base/shift tutorial

How You Should Arrive at Your Judgments

When faced with the kind of judgment task required here, people are known to use a variety of approaches. However, there is one particular approach we would like to have you apply here, one that is sometimes called the “base/shift” method. It entails arriving at your final judgment in stages. Following is a tutorial trial from a different context that explains and illustrates how you should carry out the “base/shift” strategy.

Tutorial Trial: An Engineering Student?

Tutorial trial task: We ask you to judge the probability that a designated University of Michigan undergraduate, “J Doe,” is majoring in engineering, given that you know specific facts about that individual. Simply follow the stage-by-stage instructions.

NOTE: As suggested before, your judgment should heed the following conventions:

– 0% means that you are absolutely sure that J Doe is NOT an engineering major
– 50% means that you think that the J Doe is just as likely to be an engineering major as to not be an engineering major
– 100% means that you are absolutely sure that the respondent DOES major in engineering
– Increasing %’s imply your increasing certainty that J Doe is an engineering major

Stage 0: Undergraduate baserate

In Stage 0, the only thing you know about J Doe is that he/she is a University of Michigan undergraduate. Given that fact, a reasonable conclusion to draw is that J Doe’s probability of being an engineering student is the same as the percentage of Michigan undergraduates who are enrolled in the College of Engineering, right? In other words, your probability judgment that J Doe is an engineering student should be the same as your estimate of the percentage of Michigan undergraduates who are

majoring in engineering, what some people would call your estimate of the engineering " base rate" among UM undergraduates.

So, please think hard about what that percentage might be and then record that estimate as your Stage 0, Base Rate, Engineering Probability Judgment (Slide the bar).

0 10 20 30 40 50 60 70 80 90 100

Base Rate (in %)

Summary after Stage 0:

Stage	Known Fact(s)	Engin Prob
0	Undergrad (→ Base Rate Est)	${q://QID5/ChoiceNumericEntryValue/1}%

Stage 1: Undergraduate + FEMALE

Let us now imagine that, in addition to the fact that J Doe is a Michigan undergraduate, you also know J Doe's gender, which is female.

Should that change encourage you to change—or "shift"—your judgment about the probability that J Doe is an engineering student, away from your base rate judgment, either upward or downward? What do you think, and why?

Some would say that your answer should depend on whether you have good reason to believe that gender is "informative" about whether or not a given student is enrolled in the Engineering School. Consider the possibilities:

Case 1—Gender Uninformative: Suppose you think that the percentage of females in the Engineering College is the same as the percentage among Michigan undergraduates elsewhere in the University. This means that, in your opinion, gender is uninformative about whether a given Michigan

undergraduate majors in engineering.Thus, your judged probability that female J Doe is an engineering student should be the same as your base rate judgment: ${q://QID5/ChoiceNumericEntryValue/1}%; you shouldn't shift your judgment at all.

Case 2—Gender Slightly Negatively Informative: Suppose you believe that the percentage of females enrolled in the Engineering College is slightly lower than the percentage among Michigan undergraduates elsewhere in the University. This implies that gender is slightly informative about whether or not a student majors in engineering, and in the downward direction. Therefore, your judged probability that female J Doe is an engineering student should be slightly lower than your original base rate judgment, which was ${q://QID5/ChoiceNumericEntryValue/1}%; you should shift your judgment a little bit downward from the base rate assessment.

Just for practice, please indicate here a revised engineering probability judgment that would reflect a belief that femaleness is only a **slightly** negative indicator that J Doe student is a student in the Engineering College (Slide the bar).

0 10 20 30 40 50 60 70 80 90 100

Revised engineering probability(in %)

Case 3—Gender Highly Negatively Informative: Now imagine that you have good reason to believe that the percentage of female students in the Engineering School is much lower than the corresponding percentage among Michigan undergraduates elsewhere in the University. In that case, since J Doe is female, your probability judgment that J Doe is an engineering student should be much lower than your base rate judgment, representing a large, negative shift.

Again, for practice, record a revised engineering probability judgment that would reflect an opinion that female gender is a highly negative indicator that J Doe is an engineering student (Slide the bar).

