# Using technology to solve unsolvable problems: a casestudy from the King James Bible

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### Abstract

Computer technology has now made it possible to carry out large-scale investigations of small points of usage that would have been impracticable previously. The point is illustrated using the variation between *builded* and *built* in the King James Bible of 1611. The historical background of the two forms is reviewed, and the 271 instances found are analysed with respect to their grammatical differences. Stylistic factors are of especial interest, explored in relation to the usage variation in the individual books of the Bible and to possible preferences in the six companies involved in the translation. An Appendix lists all usages in each book grouped under each company.

Keywords: King James Bible, stylistics, grammar, builded vs built, computer facilitation

### 3.1 Introduction

It is not so long ago that linguists would ruefully reflect on the fact that some of the most interesting questions they would like answered were well beyond their abilities - either because one researcher's life was too short or the number of academic collaborators required was beyond the realm of practical cooperation. A good example is the study of Shakespeare's innovative language. It has long been recognized that the first editors of the Oxford English Dictionary (OED) privileged Shakespeare in tracing the origins of words, with the result that his name appeared over two thousand times as a 'first recorded usage'. Linguistically naive interpreters would then claim that he had 'invented' all these words, when of course all the listing

showed was that he was the first person known to have written them down. I recall wondering in the 1990s, when I first started writing frequently on Shakespeare's language, how on earth I could establish the facts. It would require reading through all the literature of the Early Modern English period in the 16th century, looking for each of the 2000+ items, to see if any of them had been used before Shakespeare did. Not possible.

Computer technology and the emergence of 'big data' in the form of corpus linguistics have changed everything. Now hundreds of texts from that period have been scanned or transcribed, and made searchable online. Many still await an online presence, but there are now more than we need to make huge progress, simply by searching for an item in one of the specialized corpora of the period that have begun to be collected.<sup>2</sup> A word like lonely is shown in the second edition of the OED as a Shakespearean first usage (in Coriolanus, variously dated between 1605 and 1608), but when the editors get round to revising this entry for the next edition it will show at least one prior usage: the Countess of Pembroke uses it in her play Antonius in 1595 (l. 1828). Based on this kind of research, including the entries in the OED that have already been revised, the figures are moving steadily downwards.<sup>3</sup> They will probably end up in the low hundreds - still a hugely impressive lexical achievement, of course, but light-years away from the exaggerated claims of bardolators that 'Shakespeare invented half the words in the English language', and the like.

But Shakespeare is not the only monument to benefit from technological advance. The other huge linguistic edifice of the Elizabethan period is the *King James Bible (KJB)*, published in 1611. The two sources are roughly the same size, both just under a million words. The *KJB* is of little value as a source for first recorded usages, as the deliberately conservative stance of its translators introduced few lexical novelties - only 55, according to one study. But its language is nonetheless a frequent point of enquiry, for reasons that range from the theological to the stylistic, and

<sup>&</sup>lt;sup>1</sup> I called the first recorded usages 'Williamisms' in long-running series of articles for the magazine of Shakespeare's Globe in London, Around the Globe. These are now downloadable on my website <www.davidcrystal.com>.

<sup>&</sup>lt;sup>2</sup> The OED itself now has sophisticated search facilities for the online dictionary (in Advanced Search at <www.oed.com>). A comparison with other texts from the period is included in Jonathan Culpeper (ed.) An Encyclopaedia of Shakespeare's Language, 2 volumes. (London: Bloomsbury, forthcoming).

<sup>&</sup>lt;sup>3</sup> A revised perspective is presented in the third edition of David Crystal, The Cambridge Encyclopedia of the English Language (Cambridge: Cambridge University Press, 2019, p. 65).

<sup>&</sup>lt;sup>4</sup> In David Crystal, The Stories of English (London: Penguin, 2004, Ch 13). This figure is also likely to fall as the OED third edition proceeds.

some of the questions raised are extremely specific - minute, even - and few people would be prepared or able to devote the time and energy to answering them. In 2011, when the 400th anniversary of the *KJB* was being celebrated around the English-speaking world, I was asked one of these questions via my blog, and found it was now possible to answer it with some precision, thanks to the advent of search technology.

