

Policy Decisions in Latent Print Examination Affect Specificity

You miss 100% of the shots you never take

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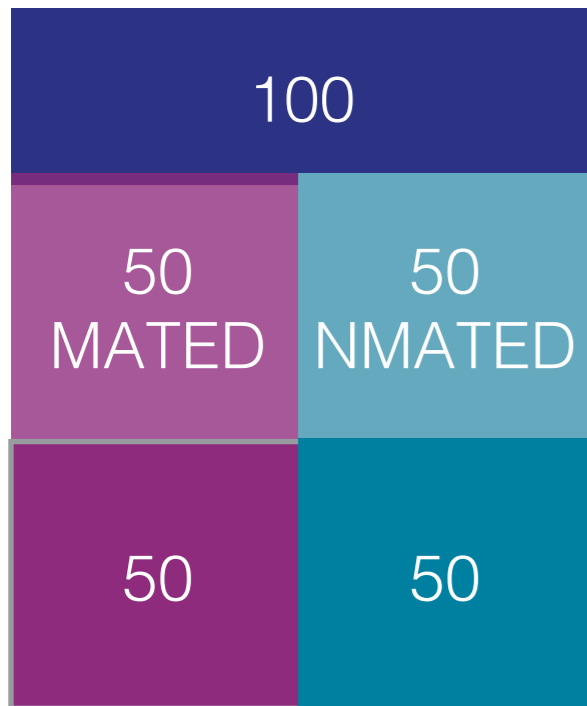


SPECIFICITY

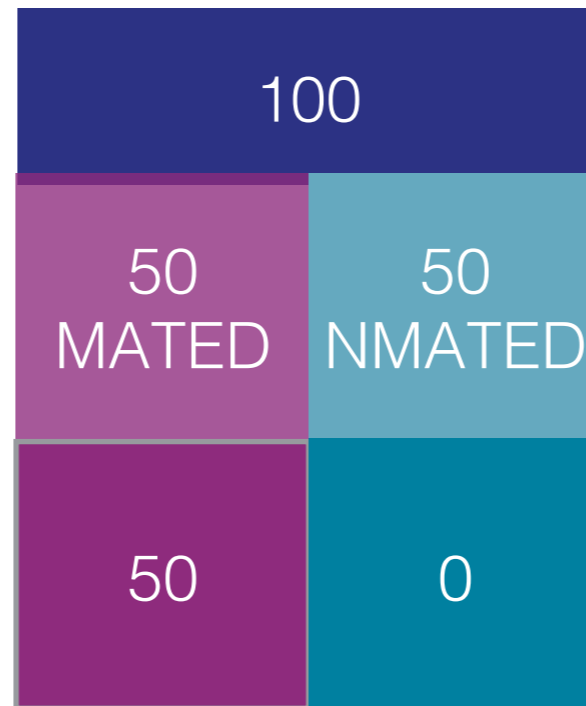
Measures the proportion of true negatives that are correctly identified as such

$$\frac{\text{Correct Exclusions}}{\text{Different Source Trials}} \quad \text{OR} \quad \frac{\text{Correct Exclusions}}{\text{False + and correct exclusions}}$$