0 10 20 30 40 50 60 70 80 90 100

0 10 20 30 40 50 60 70 80 90 100

Revised engineering probability (in %)

Case 4—Gender Slightly Positively Informative and Case 5—Gender Highly Positively Informative: It is possible for you to believe that females are more common in the Engineering College than elsewhere in the University undergraduate population. If that is the case, then gender would again be informative about whether a given undergraduate is an engineering major. The only thing that would be different from Cases 2 and 3 is the direction of your shift from the base rate when you learn that J Doe is female rather than male. Her being a female would boost your expectation that J Doe is an engineering student.

Summary of Your Records

Stage	Known Fact(s)	Engin Prob
0	Undergrad (→ Base Rate Est)	${q://QID5/ChoiceNumericEntryValue/1}%

Now, please think hard and make up your mind about whether you think that female gender is informative about enrollment in the Engineering College, how strongly informative it is, and in what direction—positively or negatively.

Then record your probability judgment that J Doe really is an engineering student, given that she is a Michigan undergraduate and is female, shifting an appropriate distance from your previous judgment, when all you knew was that she was a Michigan undergraduate (Slide the bar).

0 10 20 30 40 50 60 70 80 90 100

Updated engineering probability (in %)

Stage 2: Undergraduate + Female + PERFECT SAT MATH SCORE

Next, let's suppose that you learn a bit more about J Doe. In particular, you discover that J Doe earned a perfect score of 800 on the SAT Math test before she was admitted to Michigan. How, if at all, would that affect your probability judgment that J Doe majors in engineering? That is, how much and in what direction would that encourage you to shift your judgment away from your Stage 1 judgment, when you only knew that J Doe was a Michigan undergraduate and was also female?

Using similar logic as before, you should shift positively if you think that high scores on the SAT Math exam are more common among engineering students than among undergraduates elsewhere in the University. Further, the more **informative you think that such scores are, the** more **you should shift your judgment upward from your Stage 1 judgment. If you happen to think that high SAT Math scores are** less **common among engineering students, then you should shift in the** opposite **direction.**

Summary of Your Records

Stage	Known Fact(s)	Engin Prob
0	Undergrad (→ Base Rate Est)	${q://QID5/ChoiceNumericEntryValue/1}%
1	Undergrad + **Female**	${q://QID17/ChoiceNumericEntryValue/1}%

So please record an updated engineering probability judgment that would take into account all three things you know about J Doe to this point, that she is a Michigan undergrad, is female, and earned a perfect 800 on the SAT Math test (Slide the bar).

0 10 20 30 40 50 60 70 80 90 100

Updated engineering probability(in %)

Summary of Your Records

Stage	Known Fact(s)	Engin Prob
0	Undergrad (→ Base Rate Est)	${q://QID5/ChoiceNumericEntryValue/1}%
1	Undergrad + **Female**	${q://QID17/ChoiceNumericEntryValue/1}%
2	Undergrad + Female + **Perfect SAT-M**	${q://QID19/ChoiceNumericEntryValue/1}%

Stage 3: Undergraduate, Female, Perfect SAT Math + PERFECT ACT MATH

You continue to learn even more about J Doe. Specifically, you discover that, in addition to all you knew about her before, you find out that J Doe achieved a perfect 36 on the ACT Math test before coming to Michigan.

Please record a new engineering probability judgment that would take into account all you **now** know about J Doe:
* she is a Michigan undergrad,
* she is female
* she earned a perfect score on the SAT Math
* moreover, she also got a perfect score on the ACT Math test.

0 10 20 30 40 50 60 70 80 90 100

Updated engineering probability(in %)

When you learned that J Doe got a perfect ACT Math score in addition to her perfect SAT Math score, did that induce you to significantly increase your probability judgment that J Doe is an engineering student? That new information would, in fact, have that effect for some people. We would like to convince you that that is a mistake.

The reason is that the SAT Math and ACT Math tests measure essentially the same characteristic of a person—skill at mathematics. They are largely "redundant." Suppose that you boosted your judgment of J Doe's chances of being an engineering student twice: first, after you learned that she got a certain score on the SAT Math test and then again, after you saw that she got an equivalent score on the redundant ACT Math test. This means that you "double counted." In other words, you are over-

predicting J Doe's probability of being an engineering student, and that will reduce the accuracy of your assessments.

The moral of the story?: Imagine that, when making a judgment about a certain event, you take into account Fact A. Then later, you become aware of Fact B as well. To the degree that Fact B is redundant to Fact A, you should reduce your reliance on Fact B. At one extreme, illustrated by the SAT and ACT Math scores, where redundancy is extremely high, you can make a good case for ignoring Fact B. At the other extreme, where Facts A and B are largely "independent," you don't need to concern yourself with double counting.