## 3.2 Builded or built

Two forms of the past tense of *build* are used in the *KJB*, and my questioner wanted to know whether there was a difference in usage or meaning. Certainly it is common enough today to find pairs of past forms that express a subtle aspectual difference, as with *burned*, *learned*, and *smelled* - generally spelled with *-ed* in American English, but with a common alternative in British English of *burnt*, *learnt*, and *smelt*. The *-ed* form is more likely to be used when the duration of an action or the process of acting is being emphasized, and the *-t* form when something happens once, or takes up very little time, or the focus is on the result of a process rather than on the process itself. So we're more likely to find *The fire burned* for three days, not *The fire burnt for three days*. A sudden event is likely to be spelled with *-t*: *I burnt the toast*. And certainly it's going to be *I burnt my finger on the oven*. Was *built* and *builded* doing the same kind of thing?

The first step, in such an enquiry, is to establish the historical background, and here the OED is invaluable in the way it lists early forms. When build appears as a verb in early Middle English, its past tense was mainly regular (recorded forms include bildide, bylded, builded), though some writers used an irregular form (e.g. bult, byld, built). The past participle was mainly irregular, with a wide range of forms (e.g. gebyld, bilde, bilt, buylt), along with the occasional use of a regular form (e.g. bylded, builded). In the Early Modern English period, the two forms, regular and irregular, are both frequent, with built gradually dominating during the 16th century - an unusual instance of an irregular form defeating a regular one. There are instances of builded recorded as late as 1800, and it is still heard today in some regional dialects. We see both forms in use around 1600, the choice between them being dictated by external factors. Shakespeare, for example, normally uses built (16 instances), but has three instances of builded, each one using the extra syllable to fill out a metrical line, as in Sonnet 124: 'No, it was builded far from accident'. There are many instances in the plays of this sort of thing: for example, the choice

between -s and -eth in the 3rd person singular of verbs is also often conditioned by metrical demands. But the reason for choosing one form over another is not always clear, and sometimes we are left with the impression that the choice is random, or reflecting the preferences of an individual scribe or compositor.

It is unclear whether an aspectual contrast was already operating in Early Modern English, but it would hardly apply in this case. The built/builded alternation is more like the present-day alternation between highlit / highlighted, input / inputted, or wet / wetted, where the choice is governed by such factors as euphony, rhythm, and specialized usage (e.g. highlighted as a norm in hairdressing), as well as preferences related to a person's age and taste. Occasionally the two forms develop different regional uses (as in US dove, snuck, gotten) or different meanings (he was hanged/it was hung, I sped/speeded), but this is unusual.

What is the situation in the *KJB*? I found 271 instances of *build* used in the following four ways: as a past tense (Modern Standard English *built* and the emphatic *did build*); as a past participle form (as in Modern *have built*); as part of a passive construction (as in Modern *was built by the Romans*); and as an adjective (as in Modern *a well-built house*). There is just one instance in *KJB* of an adjectival usage (4 *Ezra* 5.25, 'and of all builded cities thou hast hallowed Sion unto thyself'), and only six instances of *did build*: see the Appendix below at *Ruth* 4.11, 1 *Kings* 11.7, 1 *Kings* 16.34, 2 *Chronicles* 35.3, *Nehemiah* 3.3, and *Esdras* 5.67. Leaving these six aside, we find 196 instances of *built* and 69 of *builded* - a ratio of nearly 3:1. The norm for the translators, as for everyone else at the time, was evidently *built*.

The situation in relation to *built* and *builded* in Early Modern English thus seems very similar to that presented by *highlight* and the others today. Looking at the list of instances at the end of this paper, there are many parallel sentences which suggest that the forms are in free variation:

Genesis 8.20 Noah builded an altar Genesis 22.9 Abraham built an altar

1 *Chronicles* 22.5 the house that is to be builded 1 *Chronicles* 22.19 the house that is to be built

There is even an example of both forms in the same verse:

*Philemon* 3.4 For every house is builded by some man; but he that built all things is God.

This seems to be a case where rhythm is the governing factor: *builded* in the first clause preserves an iambic rhythm (try replacing it with *built* to see the effect). And the same 'natural' rhythm comes from using *built* in the second clause.

