Determining Speaker Distinction in English Derivational Morphology:

The Use of -ify & -ize

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Intro

All languages exist as complex systems governed by rules which native speakers acquire and use intrinsically; despite this, languages are also constantly undergoing changes. Productivity of language demonstrates a speaker's ability to create neologisms and other novel parts of speech that remain intelligible to other speakers of the language—English speakers often rely on derivational morphology for this. However, very little research has been done on synonymous derivational suffixes and the choices speakers must make when selecting one for the purpose of creating neologisms. The goal of this study is to investigate the linguistic aspects which influence speaker distinction between the synonymous derivational suffixes *-(i)fy* and *-ize*.

Methods

Initially, phonetic and phonemic analyses were conducted using existing English verbs containing the two suffixes: 30 containing *-(i)fy* and 30 containing *-ize*. Using the preliminary findings from these analyses, an online survey was developed in Google Forms to test speaker judgements of affixation using the suffixes. The participant pool was comprised of 173 adults who self-identified as proficient in English. Participants were then provided a list of 20 English stems, both real and nonce. For each stem, participants were given three options of novel verbs to choose from: one ending in *-ify*, one ending in *-fy*, and one ending in *-ize*. A subsequent qualitative analysis consisted of creating phonetic analyses of each novel verb presented within the survey. These findings were then paired with a quantitative analysis of the frequency of participant responses for each individual stem. A comparison of these results with those from the phonetic analyses prior to the survey helped determine which aspects of language primarily affect speaker distinction between the use of the two suffixes.

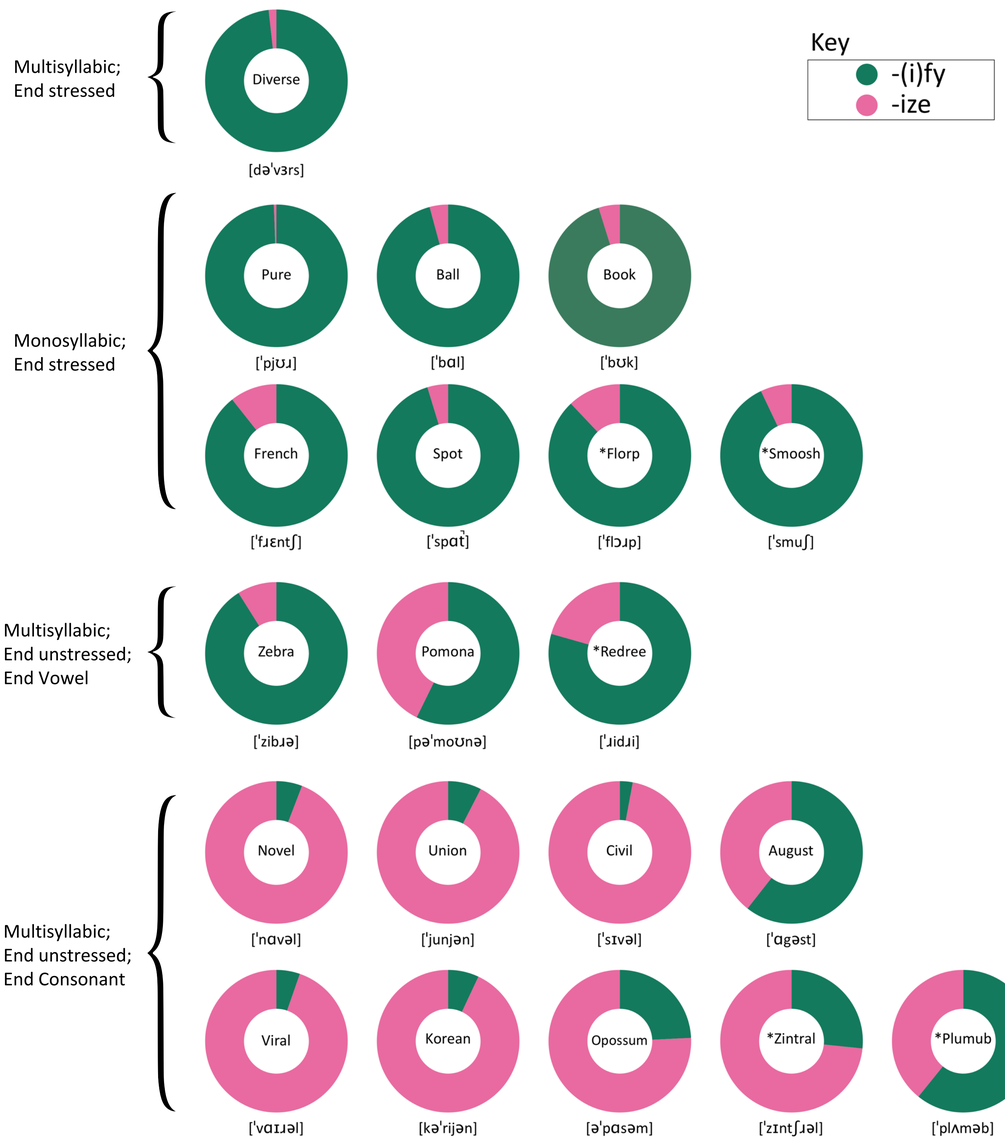
Figure 1: English Verb Transcription *-(i)fy*