Summary of Your Records

Stage	Known Fact(s)	Engin Prob
0	Undergrad (→ Base Rate Est)	${q://QID5/ChoiceNumericEntryValue/1}%
1	Undergrad + **Female**	${q://QID17/ChoiceNumericEntryValue/1}%
2	Undergrad + Female + **Perfect SAT-M**	${q://QID19/ChoiceNumericEntryValue/1}%
3	Undergrad + Female + Perfect SAT-M+ Perfect ACT-M	Previous judgment: ${q://QID22/ChoiceNumericEntryValue/1}%

It is possible that, in light of this discussion, you might wish to revise your most recent probability judgment that J Doe is an engineering student, given that she is a Michigan undergraduate, is female, earned a perfect SAT Math score, and also earned a perfect ACT Math score.

Regardless, please record here your current opinion as to the probability that J Doe majors in engineering (Slide the bar).

0 10 20 30 40 50 60 70 80 90 100

Updated engineering probability(in %)

Summary of Your Records

Stage	Known Fact(s)	Engin Prob
0	Undergrad (→ Base Rate Est)	${q://QID5/ChoiceNumericEntryValue/1}%
1	Undergrad + **Female**	${q://QID17/ChoiceNumericEntryValue/1}%
2	Undergrad + Female + **Perfect SAT-M**	${q://QID19/ChoiceNumericEntryValue/1}%
3	Undergrad + Female + Perfect SAT-M + **Perfect ACT-M**	${q://QID27/ChoiceNumericEntryValue/1}%

Stage 4: Undergraduate, Female, Perfect SAT Math, Perfect ACT Math + 5 FT, 8 IN TALL

Let us imagine that you know one final fact about J Doe: she is 5 feet, 8 inches (1.73 m) tall, which is a good bit above average for a female college student in the US.

So, the question now is, given this additional item of information, along with what you already know about her—that she is a Michigan undergraduate, female, and earned perfect SAT Math and ACT Math scores—what is your probability judgment that J Doe is an engineering student? (Slide the bar)

0 10 20 30 40 50 60 70 80 90 100

Updated engineering probability(in %)

Summary of Your Records

Stage	Known Fact(s)	Engin Prob

0	Undergrad (→ Base Rate Est)	${q://QID5/ChoiceNumericEntryValue/1}%
1	Undergrad + **Female**	${q://QID17/ChoiceNumericEntryValue/1}%
2	Undergrad + Female + **Perfect SAT-M**	${q://QID19/ChoiceNumericEntryValue/1}%
3	Undergrad + Female + Perfect SAT-M + **Perfect ACT-M**	${q://QID27/ChoiceNumericEntryValue/1}%
4	Undergrad + Female + Perfect SAT-M + Perfect ACT-M + **5 ft, 8 in (1.73 m) Tall**	previous judgment: ${q://QID30/ChoiceNumericEntryValue/1}%

Did your probability judgment change from what it was before learning that J Doe was 5 ft, 8 in tall?

Many people would say that it should not have changed. Why? The main reason, they would say, is that there is no connection between a woman's height and whether she majors in engineering. For instance, they would expect the percentage of Michigan female students who are 5 ft, 8 in or more in height to be the same whether those students are in the Engineering College or not. This means that height should not be seen as informative about whether a particular female student majors in engineering or not.

Given this discussion, you may or may not wish to change your mind about your previous judgment. At any rate, please record your final probability judgment that J Doe is an engineering student, based on all the facts you know about her (Slide the bar).

0 10 20 30 40 50 60 70 80 90 100

Updated engineering probability(in %)

Summary after Stages 0, 1, 2, 3, and 4:

Stage	Known Fact(s)	Engin Prob

0	Undergrad (→ Base Rate Est)	${q://QID5/ChoiceNumericEntryValue/1}%
1	Undergrad + **Female**	${q://QID17/ChoiceNumericEntryValue/1}%
2	Undergrad + Female + **Perfect SAT-M**	${q://QID19/ChoiceNumericEntryValue/1}%
3	Undergrad + Female + Perfect SAT-M + **Perfect ACT-M**	${q://QID27/ChoiceNumericEntryValue/1}%
4	Undergrad + Female + Perfect SAT-M + Perfect ACT-M + **5 ft, 8 in (1.73 m) Tall**	${q://QID33/ChoiceNumericEntryValue/1}%

Base/Shift Procedure Summary and Advice

For the kinds of judgment problems under consideration here, following is a summary of the base/shift procedure we ask you to employ, along with a few suggestions for how to actually apply that procedure. **To help you remember the various points during the study itself, we will provide you with a sheet of paper summarizing the details.**

Base/Shift Procedure

Your aim: Judge the probability that a given target person has a certain characteristic, C (e.g., majors in engineering).

