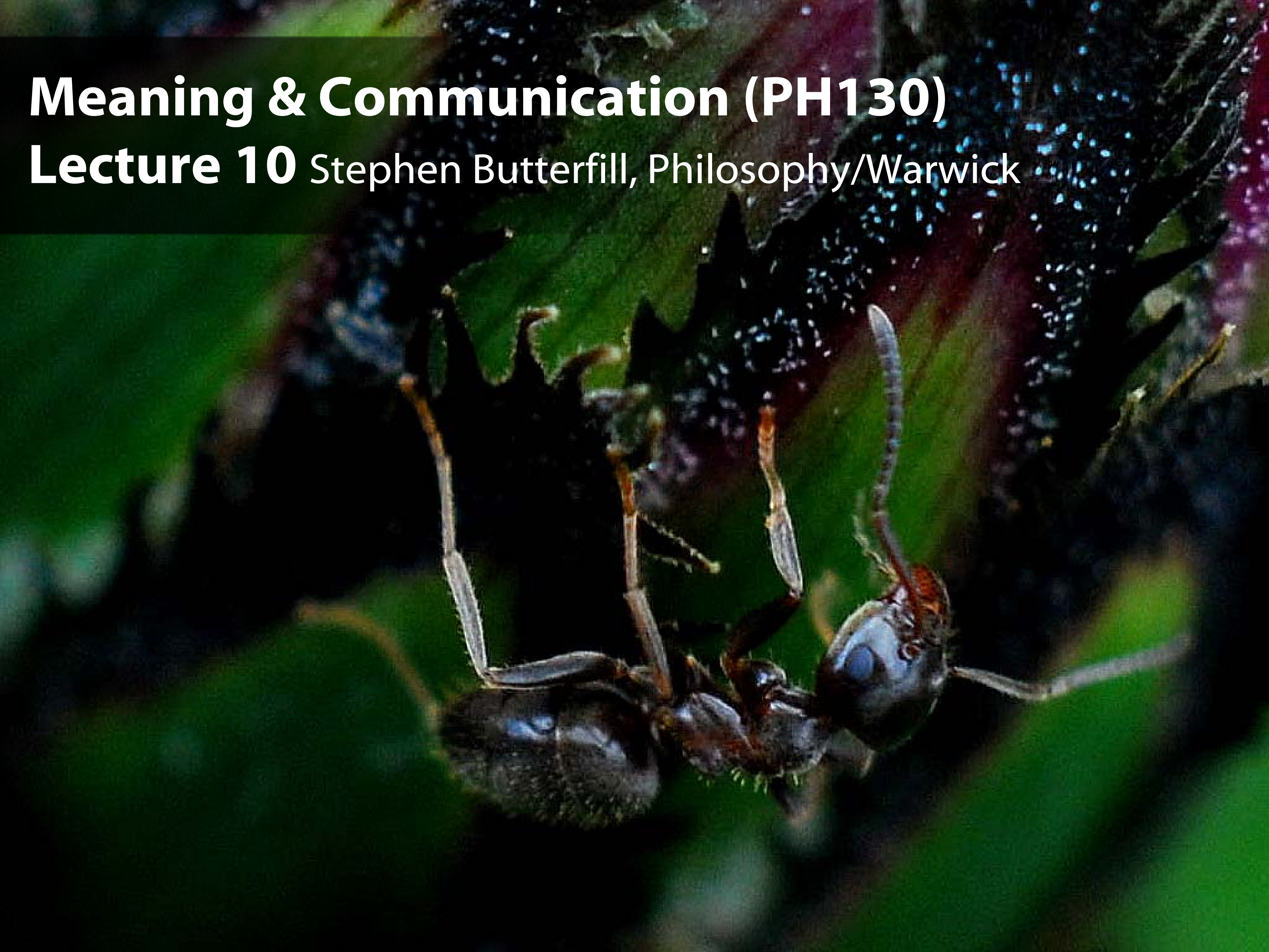
Meaning & Communication (PH130)

Lecture 10 Stephen Butterfill, Philosophy/Warwick



Argument 4

No head injury is too trivial to ignore

Therefore:

Patients with minor head injuries should not be examined.

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Argument 4*

Students who attend 75% or more of seminars pass the exam.

Hussain never failed to miss a seminar.

Therefore:

Hussain will pass the exam.

Indicative conditionals are truth functional

Q1. Does ‘if A, B’ mean the same as ‘not-A or B’?

Q2. Are sentences of the form ‘if A, B’ capable of truth?

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“the term ‘true’ has no clear ordinary sense as applied to conditionals”

(Adams 1965: 169)

conditionals are not “part of fact stating discourse.”

(Edgington 1995:280)

Indicatives vs. counterfactuals

If Syrian agents didn't assasinate Rafik Hariri, someone else did.	Indicative, true
If Syrian agents hadn't assasinated Rafik Hariri, someone else would have.	Counterfactual, probably false

The ‘Paradoxes’ of Material Implication

Why ‘if A, B’ has to be logically equivalent to ‘not A or B’

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Gordon Brown is the P.M

Either Gordon Brown is the P.M. or Ken Livingstone is the P.M.

If Gordon Brown is not the P.M., Ken Livingstone is.

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1. $\neg A$
2. $\neg A$ or B
3. if A, B

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∨Intro

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“the term 'true' has no clear ordinary sense as applied to conditionals, particularly to those whose antecedents prove to be false”

“This is to say that conditional statements with false antecedents […] there are no clear criteria for the applications of those terms [‘true’ and ‘false’] in such cases.”

“This is, of course, an assertion about the ordinary usage of the terms 'true' and 'false', and it can be verified, if at all, only by examining that usage.

“We shall … leave it to the reader to verify by observation of how people dispute about the correctness of conditional statements whose antecedents prove false, that precise criteria are lacking.”

(Adams 1965:169)

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Therefore:

John will pass history.

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Therefore:

Patients with minor head injuries should not be examined.

TABLE I

Frequency with which each pragmatic sentence is paraphrased correctly and incorrectly

Sentence No.	No. 1	No. 2	No. 3	No. 4	Total
Correct	16	16	11	8	51
Incorrect	0	0	5	8	13

No. 1 No missile is too small to be banned.
No. 2 No government is too secure to be overthrown.
No. 3 No dictatorship is too benevolent to be condemned.
No. 4 No weather forecast is too plausible to be mistrusted.

TABLE II

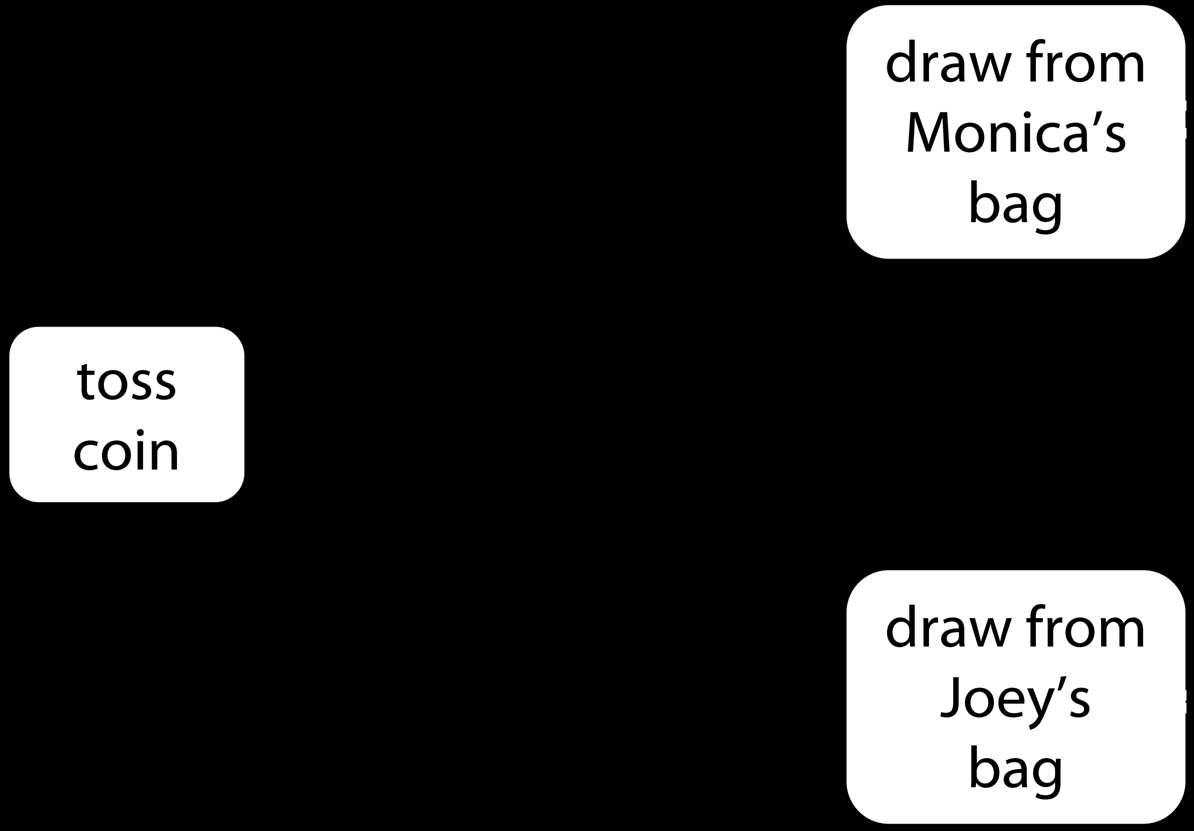
Frequency with which each non-pragmatic sentence is paraphrased correctly and incorrectly

Sentence No.	No. 5	No. 6	No. 7	No. 8	Total
Correct	3	4	9	11	27
Incorrect	13	12	7	5	37