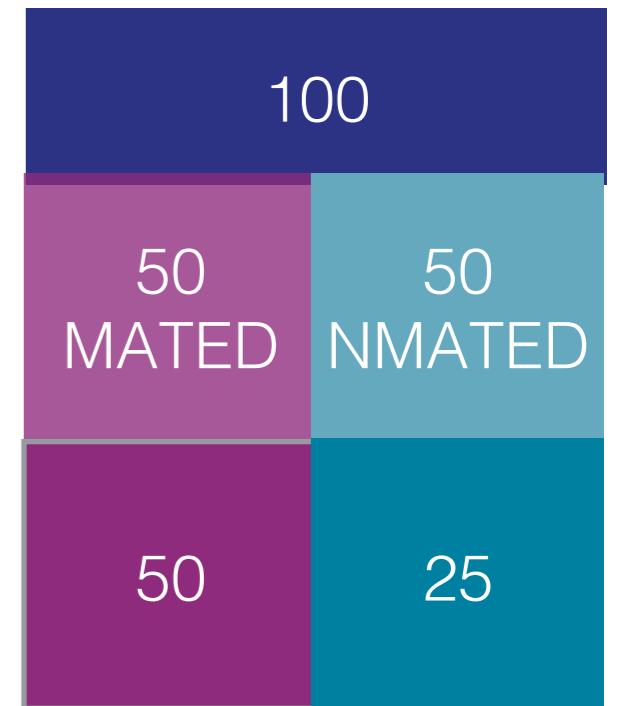
SPECIFICITY



= 100%



= 0%

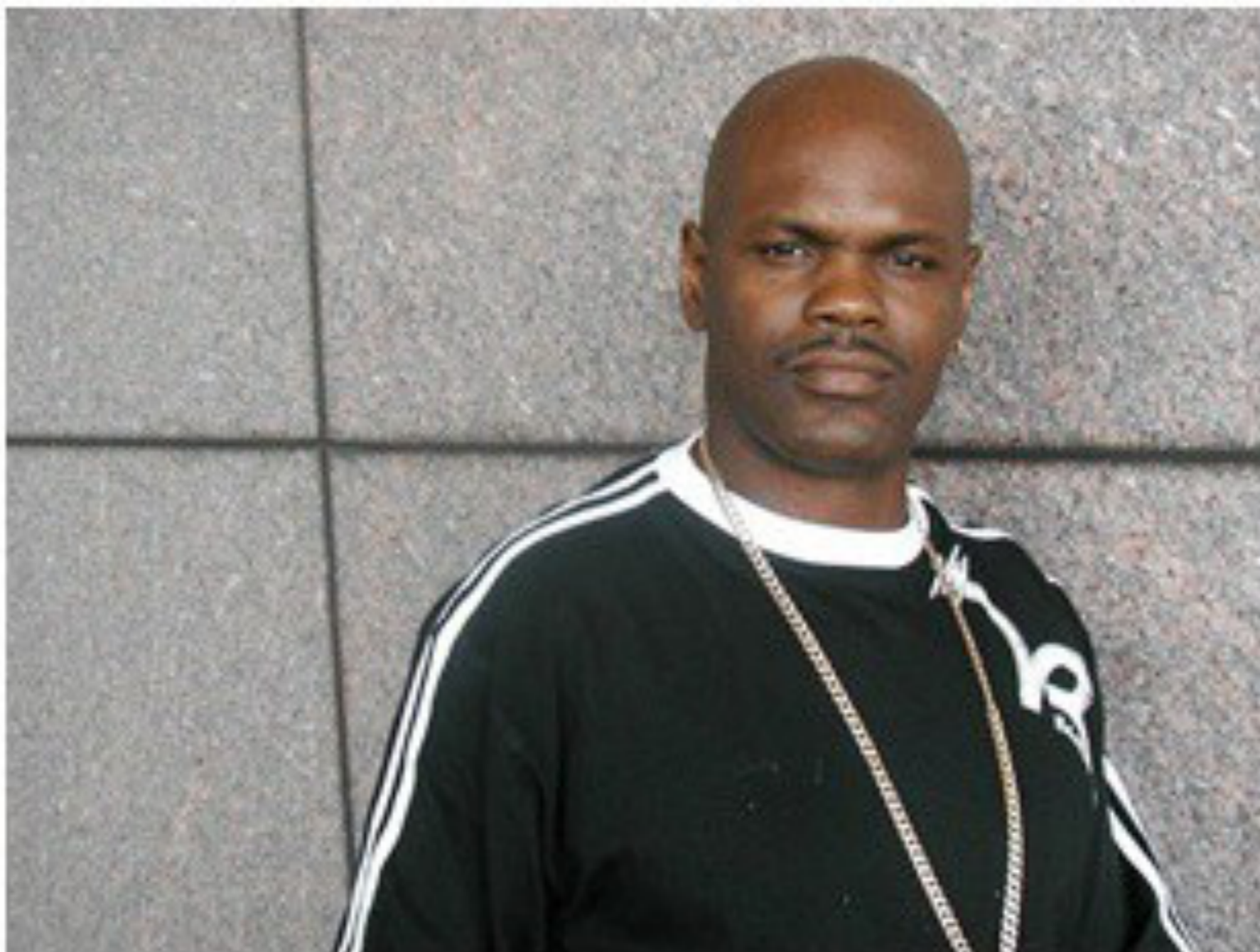


= 50%



