

The scheme summarised below was one of 35 that passed the sifting process and was forwarded to the Expert Commission following the first session of the Congress.

IESC 11

**Reducing just the worst irregularities
by Masha Bell**

I believe that after nearly 400 years of putting up with a very irregular spelling system, the *main aim* of improving English spelling should be to make *learning to read easier*.

Nobody can learn much without learning to read first, including learning to spell. Furthermore, nearly everyone now writes predominantly on electronic devices which automatically correct most spelling errors. On mobiles phones, writing has become largely just a matter of recognising the right word and tapping on it. Being able to read thus remains as important as ever. Being able to spell much less so.

Learning to read English could be much easier by merely *undoing some of the worst changes* made to its writing system since it was first adapted from Latin in the 7th century. It could be greatly speeded up by merely **reducing exceptions** to:

Spellings for short **/e/** (e.g. **head, said, friend**),
short **/u/** (**come, once, touch**),
/ee/ (**speak, even, believe, weird, marine, people ...**),
consonant doubling (**finish dinner; copy, poppy**) and
-e as a marker of long vowels (**bone, save - gone, have**).

The worst aspect of English spelling is to make children's first two years at school much harder than in other languages. And one of the biggest causes of this are the *irregular spellings for short vowels* in around 200 much used words, like '**said, any, other**'. Any reduction in their number would be of great help.

Nearly all children make good progress with both reading and writing when they first start learning to do so, because initially they are generally taught only with regularly spelt short words, like '**dad met him on the bus**'. - If **/a/**, **/e/**, **/i/**, **/o/** and **/u/** were always spelt like that, their reading and writing would continue to improve rapidly. It invariably becomes markedly slower only when they begin to meet more and more words in which some of the *letters* with which they first learn to read are used for *different sounds*, like '**was, he, kind, once, push**'.

The irregular spellings for **a**, **i** and **o** however do not impede progress as much as those for **e** and **u**:

1. Short **/a/** is spelt irregularly just in '**plait, plaid**' and '**meringue**'.
2. Exceptions to short **/i/** make only 6 common words tricky (**build, built, English, pretty, busy, women**). The other 39 occur less often and do not hinder early learning significantly (abyss, crypt, cyclical, system... *sieve*.)

3. Short /**o**/ is spelt irregularly in just 33 words, and the use of **a** for /**o**/ after **w** and **qu** (*was, want, squash...*) in 29 words is almost predictable. It is spelt regularly only in a few newer words like '*wobbly, wombat, wonky*'. **Wa** and **qua** do however cause some reading difficulties (swan *swam*; was *wagging*) and would ideally eventually be amended too.

At the beginning of learning to read and write, in the early years at school, the [irregular spellings for /e/ and /u/](#) obstruct progress worst, because they occur in many of the tricky words that children begin to meet in their literacy lessons soon after they first start school. Improving at least most of them would make a clearly noticeable difference to young children's educational progress.

They also make strong candidates for reform because most of them were made irregular with *deliberate changes* to the original English spelling system. The spelling of short /**u**/ was diluted mainly in the 9th century, with the adoption of **o** next to *n, m, v* and *w* (*son, mother, love, wonder*), partly because the letter **v** (or Latin number 5) was then used for four sounds (i.e. *vp, vse, even, vwith*). Now that the sounds of /**u**/, /**v**/ and /**w**/ (double *vv*) have different spellings, the use of **o** for /**u**/ does nothing but make both learning to read and write much harder than need be.

Spellings for short /**e**/ became irregular predominantly with the adoption of **ea** in the 15th century: for short /**e**/ in 51 words and /**ee**/ in 156 words. Its use for both short /**e**/ and /**ee**/ created the reading difficulties epitomised by '*must read*' and '*have read*'. These could be much reduced by at least dropping the *surplus a* from the 51 words in which **ea** spells the short /**e**/ sound (*head, thread*).

Adoption of regular spellings for the /**ee**/ sound would also be of enormous help, to both young and older learners. The current 12 different spellings for /**ee**/ (*leave, sleeve, believe, these, weird, police, people...*) are used in 459 words and pose one of the most time-consuming hurdles in *learning to write* English.

They cause many **reading difficulties as well**, because nine of the 12 different spellings for /**ee**/ are used for other sounds too:

treat – great, threat, react; even – ever; ceiling – veil, eider; fiend – friend, died, diet; he – then; key – they; machine – define, engine; people – leopard, leotard; ski – hi.

Reducing the 12 unpredictable spellings to just **ee**, would reduce the current total of 4,219 unpredictably spelt common English words by more than a tenth and make learning to read much easier too. Even adopting **ee** for just the 156 words in which /**ee**/ is currently spelt with **ea** (*lead, to read*) would make a substantial difference.