However, there are some grammatical differences between the two constructions. *Built* is more likely to be used on its own, without auxiliary verbs (e.g. 'he built it'): 112 of 196 instances (57%), compared with 26 of 69 (38%) for *builded*. And when we look at individual auxiliaries, we find a definite preference for using them with *built*. The modal verbs used in the dataset are *cannot*, *may*, *might*, *shall*, *shalt*, *should*: only 4 of these are used with *builded*, whereas 17 are used with *built*. Similarly, 12 uses of auxiliary *have* occur with *builded* compared to 44 with *built*. On the other hand, there's no such trend with auxiliary *be*: 18 instances with *builded* and 17 with *built*.

Another difference relates to verb transitivity. If people wanted to use the verb intransitively (i.e. without an object, as in Luke 17.28 'they planted, they builded') there is a definite tendency to use *builded*: 12 out of 69 instances are intransitive (17%), compared with only 3 out of 196 instances of intransitive *built* (1.5%). The phrasal verb *build up* is found with 10 instances of *built up* and 2 of *builded up*. However, the other syntactic sequences I looked at showed few or no differences, e.g. the sequence *build* + not is found with 1 instance each (*built not*, *builded not*). Stylistic factors seem to be involved, such as a desire to maintain parallelism (in the case of *planted... builded*) or euphony (as in *built up*, avoiding the repeated d in *builded up and* maintaining strong end-weight).

In all cases, we are talking about trends, not sharp distinctions. The grammar of the two forms substantially overlaps, and I found nothing to suggest a semantic contrast. So, what accounts for the differences that can't be explained by stylistic factors? One possibility is that the six committees (56 people in all) who shared out the translations had a preference for one form or the other. Here are the relevant statistics (*builded--built--did build-*-Total):

First Westminster 15 (16%)--76--3--94 First Cambridge 27 (32%)--55--2--84 First Oxford 4 (14%)--24--0--28 Second Oxford 1 (10%)--9--0--10 Second Westminster 3 (37%)--5--0--8 Second Cambridge 19 (70%)--27--1--47 There's a hint of a difference between Oxford and Cambridge, but the figures are small, and the overriding impression is that each committee was comfortable with both usages.

Perhaps individual books prompted one usage over the other? The following list brings to light one interesting fact: Ezra and 4 Ezra stand out in their exclusive use of *builded*. Together their 22 instances amount to almost a third of all cases. I have no explanation for this, so I asked Gordon Campbell, author of *Bible*: *The Story of the King James Version 1611-2011* (Oxford University Press, 2010) for his opinion, and he commented: 'An individual translator is a possibility, but so is an individual compositor. There may have been rules or agreed conventions about tense endings, but on many issues compositors took decisions. These weren't based on principles but rather on habits (when there is consistency) or the need to save or occupy space (when there is inconsistency).' Yes, space-saving strategies and compositor preferences have long been known in the case of Shakespeare. It remains to be seen whether they play an equally important role in relation to the KJB.

There are few other instances of *builded* predominance. Here is a complete listing, book by book (*built--builded--did build*):

Genesis	470
Exodus	310
Numbers	510
Deuteronomy	310
Joshua	610
Judges	500
Ruth	001
1 Samuel	300
2 Samuel	300
1 Kings	3532
2 Kings	910
1 Chronicles	810
2 Chronicles	3601
Ezra	0120
Nehemiah	591
Job	210
Psalms	210
Proverbs	020
Ecclesiasticus	110
Song of Solomon	010

Isaiah	400
Jeremiah	910
Lamentations	100
Ezekiel	420
Daniel	200
Amos	100
Micah	100
Haggai	100
Zechariah	200
Matthew	200
Mark	100
Luke	410
Acts	100
1 Corinthians	100
Ephesians	110
Colossians	100
Hebrews	020
Philemon	100
1 Peter	100
Judith	100
Esdras	821
1 Maccabees	1040
2 Maccabees	210
4 Ezra	0100
Sirach	210
Wisdom of Solomon	100
Tobit	310

Perhaps the poetic qualities of *Proverbs* and *Song of Solomon* motivated the exclusive use of the older form, but the numbers are tiny. Only in two other books (*Genesis* and *Nehemiah*) are there more instances of *builded* than *built*. *Genesis* is curious: until chapter 13 we find only *builded*, then there is a switch, with just a single exception.

