

# **Moonstruck**



**How and why does the moon affects our sleep ?**

# Table Of Content

**1**

**Stakeholders**

**5**

**Countries and the Moon**

**2**

**Context**

**6**

**Objectives**

**3**

**Moonlight**

**7**

**Top Models**

**4**

**Adaptation and Ancestors**

**8**

**Future Vision**

# Stakeholders

Healthcare professionals: Sleep medicine, behavioral treatment , other than medicine

Population: Affected by the moon

Scientists and researchers: Scientists who study the effects of the moon on sleep, including the biological mechanisms that may underlie these effects.

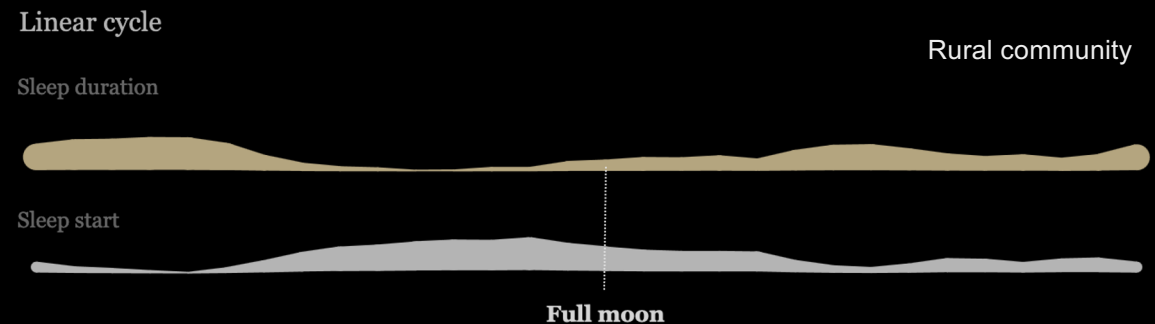
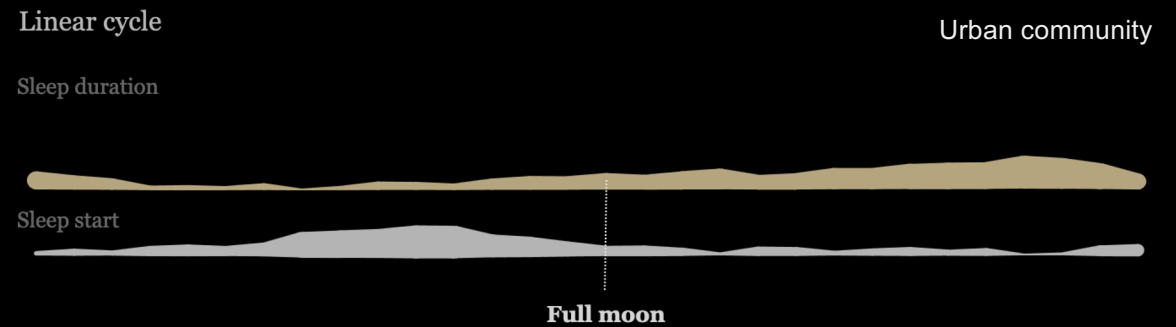
Government agencies: Public health agencies and regulatory bodies that may be responsible for monitoring and responding to any public health concerns related to the full moon and sleep issues.

# Context

We are observing fluctuations in our sleep during the days preceding the full moon

- Sleep is lighter than usual
- Time to enter REM sleep is longer
- Studies have shown that overall sleep is decreased by 20 minutes and time to fall asleep is increased by 5 minutes

Are our circadian rhythms naturally synchronized with the phases of the moon ?