The strategy in a nutshell:

a. Identify a population to which the "target person" T belongs (e.g., undergraduates) and for which you can estimate the overall percentage of people, BR, who have Characteristic C. BR is called the "base rate."

b. Since (initially, at least) you know nothing else about person T, report BR as your probability judgment that T has characteristic C: Judgment J_0 = BR

[0 in J_0 connotes that you know nothing about T that usefully distinguished him/her from anyone else in the population.]

c. Seek out a fact—fact F_1, e.g., gender—about person T that might be informative about whether T possesses characteristic C. If F_1 is "informative," this means that the chance that fact F_1 (e.g., femaleness) is true is different when a person possesses characteristic C (e.g., studies engineering) as opposed to when he/she does not. The larger the difference in those chances, the greater fact F_1's "informativeness."

- If you have good reason to believe that a given fact, F_1 (e.g., within-gender relative height), actually has no informativeness, you should ignore it and move on to another potentially informative fact.

- If you have good reason to think that fact F_2 (e.g., high SAT Math score) is positively informative, then you should update or "shift" your initial judgment J from the base rate BR to something higher: Judgment $J = J_2 > BR$. But if you believe that fact F is negatively informative, then you should do the opposite, reporting that Judgment $J = J_2 < BR$.

- The more informative you think that fact F is, the greater should be your shift from the base rate, BR.

SUGGESTION: When possible, double check your memory, assumptions, and reasoning when drawing conclusions about how informative a given fact really is.

ANOTHER SUGGESTION: Be conservative in your shifts; avoid "going out on a limb," since there is evidence that this can harm accuracy.

d. Avoid double counting via redundancy. Thus, suppose that you learn about fact F_4 (e.g., high ACT Math score) after you have already learned about F_3 (e.g., high SAT Math score) that is highly correlated with it. If you shifted your judgment J by X percentage points upon learning F_3, you should shift your judgment informed F_4 by much less than X.

End of Base/Shift Tutorial Illustration

#1: Starting out, the only thing you know about each of the following respondents is that he/she is an adult U.S. resident. Given that fact, a reasonable starting assumption is that

that person's probability of favoring a raise in the minimum wage is the same as the percentage of adult U.S. residents who favor that action, right? So, please think hard about what that percentage might be and then record that estimate as your Stage 0, Base Rate, Probability Judgment of Favoring an Increase (Slide the bar).

0 10 20 30 40 50 60 70 80 90 100

Base rate (in %)

#2: Now, you are ready to examine the cues **sequentially** and to shift your initial probability judgment (base rate) in response to the revealed cues until you arrive at your final judgment. **Note that all cues are revealed in a random order.**

baseshift example trial

Summary of Your Records

Stage	Known Fact(s)	Probability Favors Increase
0	U.S. resident (→ Base Rate Est)	${q://QID129/ChoiceNumericEntryValue/1}%

Respondent 21 New info!

Clinton Presidency Prediction: "Somewhat Likely"

Given ***Residency: U.S.,*** *and* ***Clinton Presidency Prediction: "Somewhat Likely",*** please record an updated probability judgment that Respondent 21 favors minimum wage increase (Slide the bar):

0 10 20 30 40 50 60 70 80 90 100

Updated Probability (in %)

Summary of Your Records

Stage	Known Fact(s)	Probability Favors Increase
0	U.S. resident (→ Base Rate Est)	${q://QID129/ChoiceNumericEntryValue/1}%
1	U.S. resident + Clinton seen somewhat likely to win presidency	${q://QID40/ChoiceNumericEntryValue/1}%

Respondent 21 New info!