### 3.3 Conclusion

There are of course other ways of investigating the variation which could provide additional insights. In particular, I have not been able to take into account the role, if any, of the source languages, Hebrew and Greek, as my classical background is not up to it. But I use this case-study here for

a different reason. It is another example of how modern technology can allow us to make some headway into a tiny question of usage in a systematic way, incorporating insights from descriptive historical linguistics and modern linguistic theory. I would not have dreamed of carrying out such an investigation into such a small point thirty years ago. It is commonplace now. And it is fair to say that the evolution of this new e-climate, which we so take for granted today, has in no small way been the result of the innovative work of Jürgen Handke.

# 3.4 Appendix

A list of all built/builded forms, in reading sequence.

### First Westminster Company

Genesis 4.17 he builded a city; 8.20 Noah builded an altar; 10.11 and builded Nineveh; 11.5 which the children of men builded; 12.7 there builded he an altar; 12.8 there he builded an altar; 13.18 and built there an altar; 22.9 Abraham built an altar; 26.25 And he builded an altar; 33.17 and built him an house; 35.7 And he built there an altar

*Exodus* 1.12 And they built for Pharaoh treasure cities; 17.15 And Moses built an altar; 24.4 and builded an altar; 32.5 he built an altar before it

*Numbers* 13.22 Hebron was built seven years before Zoan; 21.27 let the city of Sihon be built; 23.14 and built seven altars; 32.34 the children of Gad built Dibon; 32.37 and the children of Reuben built Heshbon; 32.38 and gave other names unto the cities which they builded

Deuteronomy 6.10 cities, which thou buildedst not; 8.12 hast built goodly houses; 13.16 it shall not be built again; 20.5 that hath built a new house

Joshua 8.30 Then Joshua built an altar; 19.50 he built the city; 22.10 the half tribe of Manasseh built there an altar; 22.11 the half tribe of Manasseh have built an altar; 22.16 ye have builded you an altar; 22.23 we have built us an altar; 24.13 cities which ye built not

Judges 1.26 and built a city; 6.24 Then Gideon built an altar there; 6.28 upon the altar that was built; 18.28 and they built a city; 21.4 and built there an altar

Ruth 4.11 which two did build the house of Israel

1 Samuel 7.17 and there he built an altar; 14.35 And Saul built an altar... that he built

2 Samuel 5.9 And David built round about from Millo; 5.11 they built David an house; 24.25 And David built there an altar

1 Kings 3.2 there was no house built unto the name of the Lord; 6.2 the house which king Solomon built for the Lord; 6.5 he built chambers; 6.7 And the house, when it was in building, was built of stone; 6.9 So he built the house; 6.10 And then he built chambers; 6.14 So Solomon built the house, and finished it; 6.15 And he built the walls of the house; 6.16 And he built twenty cubits... he even built; 6.36 And he built the inner court; 7.2 He built also the house of the forest of Lebanon: 8.13 I have surely built thee an house to dwell in: 8.20 and have built an house; 8.27 how much less this house that I have builded; 8.43 this house, which I have builded; 8.44 the house that I have built for thy name; 8.48 the house which I have built for thy name; 9.3 this house, which thou hast built; 9.10 when Solomon had built the two houses; 9.17 And Solomon built Gezer; 9.24 her house which Solomon had built for her; 9.25 the altar which he built; 10.4 the house that he had built; 11.7 Then did Solomon build an high place; 11.27 Solomon built Millo; 11.38 as I built for David; 12.25 Then Jeroboam built Shechem ... and built Penuel; 14.23 they also built them high places; 15.17 and built Ramah: 15.22 timber, wherewith Baasha had builded: 15.22 and king Asa built with them Geba: 15.23 and the cities which he built: 16.24 and built on the hill ... the city which he built; 16.32 the house of Baal, which he had built in Samaria; 16.34 In his days did Hiel the Bethelite build Jericho; 18.32 he built an altar; 22.39 all the cities that he built

2 *Kings* 14.22 He built Elath; 15.35 He built the higher gate; 16.11 And Urijah the priest built an altar; 16.18 that they had built in the house; 17.9 and they built them high places; 21.3 For he built up again the high places; 21.4 And he built altars; 21.5 And he built altars; 23.13 which Solomon the king of Israel had builded; 25.1 they built forts around it