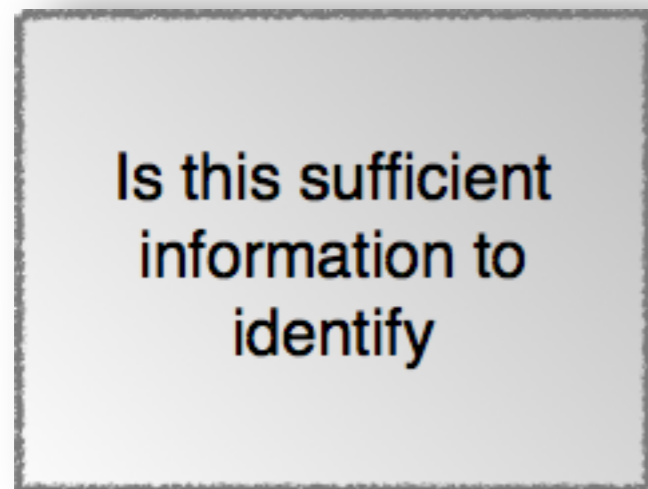
GENE BIBBINS

INNOCENCE PROJECT

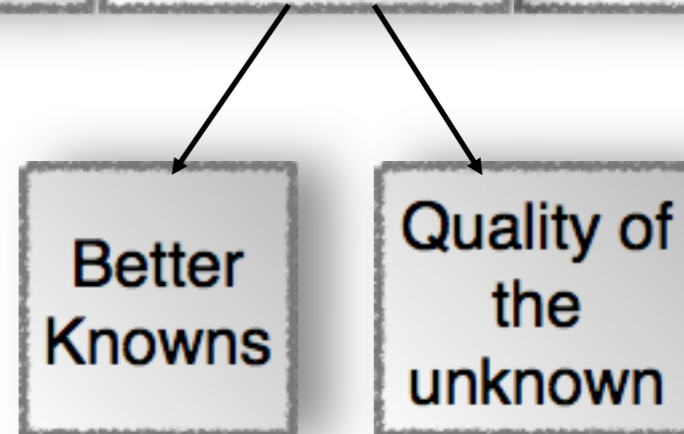
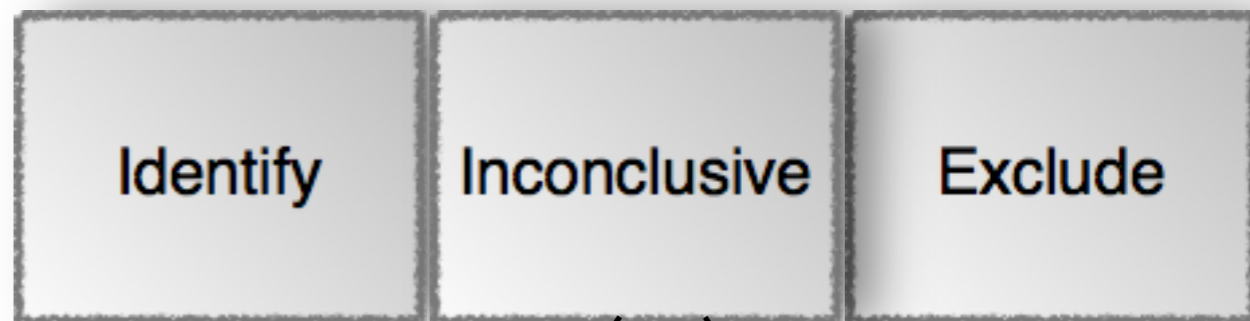