Stem	Stem IPA	Verb	Verb IPA
acid	['æsəd]	acidify	[ə'sɪdəˌfaɪ]
beauty	['bjuri]	beautify	['bjurəˌfaɪ]
class	['klæs]	classify	['klæsəˌfaɪ]
code	['koʊd]	codify	['koʊdəˌfaɪ]
dense	['dɛns]	densify	['dɛnsəˌfaɪ]
diverse	[də'vɝs]	diversify	[də'vɝsəˌfaɪ]
electric	[ə'lɛktɹɪk]	electrify	[ə'lɛktɹəˌfaɪ]
false	['fɑls]	falsify	['fɑlsəˌfaɪ]
glory	['glɔɹi]	glorify	['glɔɹəˌfaɪ]
humid	['hjumәd]	humidify	[hju'mɪdəˌfaɪ]
identity	[aɪ'dɛntәti]	identify	[aɪ'dɛntəˌfaɪ]
just	['dʒʌst]	justify	['dʒʌstəˌfaɪ]
liquid	['lɪkwәd]	liquefy	['lɪkwəˌfaɪ]
mummy	['mʌmi]	mummify	['mʌməˌfaɪ]
note	['noʊt]	notify	['noʊɾəˌfaɪ]
null	['nʌl]	nullify	['nʌləˌfaɪ]
object	['ɑbdʒɛkt]	objectify	[əb'dʒɛktəˌfaɪ]
person	['pɝsən]	personify	[pə'sɑnəˌfaɪ]
pure	['pjʊɹ]	purify	['pjʊɹəˌfaɪ]
rare	['ɹɛɹ]	rarify	['ɹɛɹəˌfaɪ]
rigid	['ɹɪdʒәd]	rigidify	[ɹə'dʒɪdəˌfaɪ]
sign	['saɪn]	signify	['sɪgnəˌfaɪ]
simple	['sɪmpәl]	simplify	['sɪmpləˌfaɪ]
solid	['sɑlәd]	solidify	[sə'lɪdəˌfaɪ]
specific	[spə'sɪfɪk]	specify	['spɛsəˌfaɪ]
test	['tɛst]	testify	['tɛstəˌfaɪ]
type	['taɪp]	typify	['tɪpəˌfaɪ]
unit	['junәt]	unify	['junəˌfaɪ]
verity	['vɛɹәri]	verify	['vɛɹəˌfaɪ]
zombie	['zɑmbi]	zombify	['zɑmbəˌfaɪ]