### First Cambridge Company

1 *Chronicles* 6.10 the temple that Solomon built in Jerusalem; 6.32 until Solomon had built the house; 7.24 Sherah, who built Bethhoron; 8.12 Shamed, who built Ono; 11.8 And he built the city round about; 17.6 Why have ye not built me an house to dwell in; 21.26 And David built there an altar; 22.5 and the house that is to be built

2 Chronicles 6.2 I have built an house: 6.10 and have built the house: 6.18 this house which I have built: 6.33 this house which I have built: 6.34 the house which I have built: 6.38 the house which I have built: 8.1 at the end of twenty years, wherein Solomon had built the house of the Lord: 8.2 That the cities which Huram had restored to Solomon, Solomon built them: 8.4 And he built ... all the store cities, which he built in Hamath: 8.5 Also he built Bethhoron the upper; 8.11 the house that he had built for her; 8.12 the altar of the LORD, which he had built before the porch; 9.3 the house that he had built; 11.5 And Rehoboam dwelt in Jerusalem, and built cities; 11.6 He built even Bethlehem: 14.6 And he built fenced cities in Judah: 14.7 So they built and prospered; 16.1 and built Ramah; 16.6 and he built therewith Geba; 17.12 and he built in Judah castles; 20.8 And they dwelt therein, and have built thee a sanctuary; 26.2 He built Eloth; 26.6 and built cities; 26.9 Uzziah built towers; 26.10 Also he built towers in the desert; 27.3 He built the high gate of the house of the Lord; 27.4 Moreover he built cities in the mountains of Judah, and in the forests he built castles and towers; 32.5 he ... built up all the wall that was broken; 33.3 he built again the high places; 33.4 Also he built altars in the house of the Lord: 33.5 And he built altars for all the host of heaven: 33.14 he built a wall without the city of David: 33.15 all the altars that he had built; 33.19 the places wherein he built high places: 35.3 the house which Solomon the son of David king of Israel did build

Ezra 3.2 and builded the altar of the God of Israel; 4.1 the adversaries of Judah and Benjamin heard that the children of the captivity builded the temple; 4.13 if this city be builded; 4.16 if this city be builded again; 4.21 Give ye now commandment to cause these men to cease, and that this city be not builded; 5.8 the house of the great God, which is builded with great stones; 5.11 build the house that was builded these many years ago, which a great king of Israel builded and set up; 5.15 and let the house of God be builded in his place; 6.3 Let the house be builded; 6.14 And the elders of the Jews builded... And they builded

Nehemiah 3.1 they builded the sheep gate; 3.2 And next unto him builded the men of Jericho. And next to them builded Zaccur the son of Imri; 3.3 But the fish gate did the sons of Hassenaah build; 3.13 they built it; 3.14 he built it; 3.15 he built it; 4.1 when Sanballat heard that we builded the wall; 4.6 So built we the wall; 4.17 They which builded on the wall; 4.18 every one had his sword girded by his side, and so builded; 6.1 heard that I had builded the wall; 7.1 when the wall was built; 7.4 the houses were not builded; 12.29 the singers had builded them villages round about Jerusalem

Job 12.14 he breaketh down, and it cannot be built again; 20.19 he hath violently taken away an house which he builded not; 22.23 If thou return to the Almighty, thou shalt be built up

Psalms 78.69 And he built his sanctuary like high palaces; 89.2 Mercy shall be built up for ever; 122.3 Jerusalem is builded as a city that is compact together

Proverbs 9.1 Wisdom hath builded her house; 24.3 Through wisdom is an house builded

*Ecclesiastes* 2.4 I builded me houses; 9.14 there came a great king against it, and besieged it, and built great bulwarks against it

Song of Solomon 4.4 Thy neck is like the tower of David builded for an armoury

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*Isaiah* 5.2 and built a tower in the midst of it; 25.2 it shall never be built; 44.26 Ye shall be built; 44.28 Thou shalt be built

