

(1)

EXAMPLE WHERE SUFFICIENCY HOLDS
BUT NOT SEPARATION

A	C	Y	P		
a	c	y	0.0625	Δ ...	\square ...
a	c	$\sim y$	0.0625	Δ ...	
a	$\sim c$	y	0.1875		\square ...
a	$\sim c$	$\sim y$	0.1875		
$\sim a$	c	y	0.1875		
$\sim a$	c	$\sim y$	0.1875		
$\sim a$	$\sim c$	y	0.0625		
$\sim a$	$\sim c$	$\sim y$	0.0625		

SUFFICIENCY HOLDS:

$$P(A|C) = P(A|C \wedge Y)$$

$$P(A, C) = P(A, C, Y) \quad \Delta$$

SEPARATION DO NOT:

$$P(A|Y) \neq P(A|Y \wedge C)$$

$$P(A, Y) \neq P(A, Y, C) \quad \square$$

(2)

EXAMPLE WHERE SEPARATION HOLDS
BUT NOT SUFFICIENT

A	C	Y	P		
a	c	y	0.0625	□...	Δ...
a	c	~y	0.1875		Δ...
a	~c	y	0.0625	□...	
a	~c	~y	0.1875		
~a	c	y	0.1875		
~a	c	~y	0.0625		
~a	~c	y	0.1875		
~a	~c	~y	0.0625		

SEPARATION HOLDS :

$$P(A|Y) = P(A | Y \wedge C)$$

$$P(A, Y) = P(A, Y, C) \quad \square$$

SUFFICIENT DO NOT :

$$P(A|C) \neq P(A | C \wedge Y)$$

$$P(A, C) \neq P(A, C, Y) \quad \Delta$$