12
million new jobs & higher   zillion new jobs & higher
take-home pay'   take-home pay

Tried to replace 2 out of 17 words (12%), using minimum word length 7 with transform-ld50k transformation engine.

million	M3L33N	zillion	S3L33N
stronger	STR3NK3A	stranger	STR3NK3A

4 Tweet and Replacement Statistics

Total number of transformed tweets: 59

	Minimum	Maximum	Mean	σ	Median
Replacement words in tweets	1	6	2.61	1.14	2.0
Words in original tweets	8	22	15.46	3.61	16.0
Percentage replacements	5	38	17.54	7.57	16.0
(Minimum) length of replaced words					
Actual	5	10	8.19	1.03	8.0
Specified	5	9	7.8	0.66	8.0

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