Jeremiah 7.31 they have built the high places of Tophet; 12.16 then shall they be built in the midst of my people; 19.5 They have built also the high places of Baal; 30.18 the city shall be builded upon her own heap; 31.4 Again I will build thee, and thou shalt be built; 31.38 the city shall be built; 32.31 from the day that they built it even unto this day; 32.35 And they built the high places of Baal; 45.4 that which I have built will I break down; 52.4 and built forts against it round about

Lamentations 3.5 He hath builded against me

Ezekiel 13.10 one built up a wall; 16.24 thou hast also built unto thee an eminent place; 16.25 thou hast built thy high place; 26.14 thou shalt be built no more; 36.10 the wastes shall be builded; 36.33 the wastes shall be builded

Daniel 4.30 Babylon, that I have built for the house of the kingdom; 9.25 the street shall be built again

Amos 5.11 ye have built houses of hewn stone

Micah 7.11 In the day that thy walls are to be built

Haggai 1.2 The time is not come, the time that the LORD's house should be built

Zechariah 1.16 my house shall be built in it; 8.9 that the temple might be built

### **Second Oxford Company**

Matthew 7.24 unto a wise man, which built his house upon a rock; 7.26 a foolish man, which built his house upon the sand; 21.33 and built a tower

Mark 12.1 and built a tower

Luke 4.29 whereon their city was built; 6.48 a man which built an house; 6.49 a man that without a foundation built an house upon the earth; 7.5 he hath built us a synagogue; 17.28 they planted, they builded

Acts 7.47 But Solomon built him an house

### **Second Westminster Company**

1 *Corinthians* 3.14 If any man's work abide which he hath built thereupon *Ephesians* 2.20 And are built upon the foundation of the apostles and prophets; 2.22 In whom ye also are builded together

Colossians 2.7 Rooted and built up in him

Hebrews 3.3 he who hath builded the house hath more honour than the house; 3:4 For every house is builded by some man

Philemon 3:4 but he that built all things is God

1 Peter 2.5 Ye also, as lively stones, are built up a spiritual house

### Second Cambridge Company

Judith 2 And built in Ecbatane walls

Esdras 1.3 the house that king Solomon the son of David had built; 2.24 if this city be built again; 4.51 until the time that it were built; 4.55 them until the day that the house were finished, and Jerusalem builded up; 5.53 the temple of the Lord was not yet built; 5.58 So the workmen built the temple of the Lord; 5.67 they that were of the captivity did build the temple unto the Lord God of Israel; 6.14 it was builded many years ago; 6.19 that the temple of the Lord should be built in his place; 6.24 the house of the Lord at Jerusalem should be built again; 6.28 I have commanded also to have it built up whole again

1 *Maccabees* 1.14 Whereupon they built a place of exercise at Jerusalem; 1.33 Then builded they the city of David; 1.54 and builded idol altars; 4.47 and built a new altar; 4.60 At that time also they builded up the mount Sion with high walls; 5.1 the altar was built; 10.12 the strangers, that were in the fortresses which Bacchides had built; 13.27 Simon also built a monument; 13.33 Then Simon built up the strong holds in Judea; 13.38 the strong holds, which ye have builded; 13.48 and built therein a dwellingplace; 15.7 fortresses that thou hast built; 16.9 Cedron, which Cendebeus had built; 16.15 Docus, which he had built

2 *Maccabees* 1.18 after that he had builded the temple; 4.12 For he built gladly a place of exercise; 10.2 the altars which the heathen had built in the open street

4 Ezra 5.25 and of all builded cities thou hast hallowed Sion unto thyself; 7.6 A city is builded; 8.52 a city is builded; 9.24 where no house is builded; 10.27 there was a city builded; 10.42 there appeared unto thee a city builded; 10.44 even she whom thou seest as a city builded; 10.46 after thirty years Solomon builded the city; 10.51 the field where no house was builded; 13.36 being prepared and builded

Sirach 1.15 She hath built an everlasting foundation with men; 49.12 who in their time builded the house; 50.2 And by him was built from the foundation the double height

Wisdom of Solomon 14.2 the workman built it by his skill

Tobit 1.4 the temple of the habitation of the most High was consecrated and built for all ages; 13.10 that his tabernacle may be builded in thee again with joy; 13.16 For Jerusalem shall be built up with sapphires; 14.5 the house of God shall be built in it for ever

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