Completely regular spellings for /**ee**/ would have the additional benefit of reducing the 335 differently spelt, labour-intensive English [homophones](#) like '*heel/heal*' by 47. They became standardised with the publication of Samuel Johnson's dictionary in 1755, although they hardly ever serve any useful purpose.

At least 2,500 other homophones get by perfectly well with just one spelling for their different meanings (*bank, boot, trunk, act, play...*). The US adoption of '*practice*', for both noun and verb, has caused no problems either. The perverse English differentiation

between 'to practise' and 'a practice' generates endless 'misspellings' (cf. to service, a service; to notice, a notice).

Johnson was also responsible for weakening the English method of distinguishing between [short and long](#) vowels, as in 'made, madder'. He made it unpredictable, by introducing hundreds of **exceptions** like 'radish, shadow, study'. There is no good reason why his whims should continue to be obeyed and why regular consonant doubling - only after stressed short vowels in words of more than one syllable - should not become as acceptable as its current random usage.

Children's 'errors', like 'animal', 'family' and 'holiday', show that the original purpose of doubling is easy to grasp. It causes endless 'mistakes' only because it is used unsystematically. Adoption of systematic doubling would reduce the time currently needed for learning to read and write English very considerably, but it would also change the present look of hundreds of words.

If the inclusion of consistent consonant doubling should be deemed too much change for one reform, systematic doubling should at least be adopted when regularising irregular spellings of short /e/ and /u/. A few dozen of them have no doubled consonants after their irregular spellings (e.g. *many, dozen* – cf. *penny, buzzer*).

Some words with irregular /e/ and /u/ also have **surplus letters**, sometimes in addition to omitted doubling (e.g. *honey* – cf. *runny*). They were added mainly in the 15th and 16th centuries, to help printers earn more money. They now serve no purpose but make learning to read more difficult.

Surplus -e endings hinder reading progress because they undermine the use of -e as an **indicator of long vowels** (e.g. *home, alone*). They undermine the short / long vowel system and make learning to read more difficult (*five - live*), just like omitted consonant doubling. They should at least be scrapped when short vowel spellings become regularised (e.g. *done* → *dun*, *some* → *sum*, *honey* → *hunny*).

There is [much else wrong](#) with English spelling, but some irregularities would be more difficult to regularise, because they have no clear best spelling (e.g. *her, bird, turned; air, fare*). They also create predominantly *only writing* difficulties, like the many irregular spellings of unstressed endings, such as 'pardon, certain, urban, truncheon'. They are less detrimental to overall literacy progress.

The irregular spelling for /e/, /u/ and /ee/, inconsistent **consonant doubling** and **surplus** uses of -e are most responsible for English-speaking countries continuing to have high levels of functional illiteracy. Improving them would be a more certain and permanent way of speeding up learning to read and write and raising overall educational attainment, than changes in teaching methods or increases in educational expenditure. Ideally, they would all be corrected, but even just making the uses of **e, u** and **ee** more regular would make a very substantial difference to learners.

Below you can see 1,393 common words with irregular and regularised spellings for:

- 1) short /e/ in 61 words,
- 2) short /u/ in 68 words,

- 3) 326 words with variants for /ee/;
- 4) 146 words with surplus -e endings,
- 5) 794 words with omitted, alternative or surplus consonant doubling.

Those 1,393 irregularities all stem from deliberate dilutions of English spelling consistency. Correcting them all would halve the English literacy learning burden. - The 794 words with omitted and surplus consonant doubling undermine the systematic doubling in 504 words, like 'attic, better, bitter, bottom, button', and make them unpredictable as well. The 326 words with variant spellings for /ee/ undermine the 133 with ee, such as 'keep, sheep, asleep'.

The first three groups of irregularities are most in need of repair. Amending all five would make English spelling much more rule-governed and fathomable than it is now.

1) Irregular spellings for short /e/ in the left-hand column would change to those on the right, if regularised and using regular consonant doubling.

<p>Bred/bread, breadth, breast, breath, dead, deaf, dealt, death, dread, dreamt, head, health, led/lead, leant/lent, leapt, meant, red/read, realm, spread, sweat, thread, threat, wealth.</p> <p>Breakfast, cleanliness, cleanse, endeavour, feather, heather, instead, leather, measure, stealthy, treacherous, treadmill, treasure, weather/whether.</p> <p>Heaven, heavy, jealous, meadow, peasant, pheasant, pleasant, ready, (already), steady, weapon, zealous.</p> <p>Berry/bury, any, many.</p> <p>Jeopardy, leopard. Heifer.</p> <p>Friend, every, said, says. Wednesday.</p>	<p>Bred, bredth, brest, breth, ded, def, delt, deth, dred, dremt, hed, helth, led, lent, lept, ment, red, relm, spred, swet, thred, thret, welth.</p> <p>Brekfast, clenliness, clense, endeavour, fether, hether, insted, lether, mesure, stelthy, trecherous, tredmill, tresure, wether.</p> <p>Hevven, hevvy, jellous, meddow, pezzant, phezzant, plezzant, reddy,(alreddy), steddy, weppon, zellous.</p> <p>Berry, enny, menny.</p> <p>Jeppardy, leppard. Heffer.</p> <p>Frend, evry, sed, ses, Wensday.</p>
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'Leisure' and 'lieutenant' are probably best left unchanged because of difference in US/UK pronunciations.