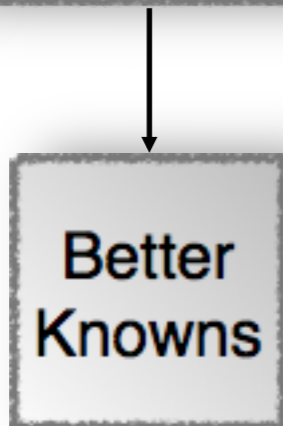
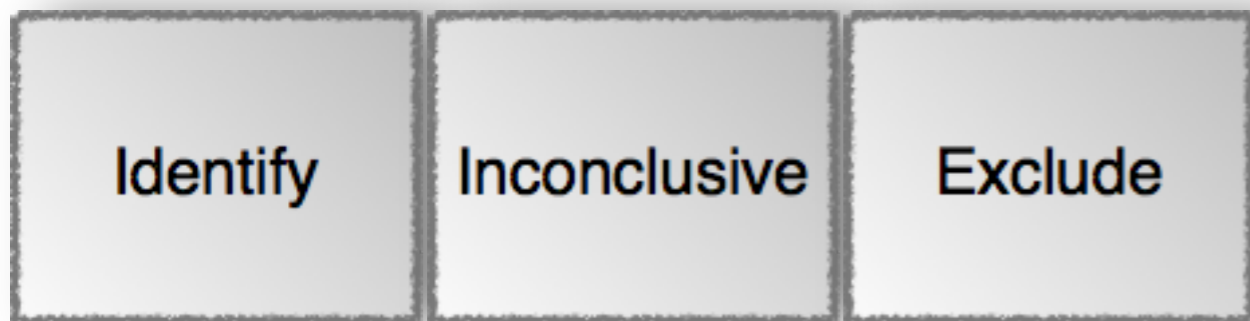
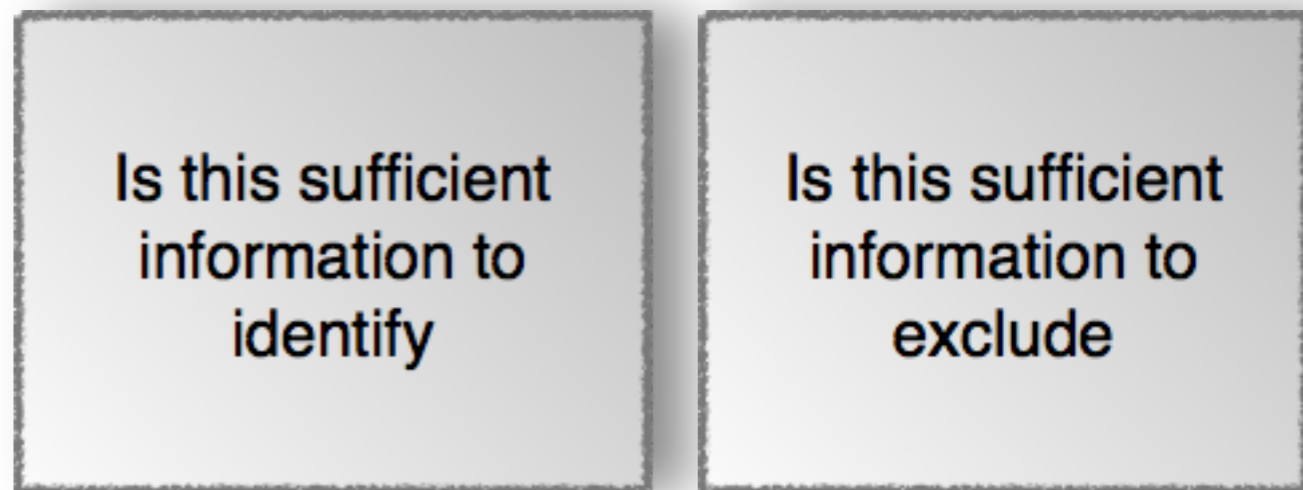