Study made by the University of Washington

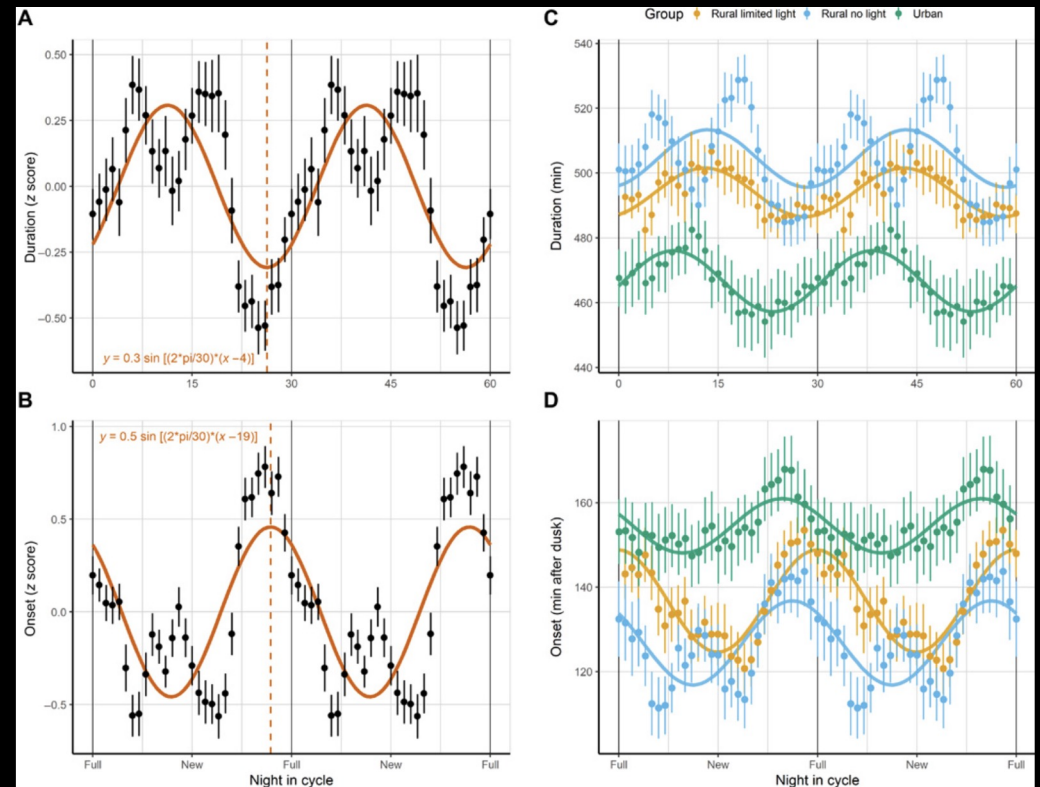
# MOONLIGHT

During a full moon, the moon is reflecting sunlight and appears as a bright, round, fully illuminated disk in the night sky.

Studies show that the full moon nights make people go to sleep later, especially in zones where access to artificial light is limited.

The effects of light lower the level of melatonin in the human body

But... Why this effect applies also in big cities ?



Study in Sciences Advances

## **An innate adaptation inherited from our ancestors ?**

According to the study of the University of Washington:

- When there was no artificial light, our ancestors followed the cycle of the moon to rhythm their sleep
- When there was a full moon, the nights were brighter, allowing them to extend their activities for example

# The place of the moon in cultures: Chinese Calendar

In the Chinese calendar, the full moon plays an important role in determining the dates of some traditional holidays and festivals. The Chinese calendar is a lunisolar calendar, which means that it is based on both the cycles of the sun and the phases of the moon.

One of the most important holidays in the Chinese calendar is the Mid-Autumn Festival, which takes place on the 15th day of the 8th lunar month, which typically falls on a full moon day.

Overall, the full moon is an important aspect of the Chinese calendar and plays a significant role in the timing of many traditional holidays and festivals.



## Saudi Arabia

The Islamic calendar is a lunar calendar, which means the start and end of the lunar month are determined by the sighting of the new moon. In Saudi Arabia, the sighting of the new moon is used to determine the start of the Islamic month of Ramadan, which is the ninth month of the Islamic calendar.



## Thailand

The full moon of the twelfth lunar month (usually in November) is celebrated as Loy Krathong, a festival where people float small boats made of banana leaves, candles, and flowers on rivers and lakes to pay respects to the water goddess.





# Objectives

- Organize a study with a large population sample (100k) on the coordination of our circadian rhythms with moon cycles
- Researchers will collaborate with sleep expert doctors
- The goal is to find a correlation with explanations that will make the theory irrefutable
- Then, we can start wonder if being on a lunar calendar would be a better fit for our natural needs

# TOP model for our study

- Technology

Data collection : use technology to collect data on sleep patterns and moon phases