2) Regularisation of the spellings for short /u/ in 68 words would change them to:

<p>Among, Monday, monger, mongrel, monk, monkey, month, mother, smother.</p> <p>Comfort, company, compass; front, nothing, son/sun, ton/tun, tongue, sponge.</p> <p>Wonder, worry.</p> <p>Brother, other.</p> <p>Above, come, dove, glove, love, shove, some/sum. Done/dun, none/nun.</p> <p>Does. Country, young.</p> <p>Enough, rough/ruff, slough, tough, hiccup/hiccough, southern, touch.</p> <p>One/won, once Blood, flood.</p> <p>Colour/color, dozen, honey, money, onion, stomach, thorough, cover, covet, covey, covenant, govern, oven, shovel, slovenly.</p> <p>Double, couple, trouble. courage, cousin, nourish.</p>	<p>Amung, Munday, munger, mungrel, munk, munky, munth, muther, smuther.</p> <p>Cumfort, cumpany, cumpass; frunt, nuthing, sun, tun, tung, spunge.</p> <p>Wunder, worry.</p> <p>Bruther, uther.</p> <p>Abuv, cum, duv, gluv, luv, shuv, sum. Dun, nun.</p> <p>Dus. Cuntry, yung.</p> <p>Enuff, ruf, sluf, slou, tuf, hickup, suthern, tuch.</p> <p>Wun, wunce Blud, flud.</p> <p>Cullour/cullor (UK/US) duzzen, hunny, munny, unnion, stummack, thurru, cuvver, cuvvet, cuvvy, cuvvenant, guvvern, uvven, shuvvel, sluvvenly.</p> <p>Dubble, cupple, trubble. currage, cuzzin, nurish.</p>
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3) Regularised spellings for the /ee/ sound

for 119 words which are currently spelt with **ea**:

Appeel, beecon, beed, beek, beem, beard, beast, beever, beneath, bleech, bleek, bleet, breathe, ceese, cheet, cleen, cleer, colleague, conceal, congeel, creem, creese, creature, deel, deen, decrease, defeet, diseese, dreem, dreery, eech, eeger, eegle, eer, eese, eest, Easter, eet, feer, feest, feature, freek, geer, gleem, gleen, heep, heet, heeth, heethen, heeve, increese, leef, leegue, leen, leep, leese, leesh, leest, leeve, meegre, meel, meen, meesles, neer, neet, ordeel, peech, peet, pleed, please, pleet, preech, queesy, reech, reelly, reep, reer, reeson, releese, repeet, retreat, reveel, scream, seel, seer, seeson, seet, sheef, sheeth, smear, sneek, speak, spear, squeek, squeel, squeemish, steem, streak, stream, teech, teek, teese, theatre, treecle, treason, treet, treaty, veel, ween, weery, weesel, weeve, wheet, wreeth, yeer, yeast, zeel. + **Leed/led, teer/tear**

47 words which now have **2 spellings** which would become:

Bee, beech, been, beet, breech, cheep, creek, deer, discreet, eery, feet, flee, freeze, Greece/greece, heel, leech, leek, meet, need, pee, peek, peel, peer, reed, reek, reel, see, seem, seen, sheer, steel, sweet, tee, teem, wee, week, weel; eev, eevs, jeens, heer, kee, peece, seeling, seemen, serial, sheek

78 words now with **open e** would change to:

Hee, mee, shee.

Adheesiv, arena, cafeteeria, cedar, chameeleon, Chinese, comedian, compeet, compleet, concreet, conven, convenient, decent, demon, equal, era, even, evil, experience, exterior, extreem, female, fever, frequent, genie, genius, hero, hyena, imperial, inferior, ingredient, intermediate, legal, legion, lenient, material, medium, meer, meteor, meter, millipeed, mysterious, obedient, period, peter, polytheen, proceed, previous, query, recent, recess, region, relay, scheme, sequence, sequin, series, serious, serum, species, sphere, stampeed, strategic, superior, suprem, sweat, tedious, them, theory, thees, torpedo, trapeez, vehicle, Veenus, zero.