DANA HOLLAND
INNOCENCE PROJECT

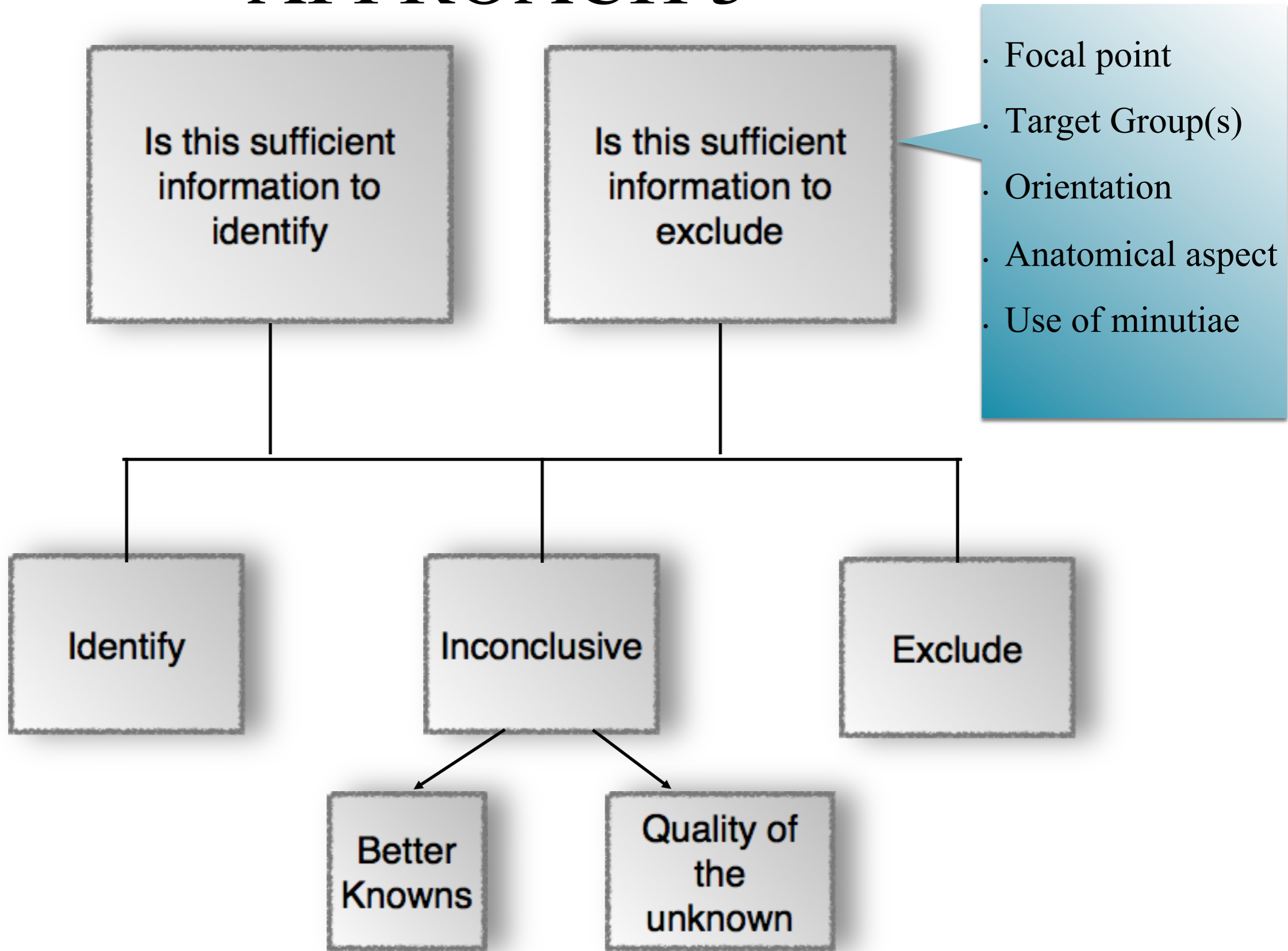
APPROACH 1



APPROACH 2



APPROACH 3





25



16



20

Anchor point?

Orientation?

Known anatomical aspect?



Value for Comparison

Approach 1

Value for ID
Only

- ◆ Only 14% of agencies use ‘Value for Exclusion’
- ◆ 21% would only compare for exclusion if requested
- ◆ 55% wouldn’t compare for exclusion (and don’t keep them?)
- ◆ 23% never use exclusion as a conclusion