Highest Education Level: "Some College"

Given ***Residency: U.S., Clinton Presidency Prediction: "Somewhat Likely",*** *and* ***Highest Education Level: "Some College",*** please record an updated probability judgment that Respondent 21 favors minimum wage increase (Slide the bar):

0 10 20 30 40 50 60 70 80 90 100

Updated Probability (in %)

Summary of Your Records

Stage	Known Fact(s)	Probability Favors Increase
0	U.S. resident (→ Base Rate Est)	${q://QID129/ChoiceNumericEntryValue/1}%
1	U.S. resident + Clinton seen somewhat likely to win presidency”	${q://QID40/ChoiceNumericEntryValue/1}%
2	U.S. resident + Clinton seen somewhat likely to win presidency + Some college	${q://QID42/ChoiceNumericEntryValue/1}%

Respondent 21 New info!

Race Relations Perception: "Fairly Good"

Given ***Residency: U.S., Clinton Presidency Prediction: "Somewhat Likely", Highest Education Level: "Some College",*** *and* ***Race Relations Perception: "Fairly Good",*** please record an updated probability judgment that Respondent 21 favors minimum wage increase (Slide the bar):

0 10 20 30 40 50 60 70 80 90 100

Updated Probability (in %)

Summary of Your Records

Stage	Known Fact(s)	Probability Favors Increase
0	U.S. resident (→ Base Rate Est)	${q://QID129/ChoiceNumericEntryValue/1}%
1	U.S. resident + Clinton seen somewhat likely to win presidency	${q://QID40/ChoiceNumericEntryValue/1}%
2	U.S. resident + Clinton seen somewhat likely to win presidency + Some college	${q://QID42/ChoiceNumericEntryValue/1}%
3	U.S. resident + Clinton seen somewhat likely to win presidency + Some college + Race relations seen as fairly good	${q://QID44/ChoiceNumericEntryValue/1}%

Respondent 21 New info!

Clinton Economy Expectation: "Fairly Good"

Given ***Residency: U.S., Clinton Presidency Prediction: "Somewhat Likely", Highest Education Level: "Some College", Race Relations Perception: "Fairly Good",*** *and* ***Clinton Economy Expectation: "Fairly Good",*** please record an updated probability judgment that Respondent 21 favors minimum wage increase (Slide the bar):

0 10 20 30 40 50 60 70 80 90 100

Final Probability (in %)

Your updated probability judgment has been recorded. Here is a summary of records. This is the end for Respondent 21.

Stage	Known Fact(s)	Probability Favors Increase
0	U.S. resident (→ Base Rate Est)	${q://QID129/ChoiceNumericEntryValue/1}%
1	U.S. resident + Clinton seen somewhat likely to win presidency	${q://QID40/ChoiceNumericEntryValue/1}%
2	U.S. resident + Clinton seen somewhat likely to win presidency + Some college	${q://QID42/ChoiceNumericEntryValue/1}%
3	U.S. resident + Clinton seen somewhat likely to win presidency + Some college + Race relations seen as fairly good	${q://QID44/ChoiceNumericEntryValue/1}%
4	U.S. resident + Clinton seen somewhat likely to win presidency + Some college + Race relations seen as fairly good + Clinton Economy Expectation: “Fairly good”	${q://QID46/ChoiceNumericEntryValue/1}% (final)

matching tutorial

How You Should Arrive at Your Judgments

When faced with the kind of judgment task required here, people are known to use a variety of approaches. However, there is one particular approach we would like to have you apply here, one that is sometimes called “matching.” Following is a tutorial trial from a different context that explains and illustrates how you should carry out the “matching” strategy.

Tutorial Trial: An Engineering Student?

Tutorial task: We ask you to judge the probability that a designated University of Michigan undergraduate, “J Doe,” is majoring in engineering, given that you know one of several specific facts about that person. Simply follow the stage-by-stage instructions.

NOTE: As suggested before, your judgment should heed the following conventions:

– 0% means that you are absolutely sure that J Doe is NOT an engineering major
– 50% means that you think that the J Doe is just as likely to be an engineering major as to not be an engineering major
– 100% means that you are absolutely sure that the respondent DOES major in engineering
– Increasing %’s imply your increasing certainty that J Doe is an engineering major

Stage 0: Engineering student prototype

First, we would like you take a few moments to bring to mind a person—real or otherwise—who, in your view, is a prototype of an undergraduate who you think would be an engineering major.