28 now with **open i** change to:

Albeeno, aubergeen, bikeeni, clementeen, debree, fateeg, guilloteen, macheen, magazine, margareen, mareen, plasticteen, raveen, routeen, sardeen, tamboureen, tangereen, trampoline, unee, poleece, antee, moskeeto, prestige, regeem, peeza, Vaseleen, skee, suveneer.

26 now with **ie** become:

Acheev, beleef, beleev, breef, chief, deesel, feeld, feend, fierce, greef, greev, hygienic, medeeval, neece, peerce, preest, releef, releev, sheeld, shriek, seege, thief, theev, teer, weeld, yeeld.

13 with **ei** changing to:

conceev/conceet, deceev/deceet, perceev, receev/receet.

Caffeen, codeen, proteen, seeze, weer, weerd.

Oddments: Peeple; cathedral, seecret.

± In UK: geezer, leever.

6) Words with **surplus –e** endings which obscure its **vowel-lengthening function**

in words like *'define, bone, care, endure, advise, inflate, ignite, drive, save, survive'*.

Destine, determin, disciplin, doctrin, examin, engine, famine, feminine, genuine, heroine, imagin, intestin, jasmine, masculine, medicin, urin, gone, shone.

Are, (cf. car, care).

Conjure**e**, exposure**e**, failure**e**, figure**e**, fissure**e**, injure**e**, measure**e**, pleasure**e**, pressure**e**, procedure**e**, treasure**e**.

Adventure**e**, agriculture**e**, architecture**e**, capture**e**, caricature**e**, creature**e**, culture**e**, departure**e**, expenditure**e**, feature**e**, fracture**e**, furniture**e**, future**e**, gesture**e**, lecture**e**, legislature**e**, literature**e**, manufacture**e**, miniature**e**, mixture**e**, nature**e**, picture**e**, puncture**e**, scripture**e**, signature**e**, structure**e**, temperature**e**, torture**e**, venture**e**, vulture**e**.

Purchase**e**, premise**e**, promise**e**, purpose**e**. (cf. atlas, devise, propose).

Accurate**e**, adequate**e**, affectionate**e**, candidate**e**, chocolate**e**, climate**e**, considerate**e**, corporate**e**, delicate**e**, desperate**e**, extortionate**e**, fortunate**e**, frigate**e**, illiterate**e**, immaculate**e**, immediate**e**, intermediate**e**, intricate**e**, laureate**e**, legitimate**e**, obstinate**e**, palate**e**, passionate**e**, pirate**e**, private**e**, proportionate**e**, senate**e**,

Composite**e**, Definite**e**, exquisite**e**, favourite**e**, granite**e**, infinite**e**, opposite**e**.

In 25 words the **-ate** endings are used for two different words (to deliberate a deliberate**e** act).

Advocate**e**, alternate**e**, appropriate**e**, approximate**e**, articulate**e**, associate**e**, certificate**e**, co-ordinate**e**, degenerate**e**, delegate**e**, deliberate**e**, designate**e**, desolate**e**, dictate**e**, duplicate**e**, elaborate**e**, estimate**e**, graduate**e**, intimate**e**, laminate**e**, moderate**e**, separate**e**, subordinate**e**, syndicate**e**, triplicate**e** (cf. inflate).

Give**e**, forgive**e**, have**e**, live**e** (cf. drive, save, alive),

abrasive**e**, abusive**e**, adhesive**e**, aggressive**e**, apprehensive**e**, comprehensive**e**, compulsive**e**, conclusive**e**, creative**e**, cursive**e**, decisive**e**, defensive**e**, depressive**e**, derisive**e**, detective**e**, dismissive**e**, divisive**e**, effusive**e**, elusive**e**, evasive**e**, excessive**e**, exclusive**e**, expensive**e**, explosive**e**, expressive**e**, extensive**e**, fugitive**e**, impressive**e**, impulsive**e**, incisive**e**, inclusive**e**, initiative**e**, intensive**e**, invasive**e**, massive**e**, motive**e**, narrative**e**, objective**e**, obtrusive**e**, offensive**e**, oppressive**e**, passive**e**, pensive**e**, permissive**e**, perspective**e**, persuasive**e**, possessive**e**, productive**e**, progressive**e**, prospective**e**, radioactive**e**, repulsive**e**, respective**e**, responsive**e**, selective**e**, sensitive**e**, subjective**e**, submissive**e**, subversive**e**, successive**e**.

5) Respellings for 574 words with currently omitted or variant **consonant doubling** and 219 words surplus doubling.