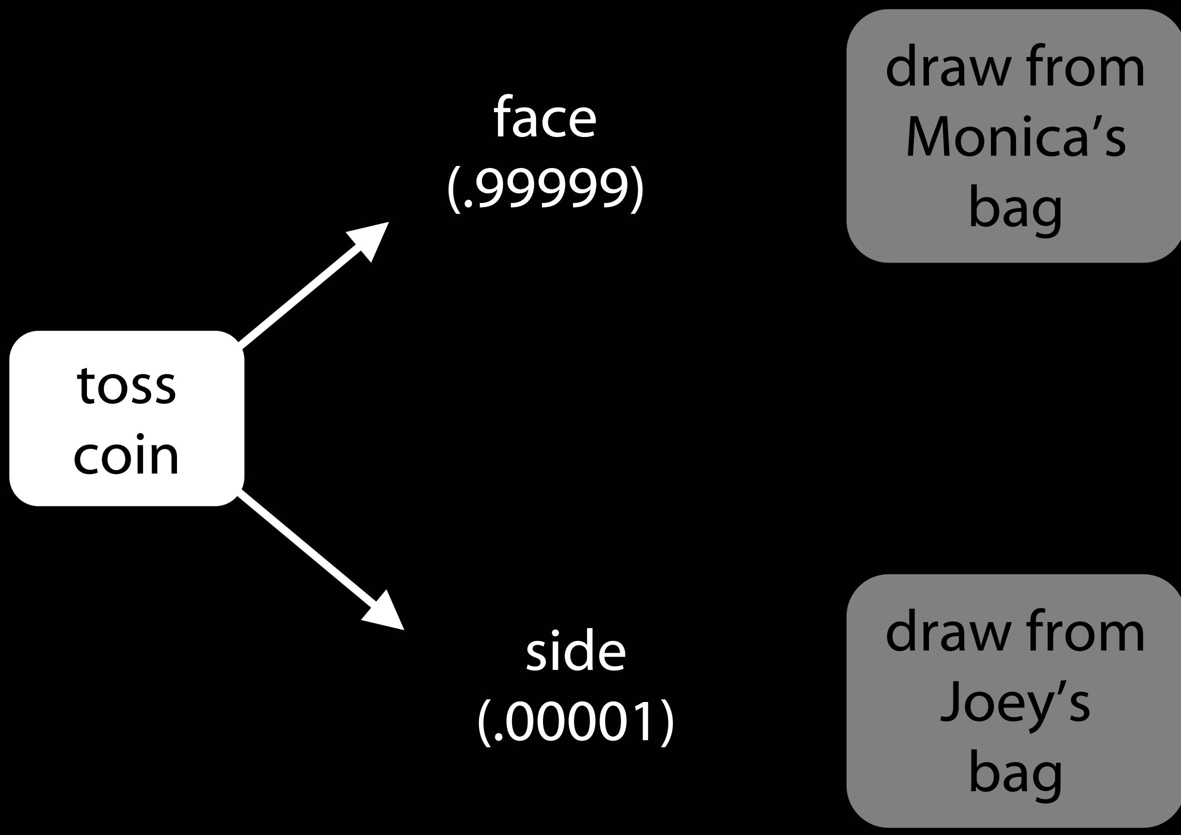
No. 5 No error is too gross to be overlooked.
No. 6 No message is too urgent to be ignored.
No. 7 No film is too good to be missed.
No. 8 No book is too interesting to be put down.

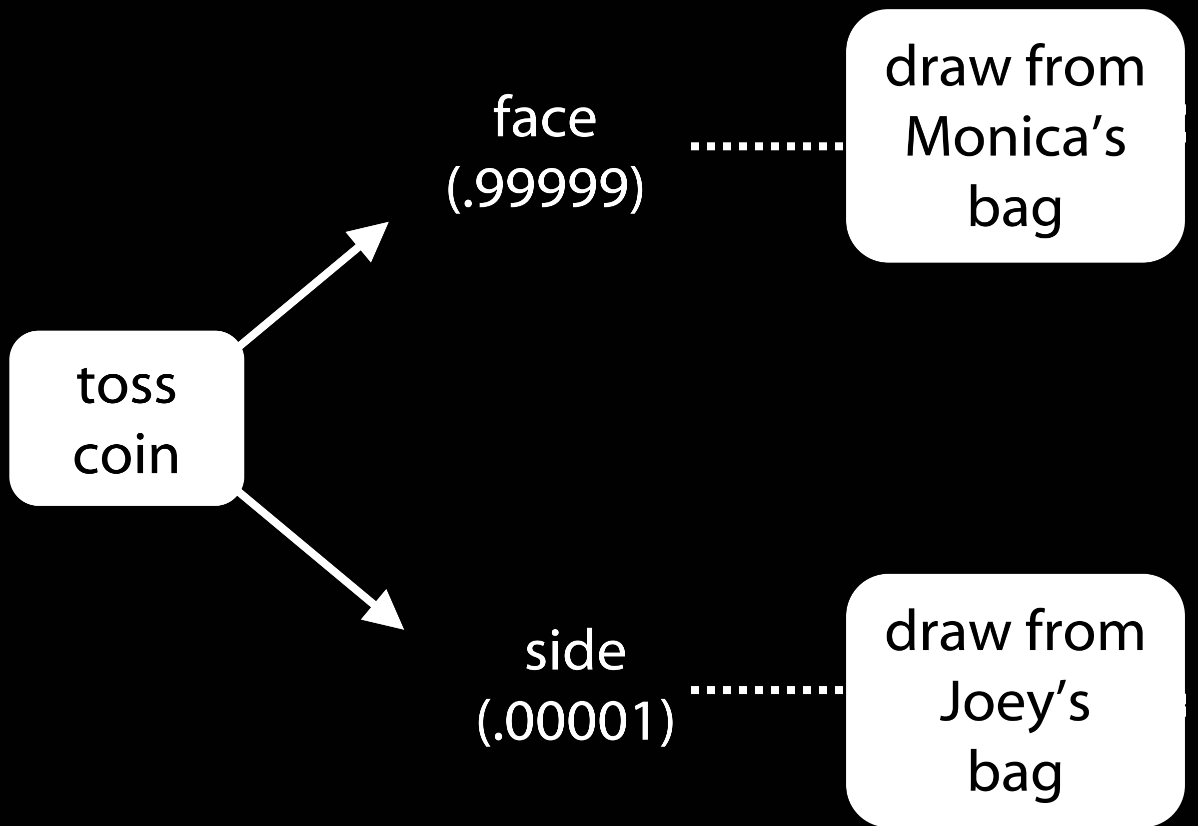
Wason and Reich (1979)

The Real Argument



toss coin
draw from Monica's bag
draw from Joey's bag


toss
coin
face
(.99999)
side
(.00001)
draw from
Monica’s
bag
draw from
Joey’s
bag


