

General Evaluation Criteria:

When grading homeworks and tests, I am looking for the following:

- understanding of the problem
- understanding of the relevant course material
- correctness of the solution
- clarity in the solution (formalism, etc.)
- clarity in the argumentation
- completeness (answering everything that was asked for in the assignment)

Inadequacies in any of these areas can result in a lower grade. The following are some example grades and what you'd have to do to get them:

F	0-30	missing work gets an 0; completed but completely unsatisfactory gets a 30
D	63	Incomplete, or shows fundamental misunderstandings of the problem, the solution, and/or the formalism, contains egregious failures in argumentation
C+	77	Satisfactory. Shows some understanding of the problem and its solution, and some evidence of ability to use phonological formalism and reasoning.
B	83	Good in some ways, and basically a correct answer, but lacking in something, whether understanding, completeness, correctness, or clarity
B+	88	Very good, with only minor problems.
A	93	Excellent, no problems. Shows complete understanding of the issues in the problem, correct use of formalism, clear argumentation for the solution is provided and every part of the problem is addressed.
A+	100	Outstanding -- an A plus something extra: a novel but well-motivated approach, a discussion of an issue raised by the data, integration of material from throughout the course, etc.

Example problem with a solution earning an A:

Yiddish (a Germanic language): The data in (a) show an alternation that occurs in all speech styles; the data in (b) show a casual speech phenomenon.

a.	[fraib]	'(I) write'	[fraipst]	'(you sg.) write'
	[red]	'(I) speak'	[retst]	'(you sg.) speak'
	[vog]	'weight'	[vokʃol]	'scales'
	[briv]	'letter'	[briftregər]	'postman'
	[aiz]	'ice'	[aiskastn]	'ice box'
	[ʃantaʒ]	'blackmail'	[ʃantaʃ ʃtik]	'blackmailing tactics'
b.	[uf]	'up'	[uvvekn]	'wake up'
	[bux]	'book'	[buygeʃeft]	'bookshop'
	[bak]	'cheek'	[bagbein]	'cheekbone'
	[kop]	'head'	[kobveitik]	'headache'
	[zis]	'sweet'	[zizvarg]	'sweets (confectionery)'
	[ra(ə)ʃ]	'noise'	[ra(ə)ʒdik]	'noisy'
	[vait]	'far'	[vaidzeəvdik]	'farsighted'
	[ʃvits]	'sweat'	[ʃvidzbod]	'steambath'

- (i) Describe the processes operating in (a) and (b).
- (ii) In what ways do the two cases differ?
- (iii) Suggest the lexical forms of the words represented in both sets of data.
- (iv) Write a rule which will derive the phonetic forms from the lexical forms, and show one example derivation for a word from (a) and a word from (b).
- (v) Justify your rule (by showing that it is better than an alternative hypothesis).

These answers were taken from a student's homework; the comments in *italics* (usually in parenthesis and labelled CRW) are added by Dr. Wiltshire. *What I like about this answer: it's complete, thorough, clear, well-argued. The alternative hypothesis is developed enough to be understandable and somewhat plausible.*

- (i) Describe the processes operating in (a) and (b). The final consonant is assimilating the voicing (or lack thereof) of the next sound.
- (ii) In what ways do the two cases differ? In (a), in all speech styles of Yiddish, a voiced word-final consonant becomes voiceless in front of a voiceless sound. In (b), in casual speech, a voiceless word-final obstruent becomes voiced in front of a voiced consonant.
- (iii) Suggest the lexical forms of the words represented in both sets of data.
 (a) the final sounds are: /b/, /d/, /g/, /v/, /z/, /ʒ/
 (b) the final sounds are /f/, /x/, /k/, /g/, /s/, /ʃ/, /t/, /tʃ/
- (iv) Write a rule which will derive the phonetic forms from the lexical forms, and show one example derivation for a word from (a) and a word from (b).

Hypothesized Rule 1:

(a) /b/ → [p] before a voiceless consonant
 ↘ [b] elsewhere
 /g/ → [k] before a voiceless consonant
 ↘ [g] elsewhere

(b) /f/ → [v] before a voiced consonant
 ↘ [f] elsewhere
 /k/ → [g] before a voiced consonant
 ↘ [k] elsewhere

/d/ → [t] before a voiceless consonant
 ↘ [d] elsewhere

and in general:

[+voice,+obs] → [-voice]/ ___ [-voice]
(note: +voice can be omitted here—CRW)

/x/ → [ɣ] before a voiced consonant
 ↘ [x] elsewhere

and in general:

[-voice,+obs] → [+voice]/ ___ [+voice]
(note: -voice can be omitted here—CRW)

Examples:

(a) UR / aiz + kastn /
 ↓ voice assimilation
 SR [aiskastn]

(b) UR /bak + bein/
 ↓ voice assimilation
 SR [bagbein]

- (v) Justify your rule (by showing that it is better than an alternative hypothesis).