Now, in the window provided, please write a short paragraph describing the kind of prototypical person you just brought to mind:

Stage 1: Undergraduate + FEMALE

Let us now imagine that, in addition to the fact that J Doe is a Michigan undergraduate, you also know J Doe's gender, which is ***female***.

Now, in your head, you should assess the degree to which the target person's responses suggest that that person matches or fits the prototype you described for an engineering undergraduate, and record it below.

1=Matches Not at All 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20=Matches Perfectly

Summary of Your Records

Stage	Known Fact(s)	Prototype Matching Rating
1	Undergrad + **Female**	${q://QID54/ChoiceGroup/SelectedChoices}

Stage 2: Undergraduate + Female + PERFECT SAT MATH SCORE

Next, let's suppose that you learn a bit more about J Doe. In particular, you discover that J Doe earned a perfect score of 800 on the SAT Math test before she was admitted to Michigan. How, if at all, would that affect your similarity judgment that J Doe matches the prototype of an engineering undergraduate?

So please record an updated prototype matching assessment below.

1=Matches Not at All 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20=Matches Perfectly

Summary of Your Records

Stage	Known Fact(s)	Prototype Matching Rating
1	Undergrad + **Female**	${q://QID54/ChoiceGroup/SelectedChoices}
2	Undergrad + Female + **Perfect SAT-M**	${q://QID57/ChoiceGroup/SelectedChoices}

Stage 3: Undergraduate, Female, Perfect SAT Math + PERFECT ACT MATH

You continue to learn even more about J Doe. Specifically, you discover that, in addition to all you knew about her before, you find out that J Doe achieved a perfect 36 on the ACT Math test before coming to Michigan.

So please record an updated prototype matching assessment below.

1=Matches Not at All 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20=Matches Perfectly

Summary of Your Records

Stage	Known Fact(s)	Prototype Matching Rating
1	Undergrad + **Female**	${q://QID54/ChoiceGroup/SelectedChoices}
2	Undergrad + Female + **Perfect SAT-M**	${q://QID57/ChoiceGroup/SelectedChoices}
3	Undergrad + Female + Perfect SAT-M + **Perfect ACT-M**	${q://QID60/ChoiceGroup/SelectedChoices}

Stage 4: Undergraduate, Female, Perfect SAT Math, Perfect ACT Math + 5 FT, 8 IN TALL

Let us imagine that you know one final fact about J Doe: she is 5 feet, 8 inches (1.73 m) tall, which is a good bit above average for a female college student in the US.

So, the question now is, given this additional item of information, along with what you already know about her—that she is a Michigan undergraduate, female, and earned perfect SAT Math and ACT Math scores—what is assessment of the degree to which J Doe matches the prototype of an undergraduate who majors in engineering?

1=Matches Not at All	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20=Matches Perfectly
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Summary of Your Records

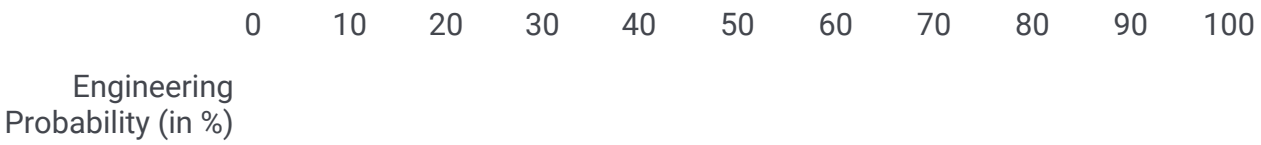
Stage	Known Fact(s)	Prototype Matching Rating
1	Undergrad + **Female**	${q://QID54/ChoiceGroup/SelectedChoices}
2	Undergrad + Female + **Perfect SAT-M**	${q://QID57/ChoiceGroup/SelectedChoices}
3	Undergrad + Female + Perfect SAT-M + **Perfect ACT-M**	${q://QID60/ChoiceGroup/SelectedChoices}
4	Undergrad + Female + Perfect SAT-M + Perfect ACT-M + **5 ft, 8 in (1.73 m) Tall**	${q://QID63/ChoiceGroup/SelectedChoices} (final)

Stage 5: Probability Judgment based on Final Prototype Matching Assessment

Finally, you should formulate and record your 0% - 100% probability judgment that J. Doe is an engineering undergraduate, based on your prototype matching rating ${q://QID63/ChoiceGroup/SelectedChoices}.