toss
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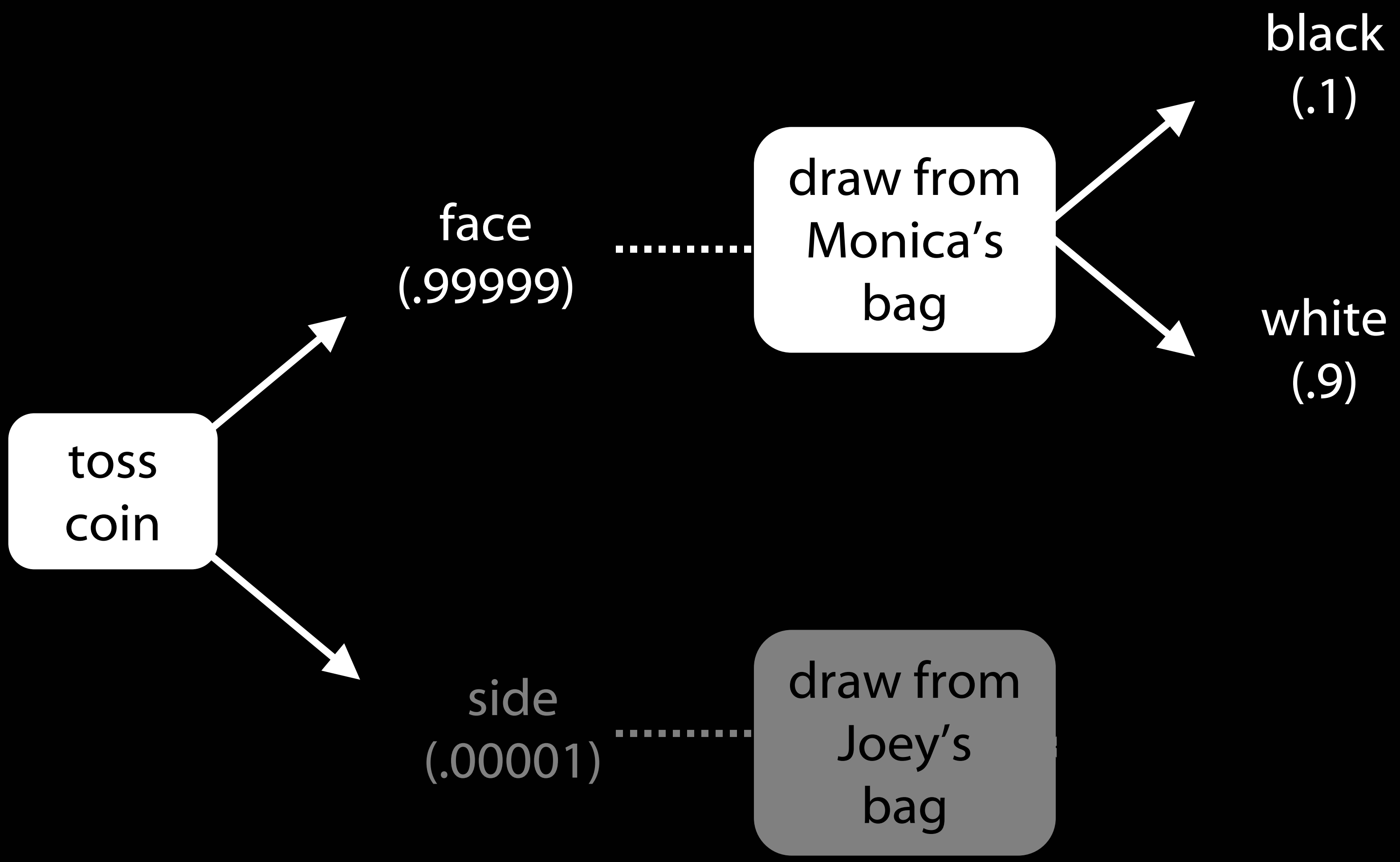
toss
coin
face
(.99999)
draw from
Monica's
bag
black
(.1)
white
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side
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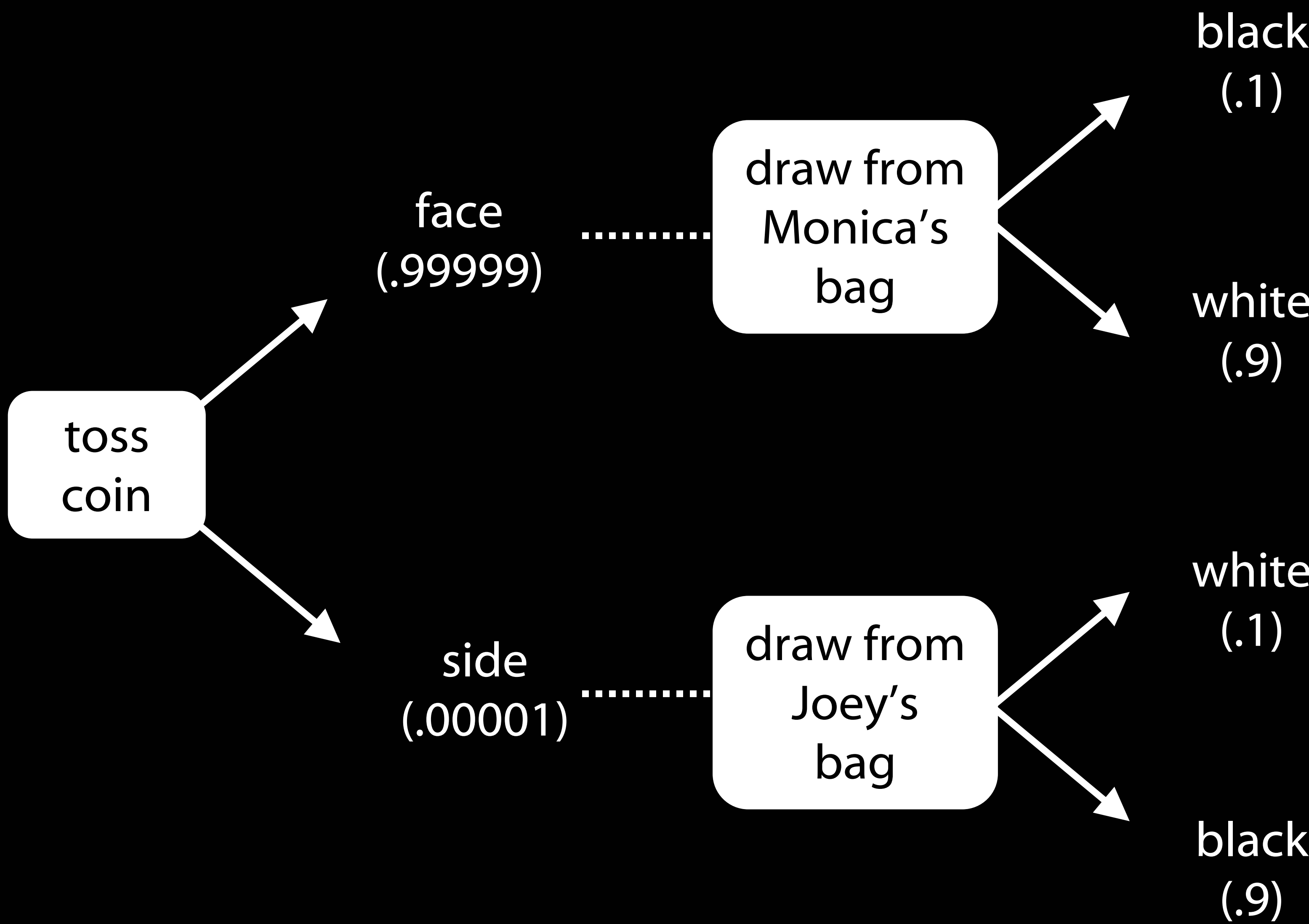
Joey's
bag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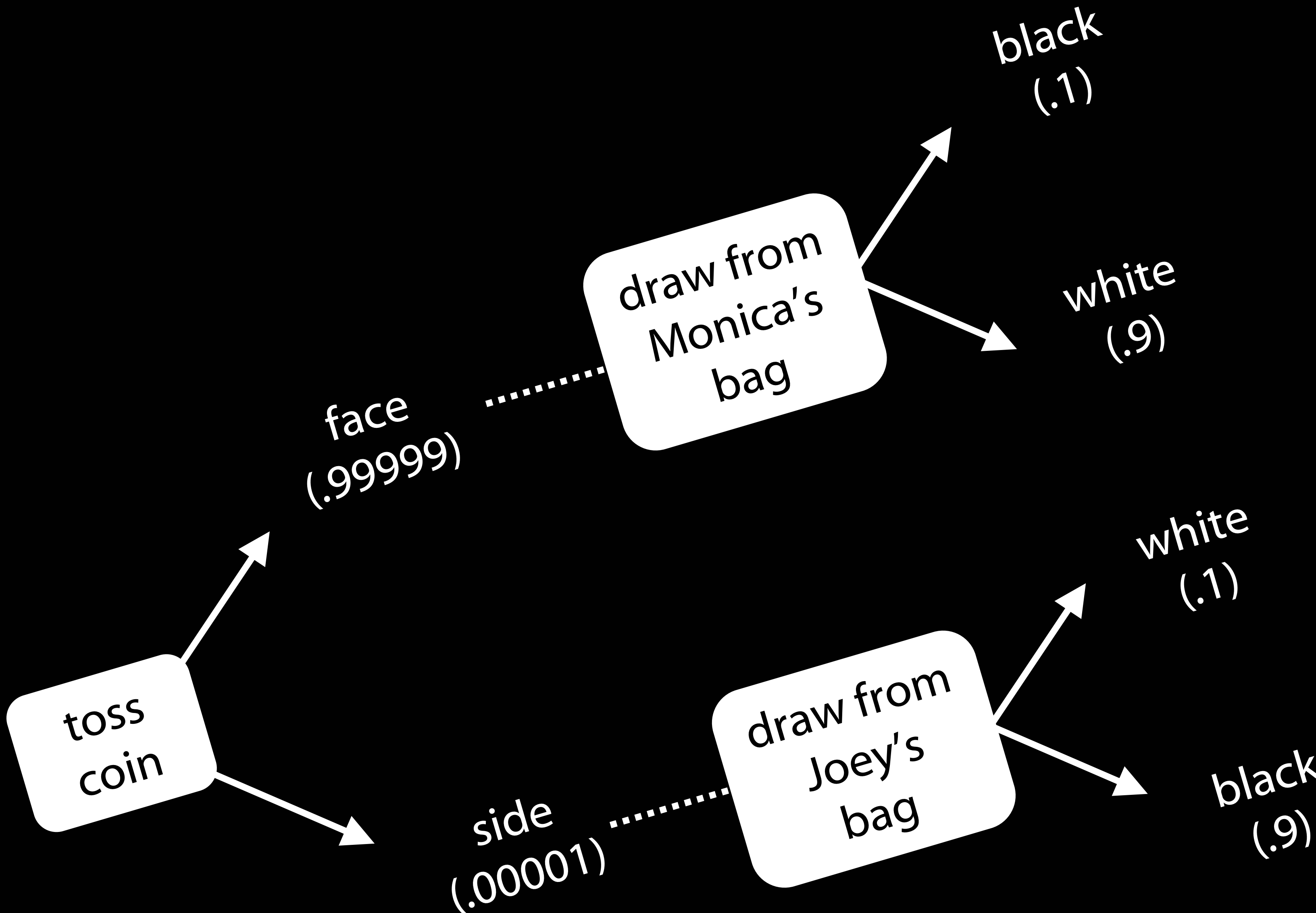
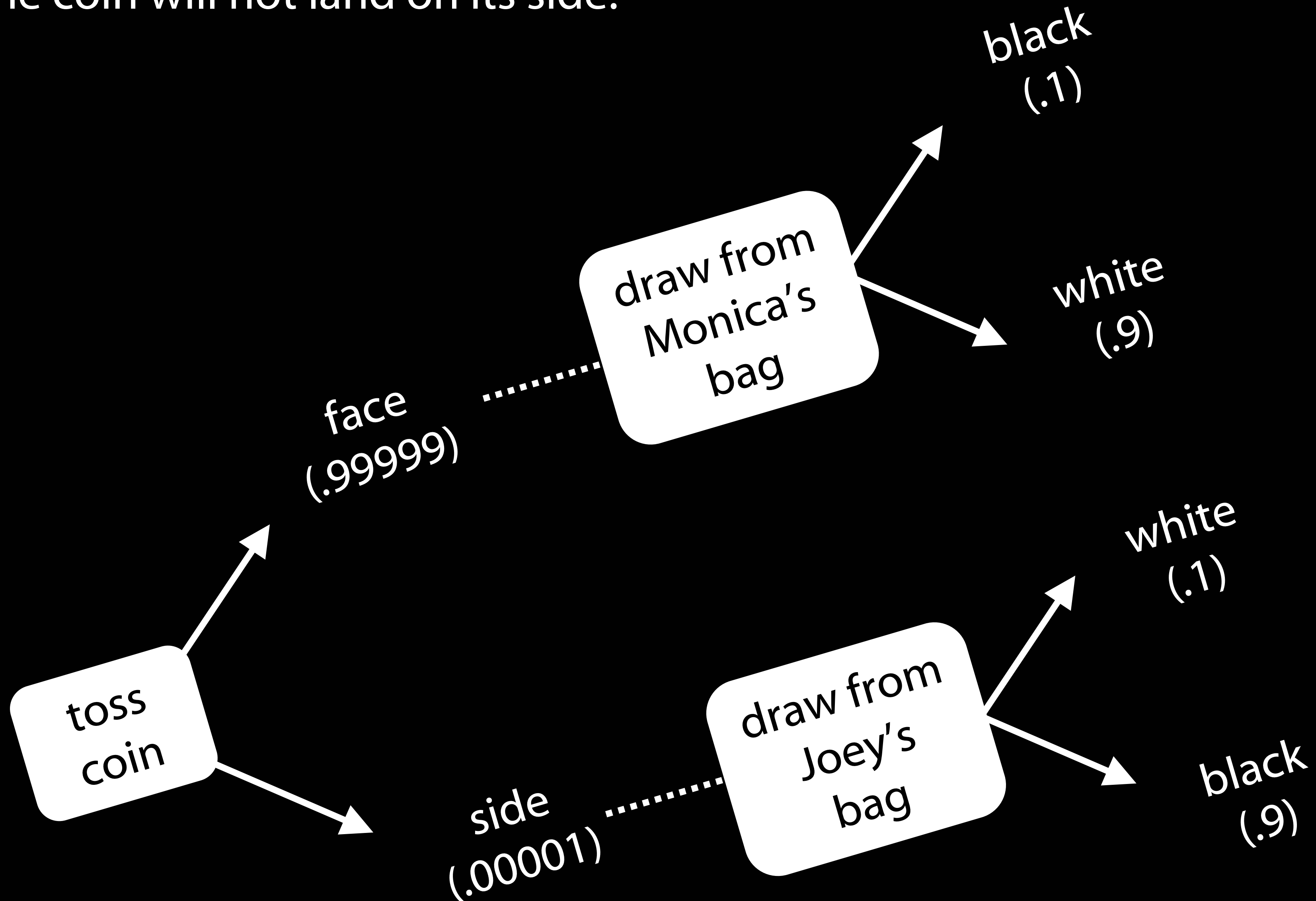
(.9)