328 words merely **lack doubling** after their short, stressed vowels:

ability, abollish, abom**mm**inable, academ**mm**ic, acadd**dd**emy, ag**gg**ony, alumin**nn**ium, Amer**rr**ica, ann**nn**imal, apollogise, aquatt**tt**ic, Arrab, arrable, arrid, asparragus, aston**nn**ish, astrollog**y**, astron**nn**omy, athlett**tt**ic, attom, atom**mm**ic, authorrity, av**vv**enue, av**vv**erage,

bannish, bannister, barom**mm**eter, batton, ben**nn**efit, billious, bod**dd**y, bottany, briggand, Brittish,

cabb**bb**in, cabb**bb**inet, calam**mm**ity, cam**mm**era, canopy, capp**pp**ita, capp**pp**ital, carramel, carravan,

carrol, cattapult, catt**tt**egory, cav**vv**alry, cav**vv**ern, cav**vv**ity, charriot, charrity, cherrish,

clarrity, cle**vv**er, clinnical, collony, com**mm**edy, commet, com**mm**ic, comparrison,

connifer, consp**rr**acy, contin**nn**ue, copp**y**, corral, cred**dd**it, crim**mm**inal, crit**tt**ic, critical

dammage, decid**dd**uous, ded**dd**icate, dellicacy, deliv**vv**er, delluge, dem**mm**ocrat, demolish

de**pp**uty, derrelict, devellop, dev**vv**il, dilapp**pp**idated, diplomatt**tt**ic, distrib**bb**ute, dom**mm**inate, dom**mm**ino,

draggon, driv**vv**el, driv**vv**en,

econom**mm**ic, econ**nn**omy, ed**dd**it, ed**dd**ucate, electron**nn**ic, elle**mm**ent, elev**vv**en, elligible,

elim**mm**inate, em**mm**erald, em**mm**migrate, empirr**rr**ical, enam**mm**el, enn**nn**emy, en**nn**ergy, epp**pp**ic, epidem**mm**ic,

epp**pp**isode, equiv**vv**alent, ev**vv**er, ev**vv**idence, experr**rr**iment,

fabbulous, faci**ll**ities, fam**mm**ily, fam**mm**ished, fed**dd**eral, fellon, finn**nn**ish, flag**gg**on, florr**rr**ist, forr**rr**est,

gallaxy, garrage(UK), giv**vv**en, glamm**mm**our, grann**nn**ary, grattitude, grav**vv**ity,

hab**bb**it, hav**vv**oc, hazzard, hellicopter, herr**rr**ald, herritage, herroin, herron, hexag**gg**onal,

hid**dd**eous, histor**rr**ic, holliday, horroscope, hov**vv**el, hov**vv**er,

iddiot, imm**mm**age, inhab**bb**it, inherrent, inher**rr**ited, itall**ll**ic, jag**gg**uar, Jann**nn**uary, jav**vv**elin,

l**att**eral, l**att**itude, lav**v**ender, lem**mon**, le**pp**er, lib**ber**al, lib**bb**erty, lilly, lim**mit**, lin**nn**ear, lit**tt**eral, lit**tt**erary, lizzard, lozzenge,

madd**am**, magn**ett**ic, magn**iff**icent, major**rr**ity, mann**age**, mann**ua**l, mann**us**cript, mathem**att**ics, med**dd**al, med**dd**ical, mell**o**dy, mell**o**n, mem**mm**orise, mem**mm**ory, menn**u**, mer**rr**it, mett**al**, metrop**ol**itan, mill**it**ary, min**nn**eral, min**nn**imal, min**nn**imum, min**nn**ister, min**or**rrity, mir**rr**acle, mod**dd**ern, mod**dd**est, mon**nn**itor, mon**ot**tonous, mon**nn**ument, mor**rr**al, mor**al**lity, nav**vv**igate,

neb**bb**ula, nev**vv**er, num**err**ical, obl**itt**erate, o**pp**era, o**pp**erate, op**in**nion, or**rr**ange, org**ann**ic, or**rr**igin, Pac**iff**ic, pall**ac**e, pann**ic**, parrasol, parr**ish**, path**ett**ic, pellican, penn**al**ty, penn**et**rate, perr**il**, perr**is**copes, perr**ish**, pet**tt**al, pitt**y**, plann**et**, platt**in**um, po**ett**ic, pol**lic**y, pol**l**ish, pol**itt**ical, pol**l**itics, pop**pp**ular, popular**rr**ity, pov**vv**erty, prel**im**inary, prem**mm**ier, prim**ar**rrily, prior**rr**ity, priv**il**ege, probab**il**lity, prob**bb**able, pro**dd**uct, pro**ff**it, prohib**bb**it, prom**in**ent, pro**pp**er, pro**pp**erty, pro**ss**ecute, prov**vv**erb, prov**vv**idence, pun**nn**ish, quiv**vv**er,