The more strongly you concluded that J. Doe matches the prototype you described (higher rating), the higher probability you should report. On the other hand, to the degree that you felt that the J. Doe did not match the prototype, you should record a lower probability.

So, given your prototype matching rating ${q://QID63/ChoiceGroup/SelectedChoices}, what is your probability judgment that J Doe is an engineering student? (Slide the bar)



Matching Procedure Summary and Advice

For the kinds of judgment problems under consideration here, following is a summary of the base/shift procedure we ask you to employ, along with a few suggestions for how to actually apply that procedure. **To help you remember the various points during the study itself, we will provide you with a sheet of paper summarizing the details.**

Matching Procedure

Your aim: Judge the probability that a given target person has a certain characteristic, C (e.g., majors in engineering).

The strategy in a nutshell:

a. Take a few moments to bring to mind a person—real or otherwise—who, in your view, is a prototype of a person with a certain characteristic (e.g., chose to be an engineering major).

b. When more information is revealed, you should assess the degree to which the target person's responses suggest that that person matches or fits the prototype you described for an individual who typically displays that characteristic If you feel that an item of information increases the similarity between the target person and the prototype, you should shift upward the prototype matching assessment. On the other hand, to the degree that you feel

that a piece of information decreases the similarity, you should shift downward the assessment.

c. Probability Judgment: Finally, you should formulate and record your 0% - 100% probability judgment based on your final prototype matching assessment. The more strongly you concluded that the target person matches the prototype you described, the higher probability you should report. On the other hand, to the degree that you felt that the target did not match the prototype, you should record a lower probability.

End of Matching Tutorial Illustration

#1: First, we would like you to take a few moments to bring to mind a person—real or otherwise—who, in your view, is a prototype of the kind of U.S. resident who favors an increase in federal minimum wage.

#2: Now, you are ready to examine the cues **sequentially** and to shift your initial prototype matching assessments in response to the revealed cues until you arrive at your final judgment. **Note that all cues are revealed in a random order.** (Please note that these cues may or may NOT be related to whether or not a given individual favors raising the federal minimum wage.)

matching example trial

Respondent 21 New info!

Clinton Presidency Prediction: "Somewhat Likely"

Given ***Residency: U.S.,*** *and* ***Clinton Presidency Prediction: "Somewhat Likely",*** please record an updated prototype matching assessment that Respondent 21 favors minimum wage

increase:

1= Matches Not At All	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20= Matches Perfectly
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Summary of Your Records

Stage	Known Fact(s)	Prototype Matching Rating
1	U.S. resident + Clinton seen somewhat likely to win presidency	${q://QID72/ChoiceGroup/SelectedChoices}

Respondent 21 New info!

Highest Education Level: "Some College"

Given ***Residency: U.S., Clinton Presidency Prediction: "Somewhat Likely", and Highest Education Level: "Some College",*** please record an updated prototype matching assessment that Respondent 21 favors minimum wage increase:

1= Matches Not At All	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20= Matches Perfectly
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Summary of Your Records

Stage	Known Fact(s)	Prototype Matching Rating
1	U.S. resident + Clinton seen	${q://QID72/ChoiceGroup/SelectedChoices}

	somewhat likely to win presidency	
2	U.S. resident + Clinton seen somewhat likely to win presidency + Some college	${q://QID74/ChoiceGroup/SelectedChoices}

Respondent 21 New info!

Race Relations Perception: "Fairly Good"

Given ***Residency: U.S., Clinton Presidency Prediction: "Somewhat Likely", Highest Education Level: "Some College", and Race Relations Perception: "Fairly Good",*** please record an updated prototype matching assessment that Respondent 21 favors minimum wage increase:

1= Matches Not At All ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ 11 ○ 12 ○ 13 ○ 14 ○ 15 ○ 16 ○ 17 ○ 18 ○ 19 ○ 20= Matches Perfectly ○