a. Supposing the coin lands on its side, the ball will be white.



a. Supposing the coin lands on its side, the ball will be white.

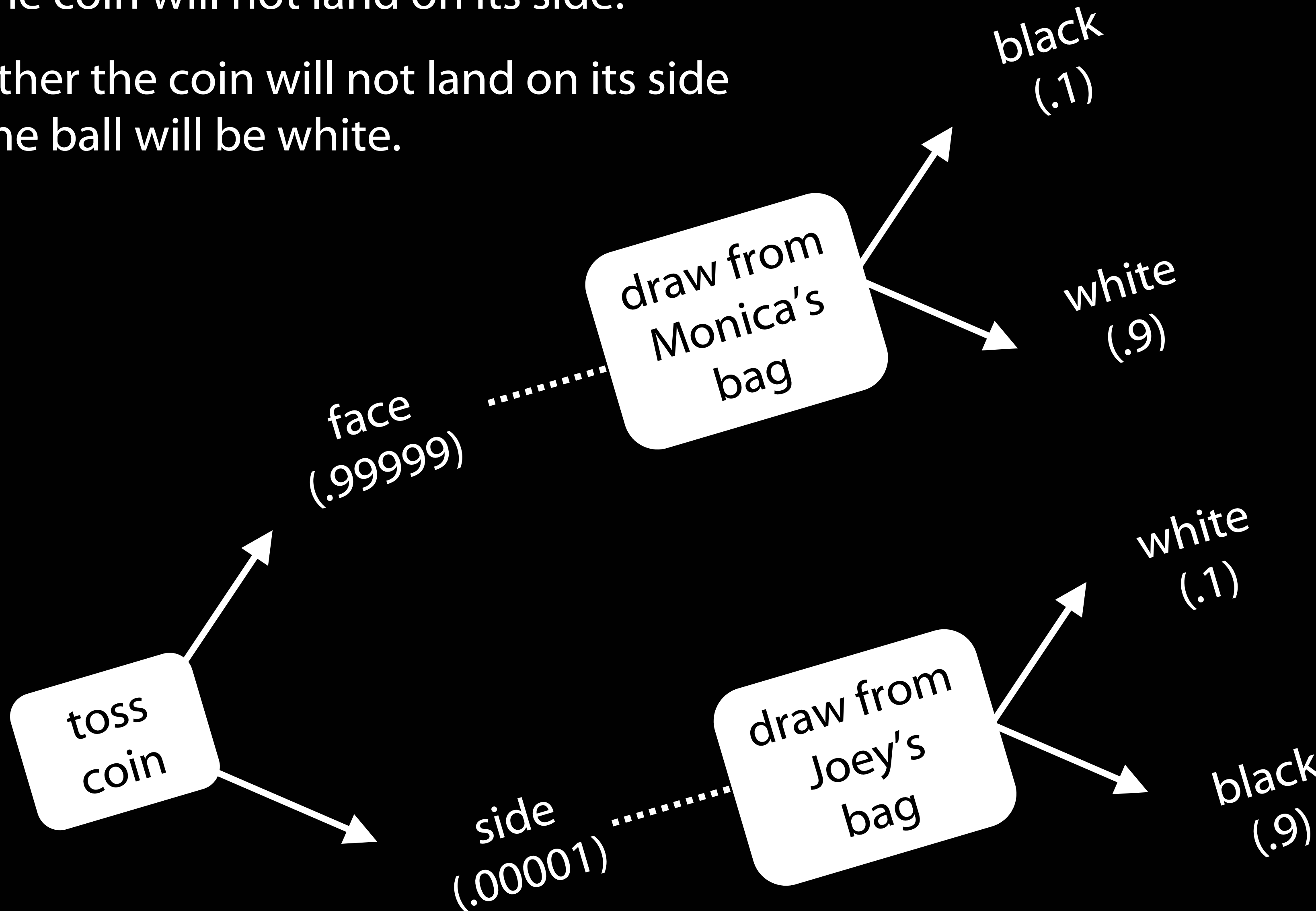
b. The coin will not land on its side.



a. Supposing the coin lands on its side, the ball will be white.

b. The coin will not land on its side.

c. Either the coin will not land on its side or the ball will be white.

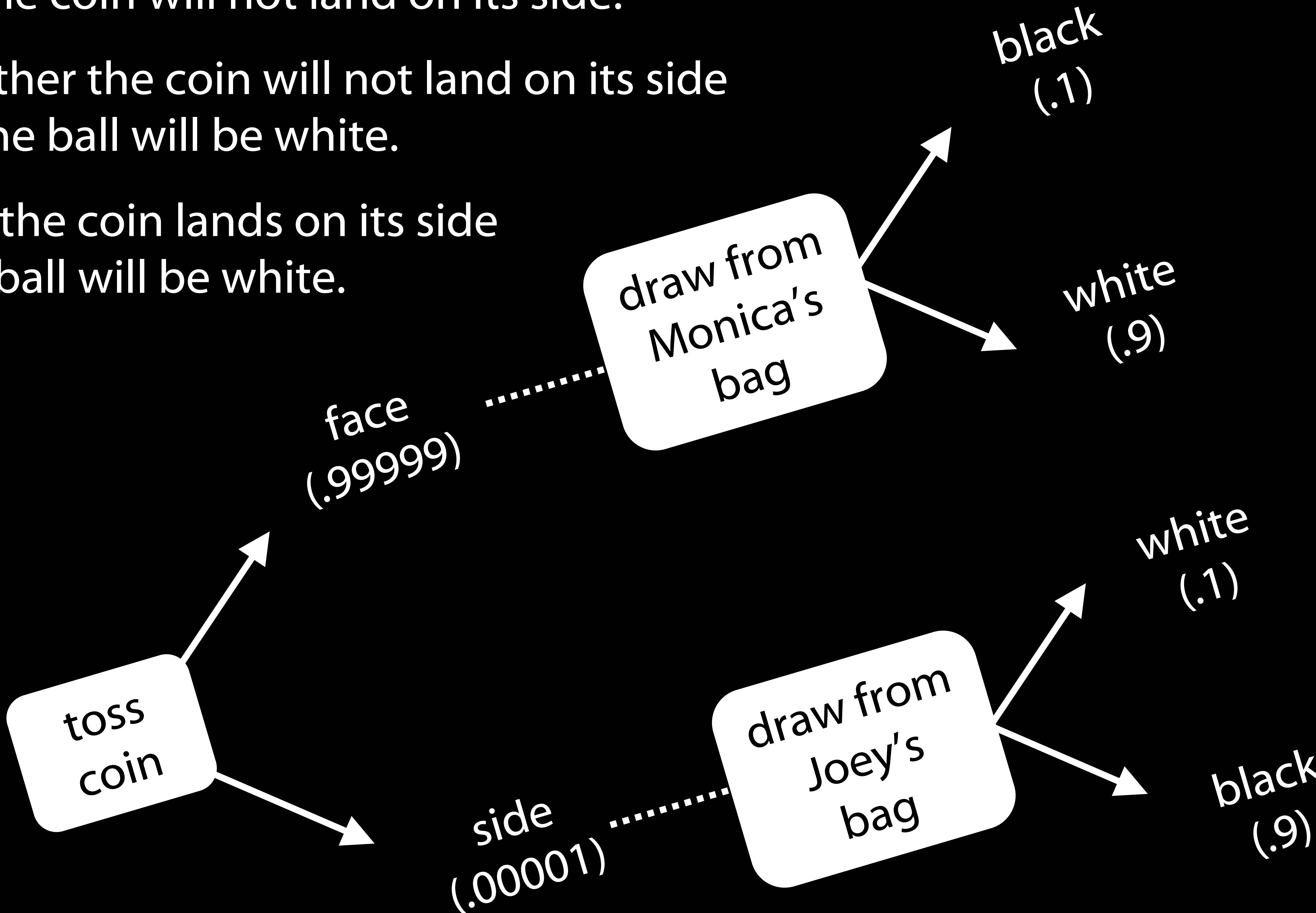


a. Supposing the coin lands on its side, the ball will be white.

b. The coin will not land on its side.

c. Either the coin will not land on its side or the ball will be white.

d. If the coin lands on its side the ball will be white.