Figure 2: English Verb Transcription *-ize*

Stem	Stem IPA	Verb	Verb IPA
apology	[ə'pɑlәdʒi]	apologize	[ə'pɑlə,dʒaɪz]
capital	['kæpәrәl]	capitalize	['kæpərə,laɪz]
category	['kærәgɔɹi]	categorize	['kærəgə,ɹaɪz]
character	['kɛɹәktɚ]	characterize	['kɛɹəktə,ɹaɪz]
collective	[kə'lɛktɪv]	collectivize	[kə'lɛktə,vaɪz]
commercial	[kə'mɝʃәl]	commercialize	[kə'mɝʃə,laɪz]
conceptual	[kən'sɛptʃәwәl]	conceptualize	[kən'sɛptʃəwə,laɪz]
contextual	[kən'tɛkstʃәwәl]	contextualize	[kən'tɛkstʃəwə,laɪz]
crystal	['kɹɪstәl]	crystallize	['kɹɪstə,laɪz]
dramatic	[dɹə'mæɾɪk]	dramatize	['dɹɑmə,taɪz]
emphasis	['ɛmfәsɪs]	emphasize	['ɛmfə,saɪz]
familiar	[fə'mɪljɚ]	familiarize	[fə'mɪljə,ɹaɪz]
glamour	['glæmɚ]	glamourize	['glæmə,ɹaɪz]
homogenous	[hə'mɑgənәs]	homogenize	[hə'mɑdʒə,naɪz]
industrial	[ɪn'dʌstɹijәl]	industrialize	[ɪn'dʌstɹijə,laɪz]
item	['aɪɾәm]	itemize	['aɪɾə,maɪz]
legal	['ligәl]	legalize	['ligə,laɪz]
magnet	['mægnәt]	magnetize	['mægnə,taɪz]
mythology	[mɪ'θɑlәdʒi]	mythologize	[mɪ'θɑlə,dʒaɪz]
philosophy	[fə'lɑsәfi]	philosophize	[fə'lɑsə,faɪz]
political	[pə'lɪɾәkәl]	politicize	[pə'lɪɾə,saɪz]
popular	['pɑpjәlɚ]	popularize	['pɑpjәlə,ɹaɪz]
professional	[pɹə'fɛʃәnәl]	professionalize	[pɹə'fɛʃənə,laɪz]
propaganda	[ˌpɹɑpə'gændə]	propagandize	[ˌpɹɑpə'gæn,daɪz]
revolution	[ˌɹɛvə'luʃәn]	revolutionize	[ˌɹɛvə'luʃə,naɪz]
special	['spɛʃәl]	specialize	['spɛʃə,laɪz]
standard	['stændɚd]	standardize	['stændə,daɪz]
subsidy	['sʌbsәdi]	subsidize	['sʌbsə,daɪz]
synthesis	['sɪnθәsɪs]	synthesize	['sɪnθə,saɪz]
tranquil	['tɹæɪŋkwәl]	tranquilize	['tɹæɪŋkwə,laɪz]

Figure 3: Frequency of Responses Relative to Syllable Structure



*Note: Although the included multisyllabic nonce words have no set precedent for exact pronunciation or stress placement, English stress patterns for nouns and adjectives often dictate primary stress on the first syllable.

Figure 4: Structure * Suffix Crosstabulation

			Suffix		
			ify	ize	Total
Structure	MultiStr	Count	168	3	171
		% within Structure	98.2%	1.8%	100.0%
		% within Suffix	8.3%	0.2%	5.0%
	Mono	Count	1104	74	1178
		% within Structure	93.7%	6.3%	100.0%
		% within Suffix	54.2%	5.5%	34.7%
	MultiUnV	Count	423	84	507
		% within Structure	83.4%	16.6%	100.0%
		% within Suffix	20.8%	6.2%	15.0%
	MultiUnC	Count	341	1193	1534
		% within Structure	22.2%	77.8%	100.0%
		% within Suffix	16.7%	88.1%	45.3%
Total		Count	2036	1354	3390
		% within Structure	60.1%	39.9%	100.0%
		% within Suffix	100.0%	100.0%	100.0%

Figure 5: Chi-Squared Test

Pearson Chi-Square	1690.916[a]
Likelihood Ratio	1897.672
Degrees of Freedom	3
Asymptotic Significance (2-sided)	.000
p<0.0001	

Results

Using the phonetic and phonemic analyses of 60 existing English verbs, I found differences in syllabic stress placement between words containing *-(i)fy* or *-ize* (Figures 1 & 2). With this information, the stems selected for the survey primarily varied in syllabic stress. Upon completion of the collection process, all data points were separated into separate frequency tables for each word. Afterwards, these data points were combined into four categories based on the stress patterning of the included stems: (1) monosyllabic, (2) multisyllabic with a stressed final syllable, (3) multisyllabic with an unstressed final syllable and ending in a vowel, and (4) multisyllabic with an unstressed final syllable and ending in a consonant. The frequencies within each category demonstrated a clear preference for *-ize* only in category 4 (Figures 3 & 4). A Chi-Square test was completed in SPSS to test for statistical significance of the data; the P-Value is <0.0001, thus making the results significant (Figure 5). These findings confirm a distinction between the usage of *-(i)fy* and *-ize*, as determined by the variable phonemic stress patterns of English. It appears that there are three conditions that must be met to make this distinction. For a stem to take the suffix *-ize*, it must (1) be multisyllabic, (2) end in an unstressed syllable, and (3) end in a consonant. In all other environments, roots take the alternate suffix *-(i)fy*. However, there also appear to be exceptions to this conclusion; as evidenced in both the phonetic/phonemic analyses and the survey responses, there are stems that meet the three conditions which still take *-(i)fy*. Notably, though, these words typically demonstrate a shift in stress from the first syllable to a secondary syllable. The exact reason for this particular phenomenon requires further research.

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