Hypothesis (Alternative) Rule 2

(a) /p/ → [p] elsewhere
 ↘ [b] word-finally
 /k/ → [g] elsewhere
 ↘ [k] word-finally

(b) /v/ → [v] elsewhere
 ↘ [f] word-finally
 /g/ → [g] elsewhere
 ↘ [k] word-finally

/t/ → [t] elsewhere
 ↘ [d] word-finally

and in general:

[-voice,+obs] → [+voice]/ ___ #

/ɣ/ → [ɣ] elsewhere
 ↘ [x] word-finally

and in general:

[+voice,+obs] → [-voice]/ ___ #

The alternative hypothesized rule 2 says that obstruents change their voicing when in a word-final position. These 2 alternate rules [(a) and (b)] do not work because they conflict. While (b) is plausible (=final devoicing), it conflicts with (a), which applies to all styles of Yiddish speech and which shows that words can end with voiced obstruents. In addition, the former hypothesized rule 1 is more natural and consistent for both parts [(a) and (b)]. Voice assimilation is common, and it serves as the same simple solution in all speech styles and just plain casual speech.

Conclusion: Hypothesis 1 is the better solution.

General Problem solving procedures

Steps to go through in solving phonology problems and writing solutions for homework assignments based on data sets (not all are applicable to every problem):

1. Isolate the **morphemes** (i.e., separate stems from affixes).
2. Identify the **phonetic alternants** of each morpheme (i.e., allomorphs) and look for patterns in the alternations.
3. Identify any sets of phonetically similar phones that are in complementary distribution and should therefore be assigned to the same **phoneme**.
Justify phonemic analyses by explicitly following our phonemic procedures.
4. Determine one **underlying representation (UR)** for each morpheme (unless the alternation is suppletive/idiosyncratic). The best choice for underlying representation **may not** be the form in the left-hand column, the nominative case, the present tense verb, etc. Examine **all** the data to determine the best underlying form.
5. Determine the **phonological processes** that must be posited in order to correctly derive the phonetic representations from the underlying representations. For each process, give a:
 - a) **name** (e.g. Final devoicing, vowel deletion, nasal assimilation)
 - b) **prose statement**, including a description of the environment in which it applies (e.g., before, after, or between particular segments, classes of segments, or boundaries)
 - c) **formal statement**, following the notation presented in class and in the book (if there's a conflict, go with what we've said in class or say what part of the book you're following)
 - d) **justification**, saying why you propose your rule rather than some other possible analysis. Usually you can find another possible analysis by trying the opposite form of the rule with the opposite underlying representation. That is, for a rule of voicing that starts from voiceless segments in the UR: [-voice] → [+voice]/ V_V the opposite rule would be devoicing starting from voiced URs, e.g.,: [+voice] → [-voice]/ __# You could justify your rule by showing that the opposite rule is more complex, less natural, gives wrong results for some of the data, etc.
6. State any restrictions on the **order** in which rules must apply to correctly account for the data.
7. Give **sample derivations** that illustrate the application and interaction of all the rules you have posited, particularly to show that your rule ordering is necessary and sufficient.
8. **Recheck the data** to see that the rules work -- that they will derive the correct phonetic representations from underlying representations without deriving incorrect ones.

A partial set of selection principles for doing phonological analysis

- 1) Unless there is evidence to the contrary, each morpheme is assumed to have a unique underlying representation (UR).
- 2) Unless there is evidence to the contrary, the UR of a morpheme is assumed to be identical to the surface representation (SR).
- 3) Evidence to the contrary in (2) includes cases of more than one SR for a given morpheme. When there are alternations, the UR of a morpheme is assumed to be:
 - a) identical to one of the SRs
 - b) the concatenation of phonetic elements found in one or more of the SRs
 - c) the concatenation of phonetic features found in one or more of the SRs
- 4) All else being equal, select a phonological solution (i.e., phonetically-motivated) over a lexical solution (i.e., dividing the lexicon into arbitrary classes) or a grammatical one (i.e., listing morphological and/or syntactic contexts in which a rule applies).

If a grammatical analysis is required, an analysis that refers only to general morphological or syntactic features is preferred over one that does not. Similarly, if a lexical solution is required, the preferred solution is the one that requires the smallest number of arbitrary classes.

- 5) All else being equal, select the analysis compatible with the data which:
 - a) is the most **general** (i.e., applies in the widest range of cases)
 - b) is the most **simple** (e.g., has the fewest symbols; but other measures of simplicity are also possible)
 - c) is the most **natural** (i.e., is phonetically-motivated and/or recurs across genetically-unrelated and geographically-distant languages)
 - d) **regularizes** the distribution of sounds at the underlying level (i.e., achieves symmetry and pattern congruity)
 - e) adheres most **closely to the SR**.
- 6) All else being equal, select an analysis which is independently motivated over one that is not.
- 7) All else being equal, select the analysis that has the fewest lexical exceptions to the fewest rules.