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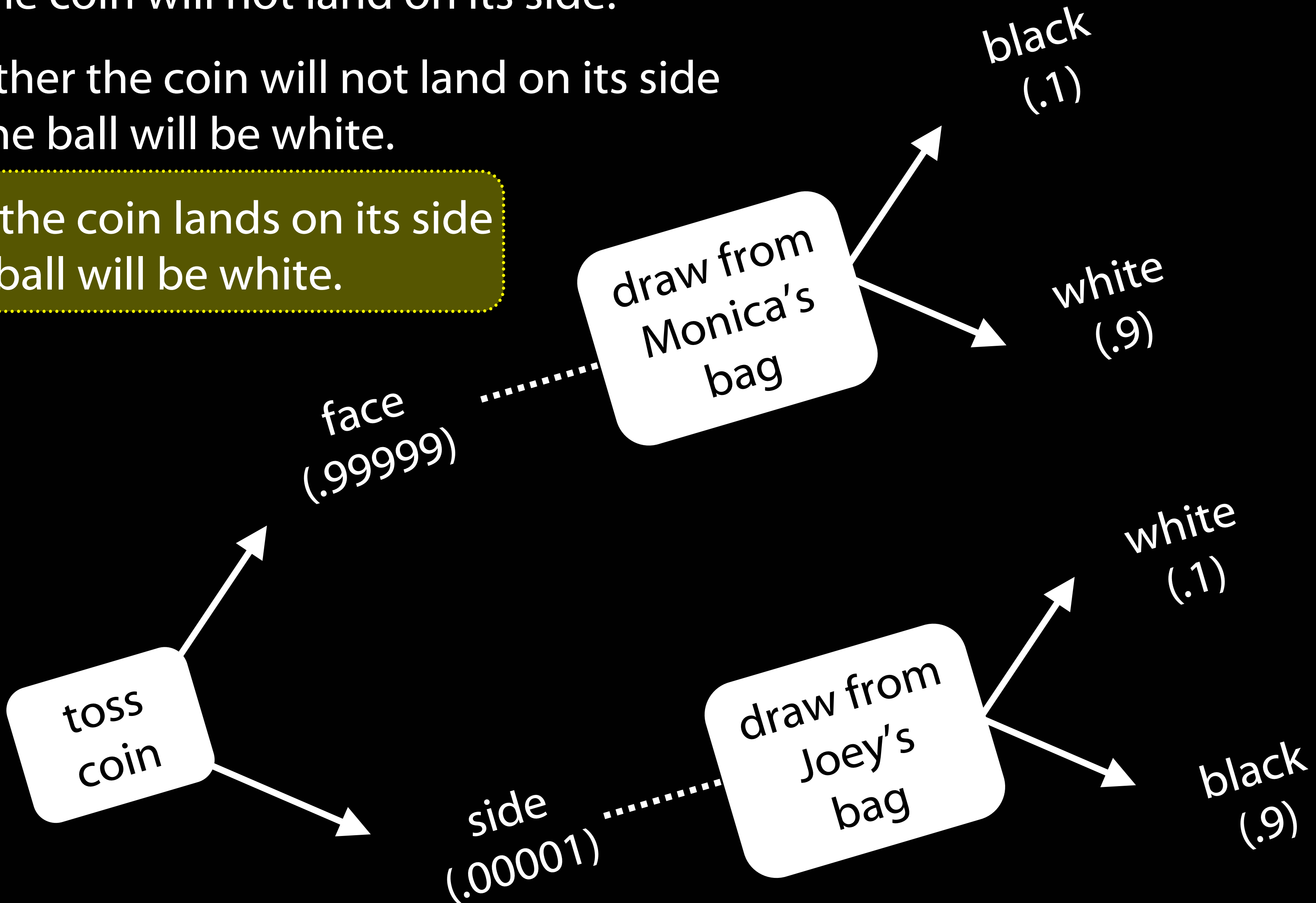

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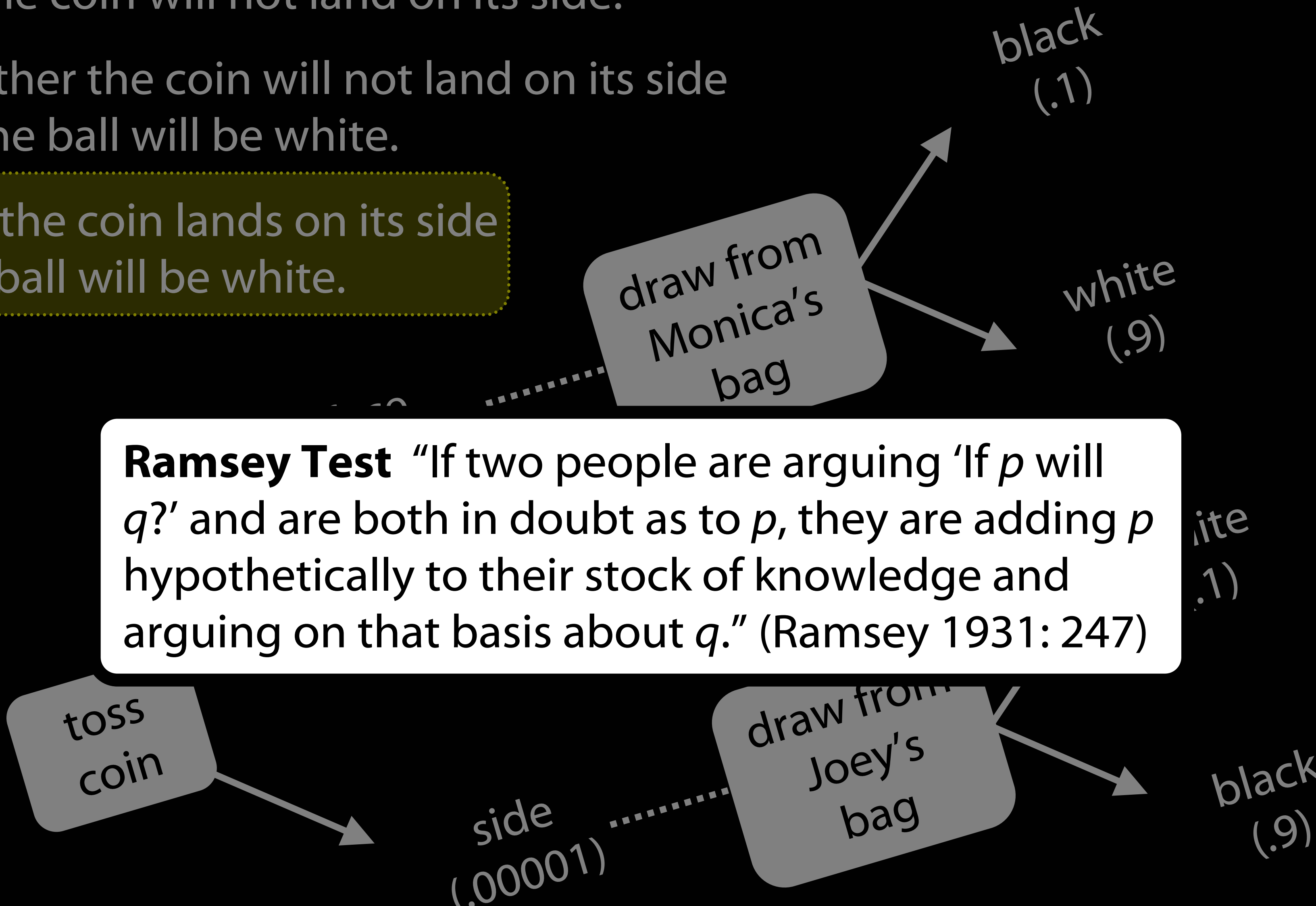


Ramsey Test "If two people are arguing 'If *p* will *q*?' and are both in doubt as to *p*, they are adding *p* hypothetically to their stock of knowledge and arguing on that basis about *q*." (Ramsey 1931: 247)

