

# Why Statistics?

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**Music moves brain to pay attention - Stanford study finds**

Music moves brain to pay attention - Stanford study finds  
STANFORD, Calif. - ...  
Aug 1, 2007

## Covid protection for the fully vaccinated is waning, UK study finds

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### KEY POINTS

- A U.K. study of over 400,000 people who had received both shots of the Pfizer-BioNTech vaccine found its effectiveness fell to 74% five or six months after receiving both doses.
- An analysis of over 700,000 people who had received both doses of the Oxford-AstraZeneca vaccine showed its effectiveness fell to 67% after four to five months.

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Music moves brain to pay attention, Stanfo  
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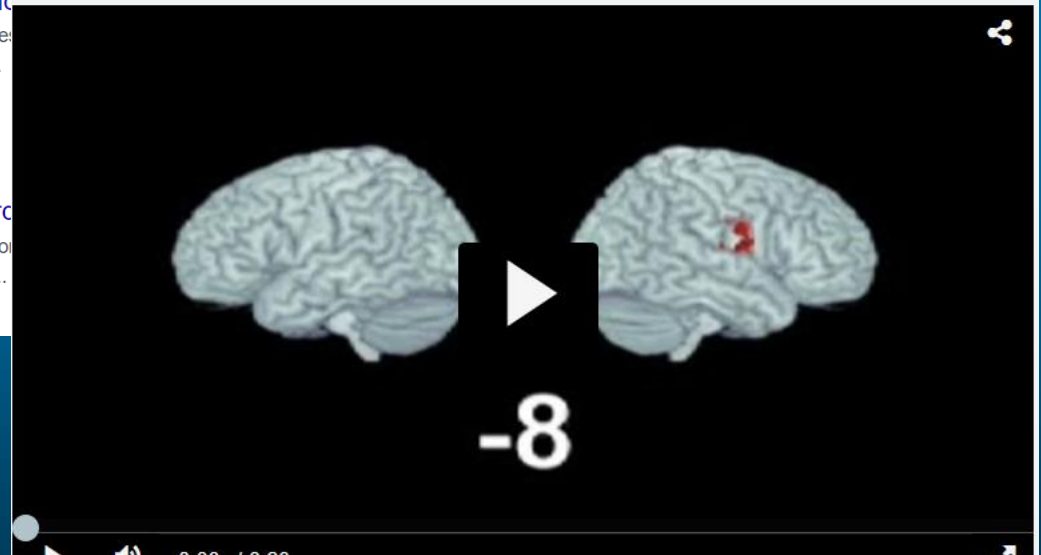
## Music moves brain to pay attention, Stanford study finds

AUG 1  
2007

STANFORD, Calif. - Using brain images of people listening to short symphonies by an obscure 18th-century composer, a research team from the [Stanford University School of Medicine](#) has gained valuable insight into how the brain sorts out the chaotic world around it.

The research team showed that music engages the areas of the brain involved with paying attention, making predictions and updating the event in memory. Peak brain activity occurred during a short period of silence between musical movements - when seemingly nothing was happening.

Beyond understanding the process of listening to music, their work has far-reaching implications for how human brains sort out events in general. Their findings are published in the Aug. 2 issue of [Neuron](#).