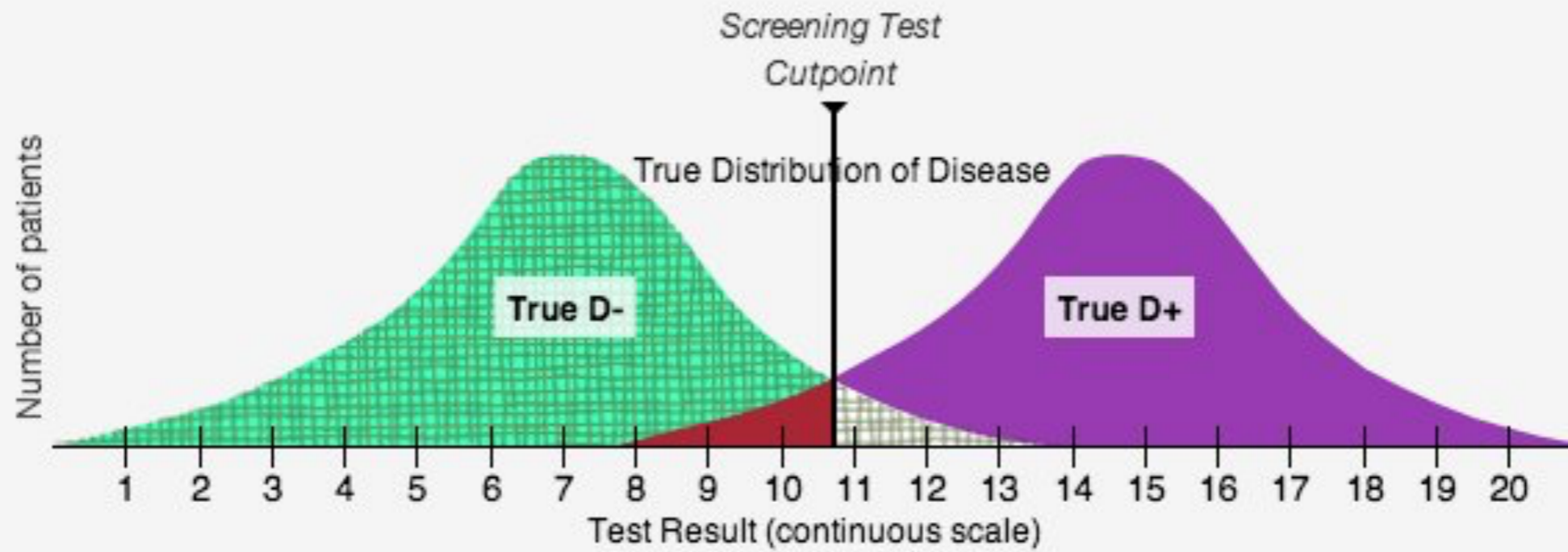
Decision rates

Comparison Decision	Latent Value	Total	Mates	Non-mates	% of non-mated pairs		
					PRES	CMP	VID
(not compared)	NV	3,947	3,389	558	10.1%		
Exclusion	VEO	486	161	325	5.9%	6.5%	
Exclusion	VID	4,072	450	3,622	65.3%	72.7%	88.7%
Inconclusive	VEO	2,596	2,019	577	10.4%	11.6%	
Inconclusive	VID	2,311	1,856	455	8.2%	9.1%	11.1%
Individualization	VEO	40	40	0	0.0%	0.0%	
Individualization	VID	3,669	3,663	6	0.1%	0.1%	0.1%
Totals		17,121	11,578	5,543	100.0%	100.0%	100.0%
Total comparisons	Value (either)	13,174	8,189	4,985			
Total comparisons	VID	10,052	5,969	4,083			

SWGFAST APPROACH	# OF PARTICIPANTS	CORRECT EXCLUSIONS	DIFFERENT SOURCE	SPECIFICITY	FALSE NEGATIVE ERROR RATE
APPROACH #1	24	63	72	87%	6.3%
APPROACH #2	79	179	237	75%	5.6%
TOTAL	103	242	309	78%	4.6%

*Trainees and participants who didn't complete all trials were removed


Slide the bar to see how changing the cutpoint alters the sensitivity and the specificity.



 = FALSE POSITIVES

 = TRUE POSITIVES

 = TRUE NEGATIVES

 = FALSE NEGATIVES

SENSITIVITY = 0.96

SPECIFICITY = 0.9

“There is no generally accepted objective measure to assess the skill of latent print examiners...[It]is not limited to error rates, but also includes, true negative rate, VID and VEO rates, and conclusion rate. An examiner who is frequently inconclusive is ineffective and thereby fails to serve justice.”

Thank You

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