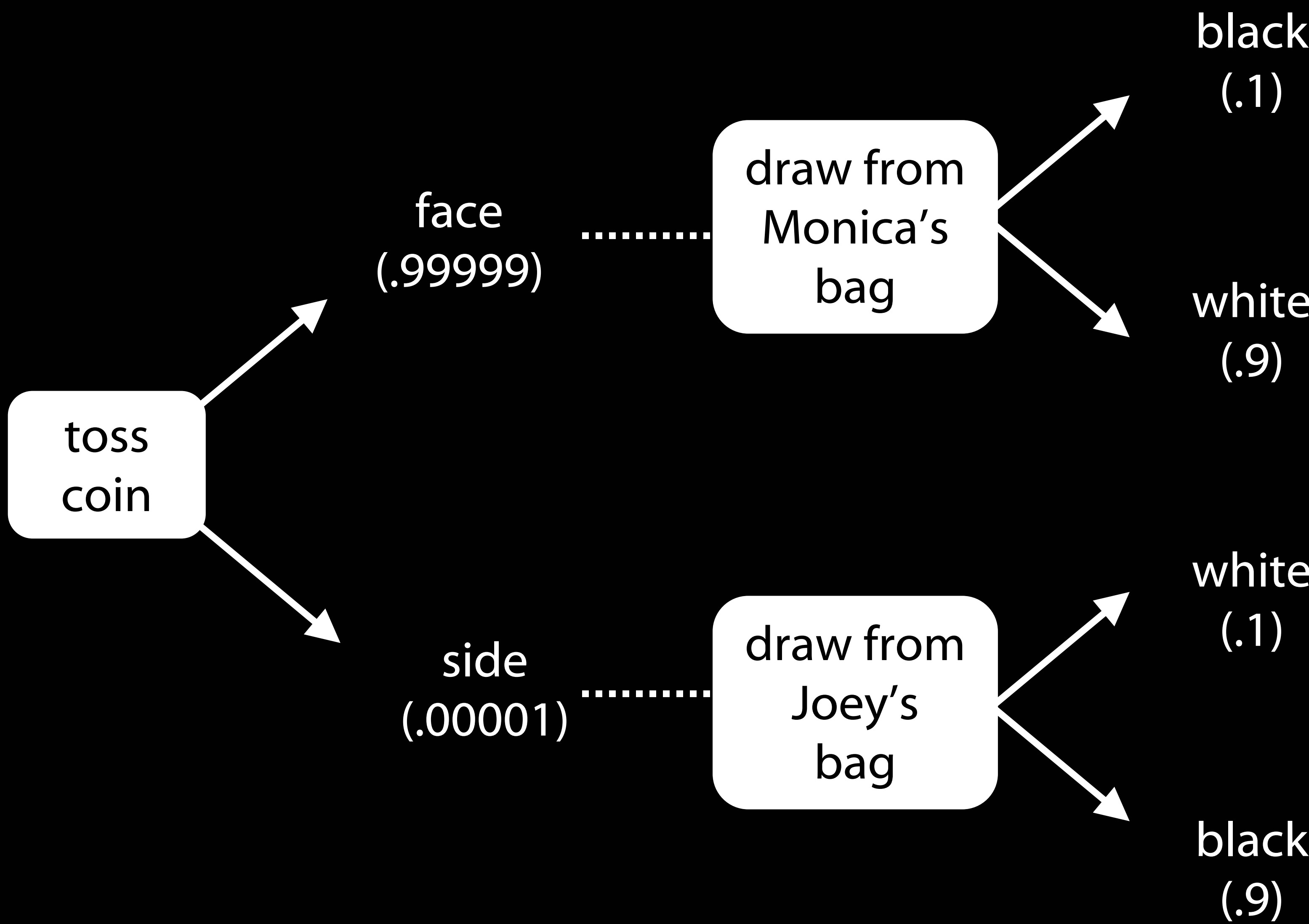
Conditionals and Conditional Probabilities

Q1. Does ‘if A, B’ mean the same as not-A or B?

Q2. Are sentences of the form ‘if A, B’ capable of truth?

$P(\text{white ball drawn} \mid \text{coin lands on its side}) = .1$

P(white ball drawn | coin lands on its side) = .1



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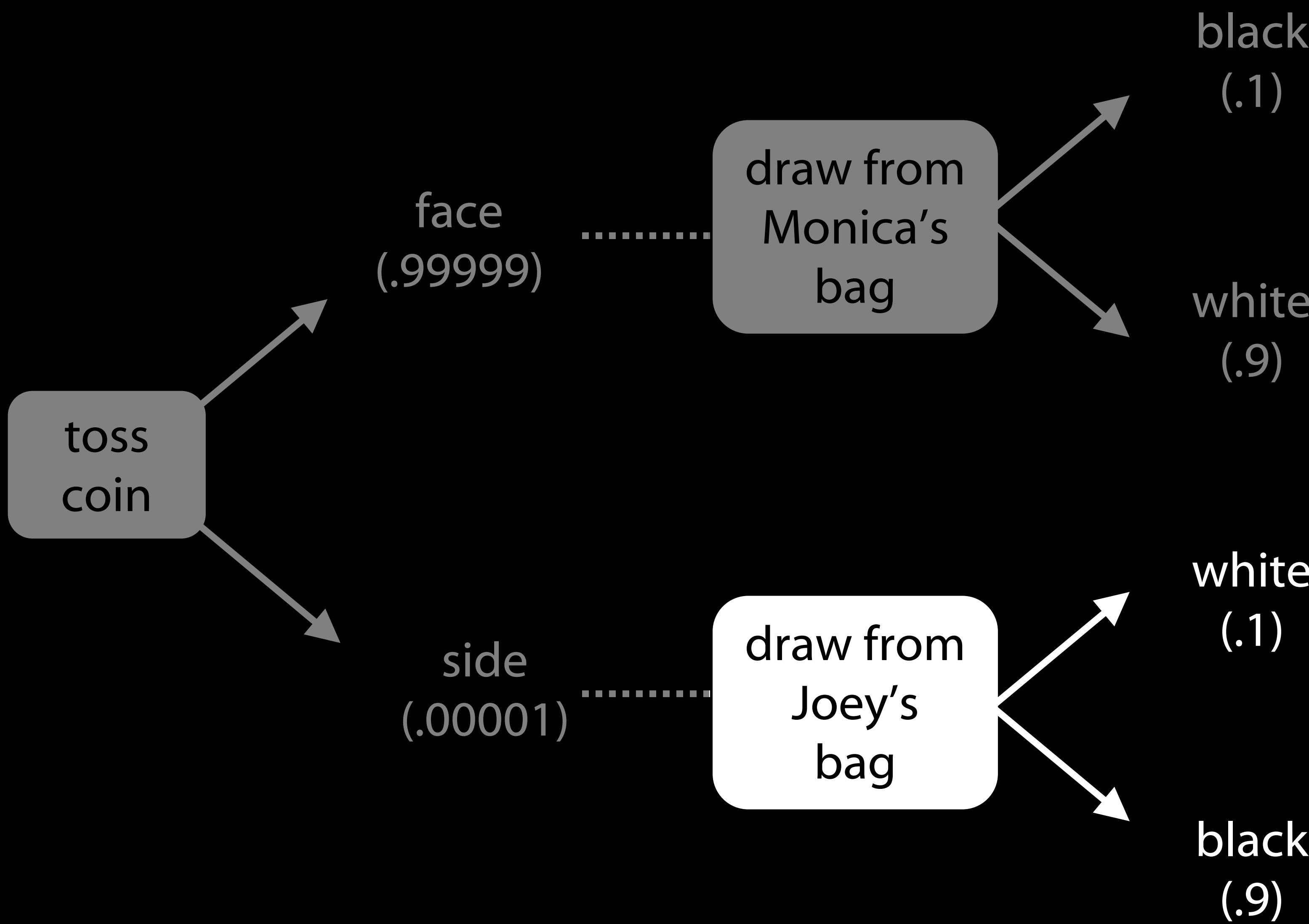