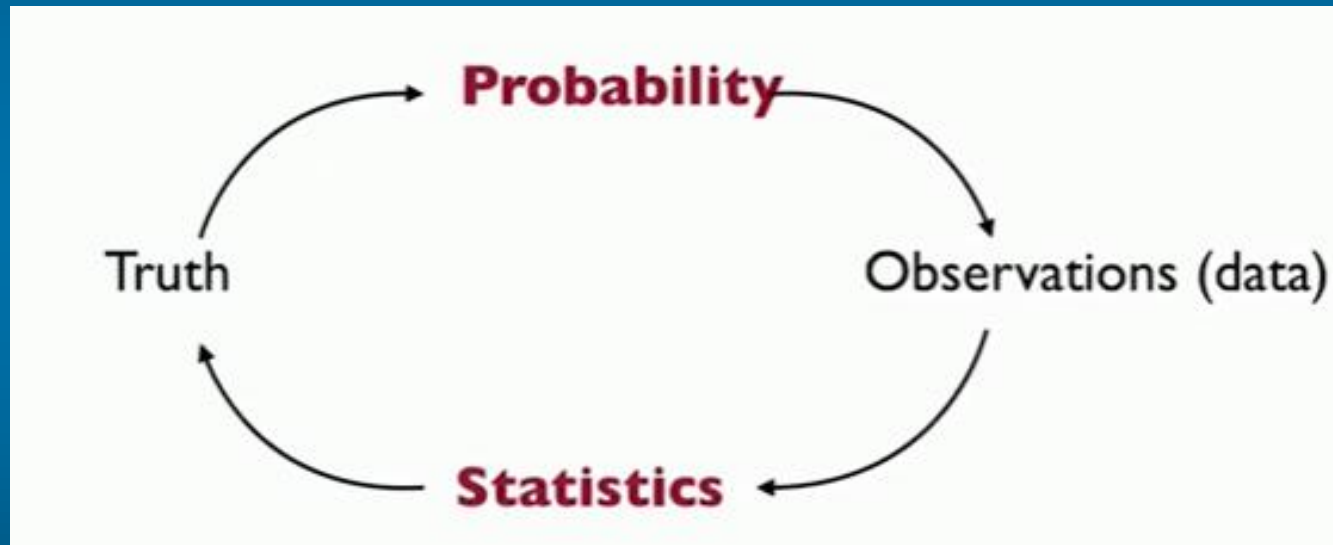
# Statistics and Modeling

- How about more complicated processes? Need to estimate parameters from data. This is statistics.
- Sometimes real randomness (random student, measurement error,...)
- Sometimes deterministic but too complex phenomenon: statistical modeling

Complicated process = Simple process + random noise

- (good) Modeling consists in choosing (plausible) simple process **and** noise distribution

# Statistics vs. Probability



# 1 장

## 자료와 통계학

- 통계학
- 경영과 경제에서 응용
- 자료
- 자료 원천
- 기술통계
- 통계적 추론
- 컴퓨터와 통계분석
- 데이터 마이닝
- 통계실무에서의 윤리지침

# 통계학

- ▶ 통계란 용어는 우리가 다양한 경영경제 상황을 이해하는데 도움을 주는 평균, 중앙값, 백분율, 지수 등과 같은 숫자로 표현된 사실을 나타낸다.
- ▶ 통계학은 자료를 수집, 분석, 표현, 해석하는 예술과 과학으로도 볼 수 있다.

# 경영과 경제에서의 응용

## ▶ 회계

회계법인들이 회계감사를 실시할 때 통계적 표본절차를 사용한다.



## ▶ 경제

경제학자들은 미래의 경제 현상들을 예측할 때 통계적 정보를 활용한다.



## ▶ 재무

재무전문가들은 투자추천을 할 때 P/E 비율이나 배당수익률 등을 이용한다.

# 경영과 경제에서의 응용

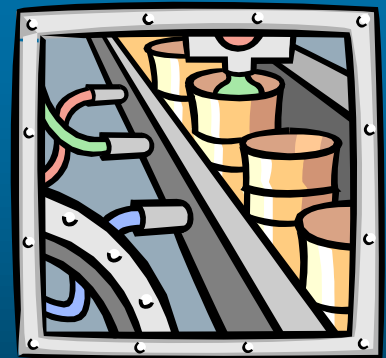
## ▶ 마케팅

소매점 Checkout 카운터에서 사용되는 전자판매스캐너가 다양한 마케팅연구 자료 수집에 이용된다.



## ▶ 생산

다양한 통계적 품질관리차트가 생산 과정의 산출물을 모니터링 하는데 사용된다.





# 자료와 자료집합

- ▶ 자료(data)는 표현과 해석을 위해 수집, 분석, 요약된 사실(facts)나 수치(figures)이다.
- ▶ 특정 연구를 위해 수집된 모든 자료를 자료집합(data set)이라고 한다.