radd**ic**al, radd**ish**, rapp**id**, rav**vv**enous, reall**it**y, re**ff**erence, re**ff**uge, rel**lic**, rem**med**y, rev**vv**erend, ridd**ic**ule, riv**vv**er, riv**vv**et, robb**in**,

sall**ad**, sall**ar**y, sall**o**n, satt**in**, satt**ur**ate, Satt**urn**, sav**vv**age, scav**vv**enge, sem**mi**, sev**vv**en, shiv**vv**er, shriv**vv**el, sign**iff**icant, inc**er**rrity, sinn**is**ter, skelle**tt**on, sniv**vv**el, soll**id**, soll**it**ary, spann**ie**l, spec**iff**ic, spinn**ach**, spir**rr**it, st**att**ic, ster**rr**ilise, strat**te**gy, stren**nu**ous, studd**y**, sup**er**son**nn**ic,

tall**ent**, tall**o**n, tapp**es**try, tel**le**scope, tel**le**vision, te**pp**id, tett**an**us, theol**lo**gy, therr**ap**ist, therm**om**meter, tim**mm**id, toll**er**ate, tonn**ic**, topp**ic**, transpar**rr**ent, trib**bb**ute, tro**pp**ics,

vall**ent**ine, vall**id**, vall**ue**, vann**ish**, ventrilloqu**is**t, verr**y**, vid**de**o, vigg**or**ous, vinn**eg**ar, vit**al**lity, voll**u**me, voll**u**n**nn**ary, vom**mm**it,

wag**gon**, wizz**ard**, wizz**en**ed, yet**ti**.

73 words do not use **ck, dg, ss** or **zz**, as in '*beckon, badger, passive, buzzard*'. With regular doubling they would look as follows:

cro**ck**odile, de**ck**ade, de**ck**orate, do**ck**ument, exe**ck**utive, fack**ul**ty, plack**ar**d, re**ck**ognise, re**ck**ord(n), record(v), rid**ic**kulous, se**ck**ond(n), se**ck**ond(v), se**ck**ondary, se**ck**ular, vack**uu**m, bro**ck**oly, hick**up**, o**ck**upye, pick**olo**, su**ck**ulent, toback**o**, e**ck**o, me**ck**anism, che**ck**ered, lack**er**, lick**or**, lick**or**ish,

ad**gg**ile, did**gg**it, exad**gg**erate, frid**gg**id, led**gg**end, led**gg**islate, lod**gg**ic, mad**gg**ic, orid**gg**inal, refrid**gg**erate, red**gg**iment, red**gg**ister, rid**gg**id, trad**gg**ic, ved**gg**etable,

ass**id**, antiss**id**ipate, capass**id**ity, dess**id**imal, electriss**id**ity, expliss**id**it, glass**id**ier(UK), muniss**id**ipal, spess**id**imen, veloss**id**ity, adoless**id**ent, convaless**id**ent, cress**id**ent, fassin**id**ate,

clozz**et**, depoz**zz**it, dezz**ert**, hezz**it**ate, mizz**er**able, pozz**it**ive, prezz**en**ce, prezz**en**t, prezz**id**ent, prizz**on**, rezz**id**ent, rizz**en**, vizz**it**.

55 words are without doubled consonants after **irregularly spelt short vowels**. 18 with short /e/ and 21 with short /u/ have already been shown above. The remaining 16 are:

bus**y**, wome**n**, chrys**al**is, cyl**in**der, cyn**ic**al, syn**ag**ogue, syn**o**nym, syr**u**p, lyr**ic**, tyr**an**ny, typ**ic**al, phys**ic**s, phys**ic**al laure**l**, saus**ag**e.

With regular spellings and doubling they would become:

Bizz**y**, wimm**en**, chriss**al**is, cill**in**der, cinn**ic**al, sinn**ag**og, sin**no**nim, sir**ru**p, lir**ri**c, tir**ra**ny, tipp**ic**al, fizz**ic**s, fizz**ic**al, lor**re**l, soss**ag**e.

34 words do **not** have the **-ccle doubling in endings**, like '*apple, little, etc.*'

coup**le**, doub**le**, trou**ble**, apost**le**, brist**le**, bust**le**, cam**el**, chap**el**, chis**el**, driv**el**, enam**el**, grav**el**, grist**le**, grov**el**, hovel**el**, hust**le**, jost**le**, lev**el**, mod**el**, musc**le**/muss**el**, nov**el**, pan**el**, rust**le**, shriv**el**, sniv**el**, subt**le**, swiv**el**, thist**le**, trav**el**, treb**le**, trest**le**, tri**pl**e, whist**le**, wrest**le**.