Use connected watches to analyse the sleep of the patients

- People

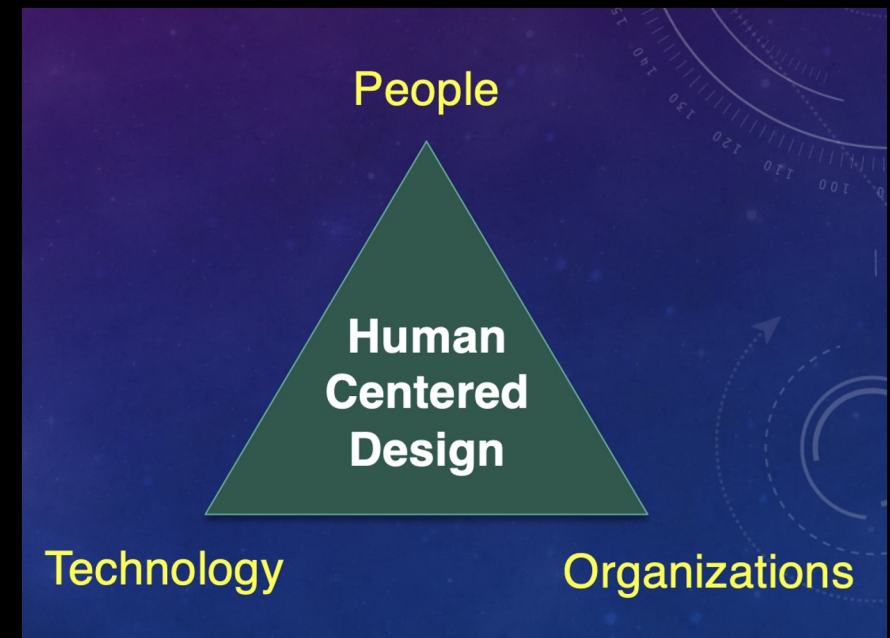
Combination of knowledge of researchers and experts in sleep medicine

Experimentations on big samples of people

- Organizations

Use data to analyse the evolution of the sleep during the moon cycle

Use KPI's to evaluate the study : number of errors, accomplishment rate



# TOP model for future vision

- Technology

Smartphone: alert that the full moon is coming

Intelligent lighting that automatically adapts when night falls

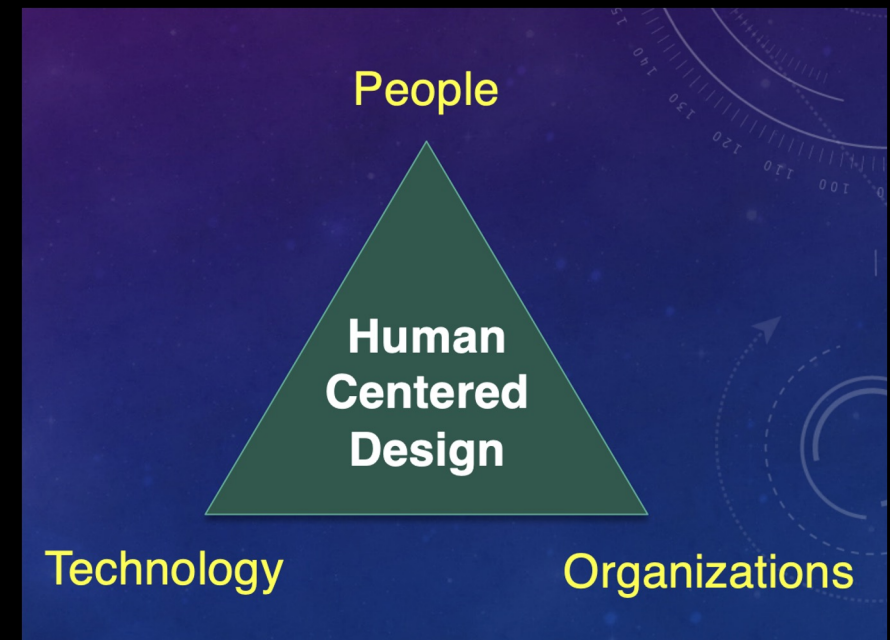
- People

Will to change towards a better lifestyle

- Organizations

Changes in the way we work: follow the cycles of the moon

This implies no working during the night



# Future Vision

- A project for our well being as sleep is crucial to our daily performance
- If we can prove that our circadian rhythms naturally adapt to the cycles of the moon, how can we benefit from it ?
- Technology coupled with people's willingness to evolve and changing organizations can lead to a better lifestyle

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Thank you !



By: -Elena Belhassen

-Anwar Hajjar

-Nacer Zerouali