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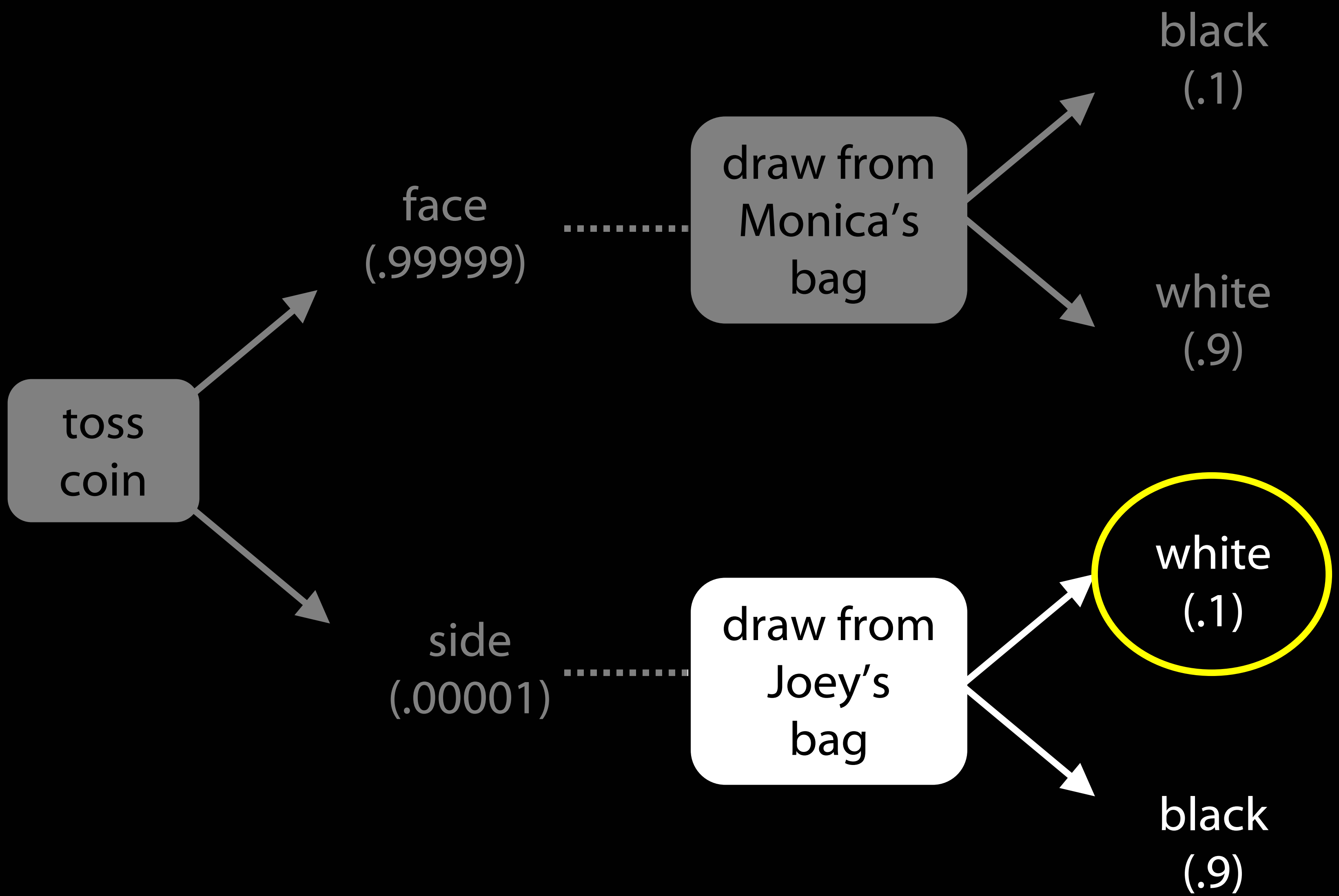
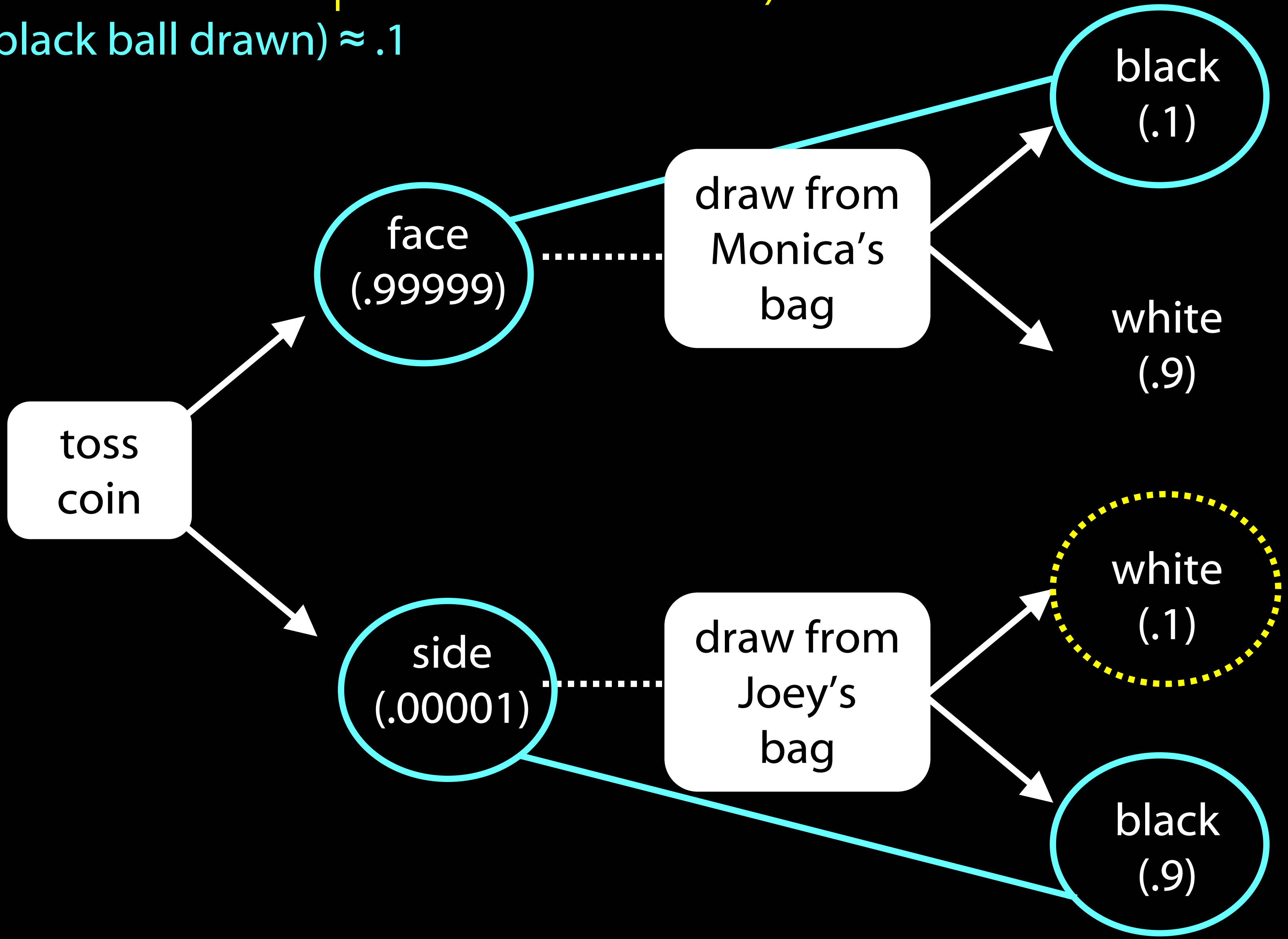


P(white ball drawn | coin lands on its side) = .1

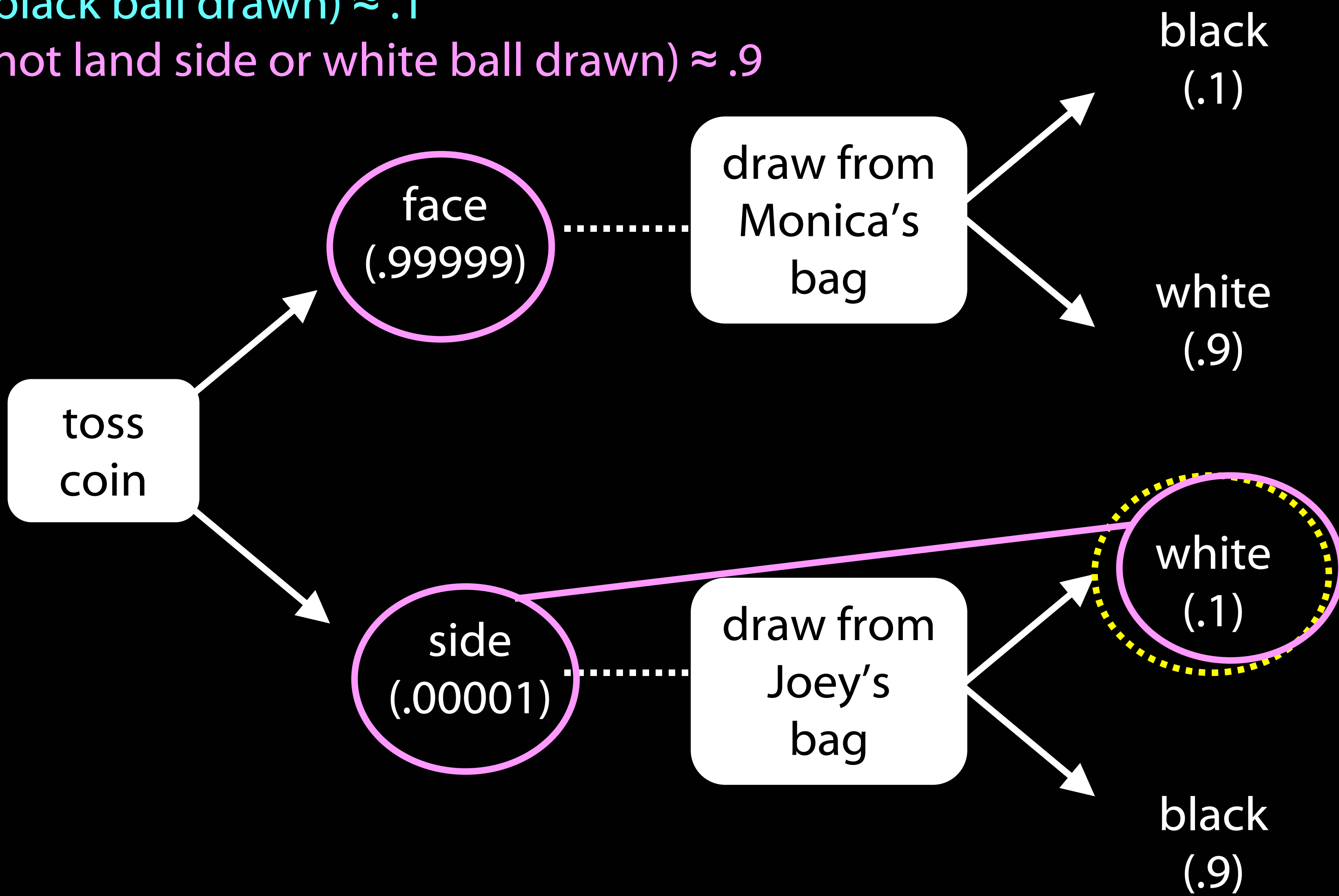
P(black ball drawn) ≈ .1



P(white ball drawn | coin lands on its side) = .1

P(black ball drawn) ≈ .1

P(not land side or white ball drawn) ≈ .9



Why conditionals lack truth conditions …

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(1) ‘The Thesis’: It is reasonable to accept ‘If A, B’ to the degree that P(B|A)

Why conditionals lack truth conditions …

(1) ‘The Thesis’: It is reasonable to accept ‘If A, B’ to the degree that $P(B|A)$

Therefore:

(2) $P(\text{If } A, B) = P(B|A)$

Why conditionals lack truth conditions …

(1) ‘The Thesis’: It is reasonable to accept ‘If A, B’ to the degree that $P(B|A)$

Therefore:

(2) $P(\text{If } A, B) = P(B|A)$

But:

(3) There is no connective ‘*’ such that, for all propositions A and B and all probability distributions P,

(i) $A*B$ has truth conditions; and

(ii) $P(A*B)=P(B|A)$.