They should be:

cup**pl**e, dubb**le**, trubb**le**,

apossle, brissle, bussle, **cammle**, **chapple**, **chizzle**, **drivvle**, **enammle**, **gravvle**, **grissle**, **grovvle**, **hovvle**, **hussle**, **jossle**, **levvle**, **moddle**, **mussle**, **novvle**, **pannle**, **russle**, **shrivvle**, **snivvle**, **suttle**, **swivvle**, **thisse**, **travvle**, **trebble**, **tressle**, **tripple**, **wissle**, **ressle**.

85 words have **assorted additional irregularities**:

Adequate, **comparative**, **feminine**, **frigate**, **heroine**, **minute(x2)** **negative**, **olive**, **palate/palette/pallet**, **primitive**, **relative**, **senate**, **amateur**, **camouflage**, **catalogue**, **cemetery**, **column**, **foreign**, **honest**, **honour**, **monarch**, **monastery**, **shadow**, **sheriff**, **scissors**, **solemn**, **widow**, **premise**, **promise**, **menace**, **novice**, **analysis**, **anonymous**, **anorak**, **beret**, **cabaret**, **café**, **chalet**, **calendar**, **caterpillar**, **chemical**, **chemistry**, **civil**, **dynamic**, **elephant**, **endeavour**, **lamine(x2)**, **lieutenant**, **moderate(x2)**, **pacify**, **platypus**, **plumber**, **polythene**, **qualify**, **quality**, **quarantine**, **rebel(x2)**, **refuse(x2)**, **regular**, **salmon**, **Saturday**, **separate(x2)**, **similar**, **simile**, **sugar**, **tenor/tenner**, **valiant**, **venison**, **verify**, **detach**.

They should be

addequat, comparrativ, femminin, friggat, herroin, minnit(n,v) + minute(adj), neggativ, olliv, **pallet**, primmitiv, rellativ, sennat, ammatuur, cammuflage, cattalog, semmetry, collum, forren, onnest, onner, monnark, monnastury, shaddo, sherrif, sizzers, sollem, widdo, premmis, prommis, mennis, novvis, anallisis, anonnimous, annorac, berray, cabbaray, caffay, challay, callender, catterpiler, kemmical, kemmistury, sivvil, dinammic, ellefent, endevver, lamminate(v) + lamminat(adj), leftennent(UK), lutennent(US), modderate(vb) + modderat(adj), passifye, plattipus, plummer, pollytheen, quollifye, quollity, quarranteen, rebble(n) + rebel(vb), reffuse (n) + refuse(vb), regguler, sammon, Satterday, sepparate(vb) + sepparat(adj), simmiler, simmily, shugger, **tenner**, vallient, vennisen, verrifye, detach.

219 words have **surplus** consonant doubling – *not after a short, stressed vowel*.

Some of them have other irregularities as well (affectionate, excellent), including **missing** doubling (satellite).