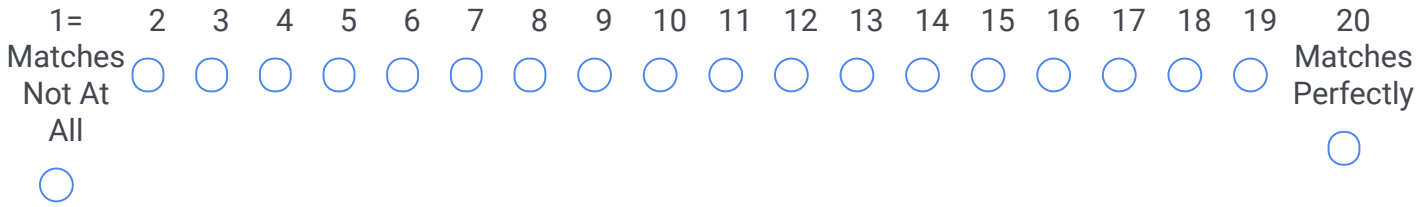
Summary of Your Records

Stage	Known Fact(s)	Prototype Matching Rating
1	U.S. resident + Clinton seen somewhat likely to win presidency	${q://QID72/ChoiceGroup/SelectedChoices}
2	U.S. resident + Clinton seen somewhat likely to win presidency + Some college	${q://QID74/ChoiceGroup/SelectedChoices}
3	U.S. resident + Clinton seen somewhat likely to win presidency + Some college + Race relations seen as fairly good	${q://QID76/ChoiceGroup/SelectedChoices}

Respondent 21 New info!

Clinton Economy Expectation: "Fairly Good"

Given ***Residency: U.S., Clinton Presidency Prediction: "Somewhat Likely", Highest Education Level: "Some College", Race Relations Perception: "Fairly Good", and Clinton Economy Expectation: "Fairly Good",*** please record an updated prototype matching assessment that Respondent 21 favors minimum wage increase:



Your updated prototype matching assessment has been recorded. Here is a summary of your records.

Stage	Known Fact(s)	Prototype Matching Rating
1	U.S. resident + Clinton seen somewhat likely to win presidency	${q://QID72/ChoiceGroup/SelectedChoices}
2	U.S. resident + Clinton seen somewhat likely to win presidency + Some college	${q://QID74/ChoiceGroup/SelectedChoices}
3	U.S. resident + Clinton seen somewhat likely to win presidency + Some college + Race relations seen as fairly good	${q://QID76/ChoiceGroup/SelectedChoices}
4	U.S. resident + Clinton seen somewhat likely to win presidency	${q://QID78/ChoiceGroup/SelectedChoices}

	+ Some college + Race relations seen as fairly good + Clinton Economy Expectation: "Fairly good"	(final)

So, given your prototype matching rating ${q://QID78/ChoiceGroup/SelectedChoices}, what is your probability judgment that Respondent 21 favors an increase in minimum wage? (Slide the bar)

	0	10	20	30	40	50	60	70	80	90	100
Probability Favors Increase (in %)											

control instruction

How You Should Arrive at Your Judgments

When faced with the kind of judgment task required here, people are known to use a variety of approaches. You should feel free to use **whatever** method you feel is appropriate and helpful in arriving at an accurate probability judgment of whether a given person would "*favor increasing the federal minimum wage.*" Keep in mind, of course, that you cannot consult any other person or information source, and that these information items may or may NOT be related to whether or not a give individual favors raising the federal minimum wage.

If you have any questions before proceeding, please quietly raise your hand and the experimenter will come to your assistance.

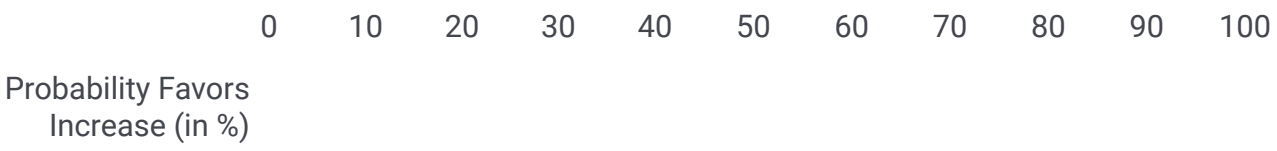
- ◯ Yes, I understand the instructions.
- ◯ No, I don't understand the instructions(please raise your hand and ask the experimenter).

control example trial

Respondent 21

• Responses
– Clinton Presidency Prediction: “Somewhat Likely”
– Clinton Economy Expectation: “Fairly Good”
– Highest Education Level: “Some College”
– Race Relations Perception: “Fairly Good”

Probabilistic judgment that this respondent favors increasing the federal minimum wage (Slide the bar):



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