Why conditionals lack truth conditions …

(1) ‘The Thesis’: It is reasonable to accept ‘If A, B’ to the degree that $P(B|A)$

From (1) we infer that:

(2) $P(\text{If } A, B) = P(B|A)$

But:

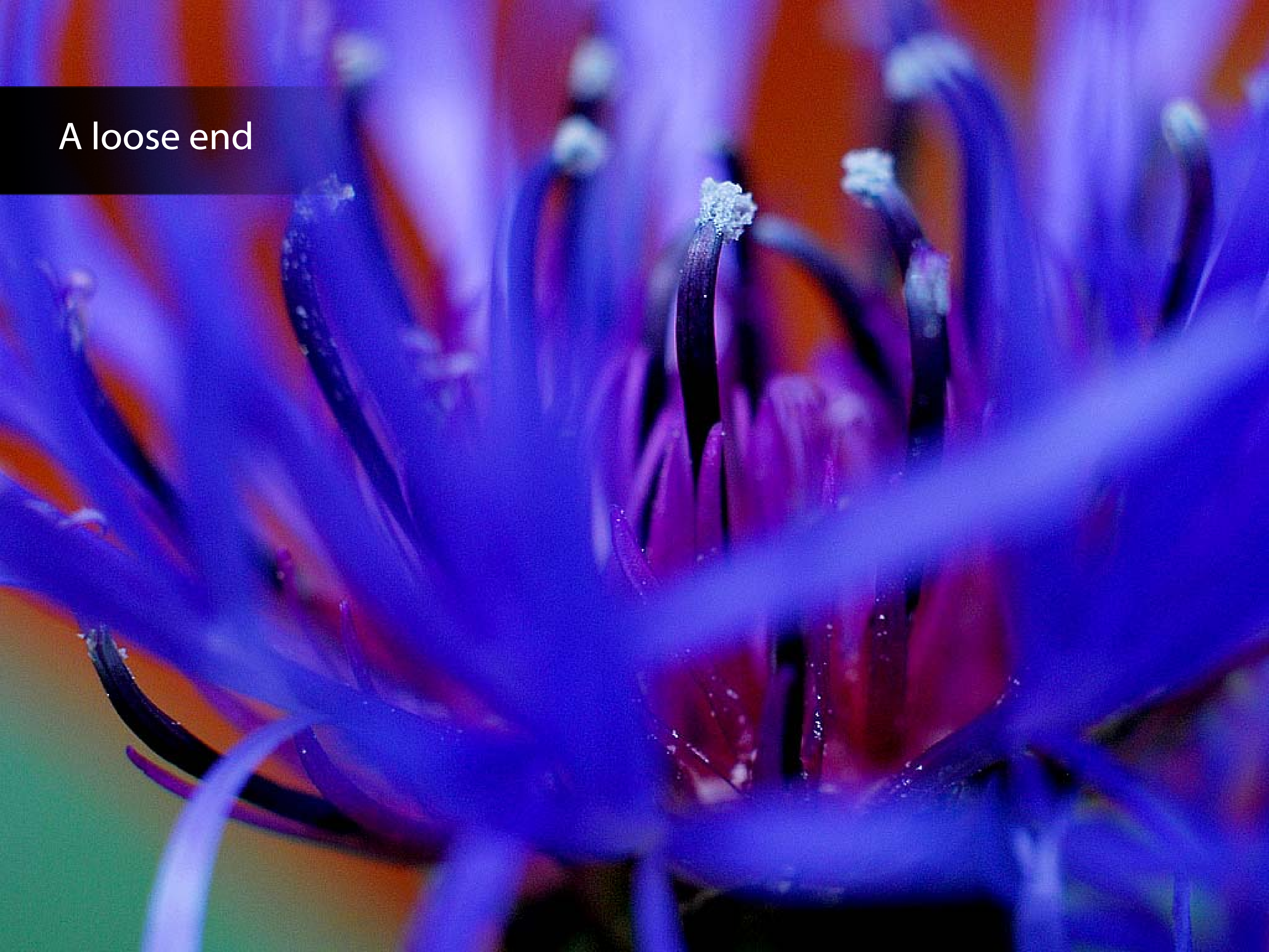
(3) There is no connective ‘*’ such that, for all propositions A and B and all probability distributions P,

(i) A*B has truth conditions; and

(ii) $P(A*B)=P(B|A)$.

Therefore:

(4) ‘If A, B’ does not have truth conditions


A loose end

Why ‘if A, B’ has to be logically equivalent to ‘not A or B’

(1) If A, B entails $\neg(A \wedge \neg B)$

(2) A or B entails If $\neg A$, B

“If you don't care for your scalp, you get rabies”

“Either you care for your scalp or you’ll get rabies.”

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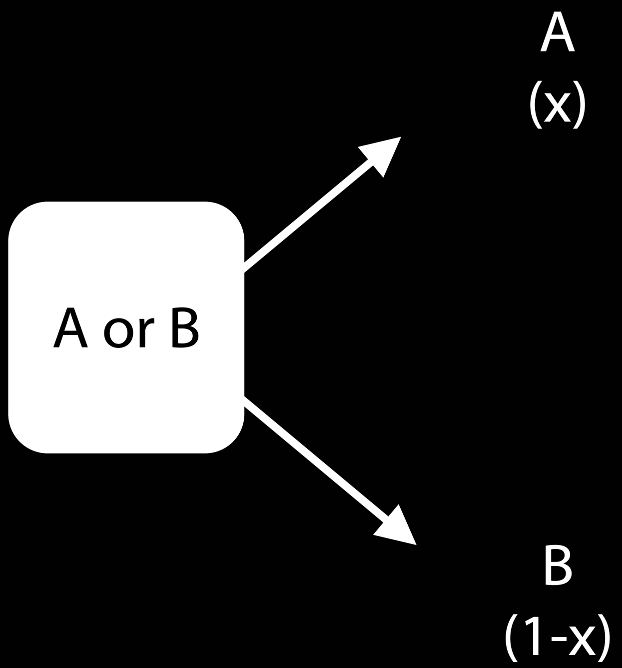

If we are certain that A or B, then $P(B \mid \neg A) = 1$

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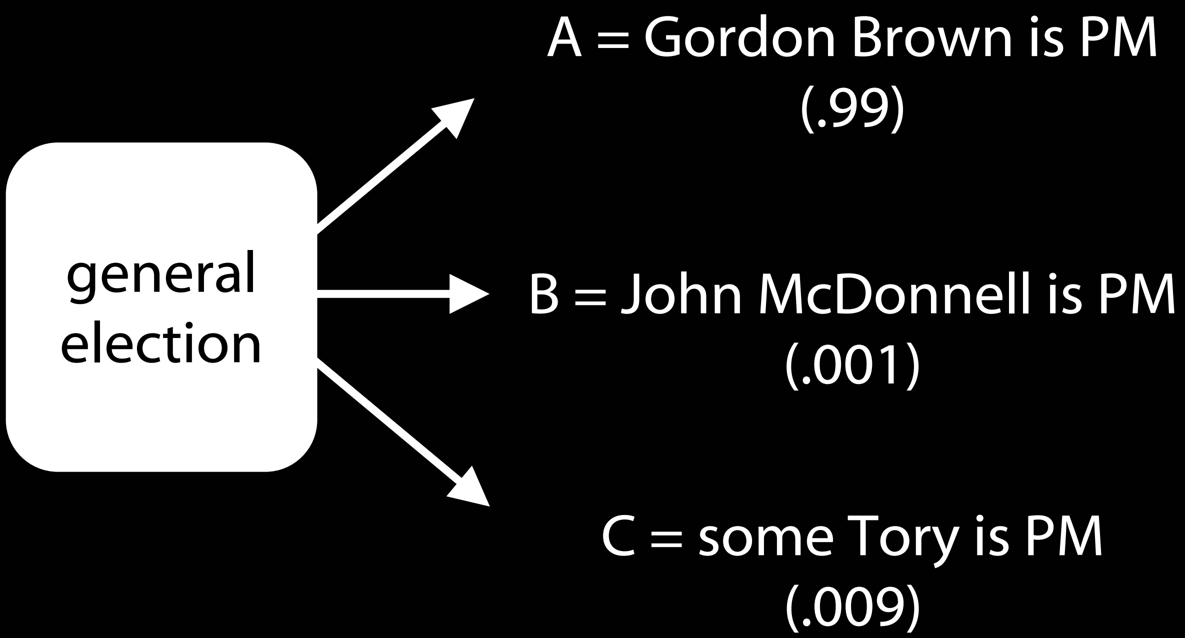

$P(A \vee B) = .991$

$P(B | \neg A) = .1$

$P(\neg B | \neg A) = .9$

Why the inference from A or B to If $\neg$A, B seemed compelling but is not correct …

If we are certain that A or B, then it is reasonable to hold If $\neg$A, B
(because $P(B \mid \neg A) = 1$)

If we are at all uncertain that A or B, then it may not be reasonable to hold If $\neg$A, B
(because $P(A \vee B)$ can be high while $P(B|\neg A)$ is low)