<p>abbreviate, accompany, accomplish, accord, accordance, accordion, account, accrue, accumulate, accuse, accustom, occur, occurrence, cockerel, cocktail, mackerel, add/ad, odd, address(uk), affair, affect, affection, affectionate, affluent, afford, chauffeur, differential, diffusion, effect, efficient, effluent, effusive, giraffe, graffiti, offence, offend, offensive, official, officious, paraffin, sheriff, sufficient, aggravate, aggressive, egg, alliance, allotment, allow, allowance, allowed/aloud, ballistic, balloon, bull, bulldoze, cell/sell, collage, collapse, collect, collection, collide, constellation, controlled, excellent, hello, illegal, illegible, illiterate, illuminate, illusion, illustration, installation,</p>	<p>abreeviate, acumpany, acumplish, acord, acordence, acordion, acount, acrue, acumulate, acuse, acustom, occur, occurrence, cocrel, coctail, macrle, ad, od, adress(uk), affair, afect, afection, afectionat, affluent, aford, shofer, diferential, difusion, efect, eficient, efluent, efusiv, giraf, grafeety, ofence, ofend, ofensiv, oficial, oficious, parrafin, sherrif, suficient, agravate, agressiv, eg, aliance, alotment, alow, alowence, aloud, balistic, baloon, bul, buldoze, sel, colage, colapse, colect, colection, colide, constelation, controled, exelent, helo, ileegal, iledgible, ilitterat, iluminate, ilusion, ilustration, instalation,</p>
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<p>intellectual, jewellery, llama, marvellous, parallel, pastille, roller, satellite, swollen, tonsillitis, traveller(UK), wholly, accommodation, amm<u>u</u>nition, comm<u>a</u>nd, commemorate, comm<u>e</u>nce, commiss<u>i</u>on, comm<u>i</u>t, comm<u>o</u>dities, comm<u>o</u>tion, communication, comm<u>u</u>nion, comm<u>u</u>nity, comm<u>u</u>ter, immaculat<u>e</u>, immediat<u>e</u>, immense, immersion, imm<u>o</u>rtal, imm<u>u</u>ne, programme, programmer, recommend, anniversary, announce, annoy, annul, connect, Finn/fin, inn, mayonnaise, person<u>n</u>el, questionnair<u>e</u>, savann<u>a</u>h, tyranny, app<u>a</u>l, apparat<u>u</u>s, appar<u>e</u>nt, app<u>e</u>ndix, appl<u>a</u>ud, appl<u>a</u>use, appli<u>a</u>nce, appl<u>y</u>, app<u>o</u>int, app<u>r</u>eciate, app<u>r</u>ehensiv<u>e</u>, app<u>r</u>entice, app<u>r</u>oach, app<u>r</u>opriat<u>e</u>(adj), app<u>r</u>opriate(vb), app<u>r</u>o<u>v</u>e, app<u>r</u>oximat<u>e</u>(adj), app<u>r</u>oximate(vb), hippopotam<u>u</u>s, opp<u>o</u>rtunity, opp<u>o</u>se, sapp<u>h</u>ire, suppl<u>y</u>, support, sup<u>p</u>ose, arr<u>a</u>nge, array, arrest, arriv<u>e</u>, barricade, correct, correlat<u>i</u>on, correspond, curriculum, err, erratic, hurrah, interrupt, irregular, irrigat<u>i</u>on, purr, serrat<u>e</u>d, surrend<u>e</u>r, surreptitious, surround, terrific, torrential, verruc<u>a</u>, abscess, ass<u>a</u>il, ass<u>a</u>ssin, assassinate, assault, assem<u>b</u>le, assert, assessment, assessor, assign, assist, assistant, associat<u>e</u>(n), associat<u>e</u>(vb), ass<u>o</u>rt, assume, cass<u>e</u>t<u>t</u>e, compass, congress, cyp<u>r</u>ess, dessert, embass<u>y</u>, ess<u>e</u>ntial, fission, fortress, gross, guess, harness, lasso, mat<u>t</u>ress, moose/mous<u>e</u>, necessar<u>i</u>ly, necessar<u>y</u>, possess, possessiv<u>e</u>, possibility, recess, witness, att<u>a</u>ch, att<u>a</u>ck, att<u>a</u>in, att<u>e</u>mp<u>t</u>, att<u>e</u>nd, att<u>e</u>ntion, att<u>o</u>rn<u>e</u>y, attr<u>a</u>ct, attribut<u>e</u>, battal<u>i</u>on, butt/but, cigaret<u>t</u>e, om<u>e</u>lett<u>e</u>, pal<u>e</u>tt<u>e</u>, sil<u>h</u>ouett<u>e</u>, pizza</p>	<p>intellectual, jewelry, lama, marvelous, parral<u>e</u>l, pastil, roler, sattel<u>i</u>te, swollen, toncilitis, travvler(UK), holy, acomodation, amunition, comand, comem<u>m</u>orate, comence, comission, comit, com<u>o</u>ddities, comotion, comunication, comunion, community, comuter, imackulat, imeediat, imence, imersion, imortal, imune, program, programer, recomend, aniversary, anounce, anoy, anull, conect, Fin/fin, in, mayonaise, personell, questionair, savanna, tirrany, apaul, aparatus, aparrent, apendix, aplaud, aplause, apliance, aplye, apoint, apreeciate, aprehe<u>s</u>iv, apre<u>n</u>tice, aproach, apropriat(adj), apropiate(vb), aproo<u>v</u>e, aproximat(adj), aproximate(vb), hipopottamus, oportunit<u>y</u>, opose, saffire, suplye, suport, suppose, araing<u>e</u>, aray, arest, arive, baricade, corect, corelation, corespond, curickulum, er, erattic, hurah, interupt, iregguler, irigation, pur, serated, surender, sureptitious, surround, teriffic, tore<u>n</u>tial, verooca, abces, asail, asassin, asassinate, asault, asemble, asert, asesment, asessor, asine, asist, asistent, asociat(n), asociate(vb), asort, asume, caset, cumpas, congres, siperes, desert, embacy, esential, fision, fortres, gro<u>c</u>e, ges, harnes, lasoo, matres, mooce, necesarrily, nessesary, posess, posessiv, posibillity, reeces, witnes, atatch, atack, atain, atempt, atend, atention, atorny, atract, atribute, batallion, but, sigaret, omlet, palet, silooet, peetsa</p>
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In addition to the above irregularities, several dozen words have needlessly doubled **-ff, -ll, -ss** (puff, well, fuss

at the end of short words. They have many exceptions (if, us, rough, yes) and can also be confusing (doll – roll - stole, shall – call – crawl).