

WHITEPAPER

Merivian Watch

Scientific Background



MERIVIAN
Mindful Timekeeping

Preface

We believe that we can make a major impact on the daily well-being of millions of people by changing the way they see time.

That is why we have developed Merivian Watch, a science-based paradigm shift in timekeeping to stimulate regular sleep and foster a mindful approach to time management.

Our Mission

To ignite a movement for a healthier and more fulfilling relationship with time.

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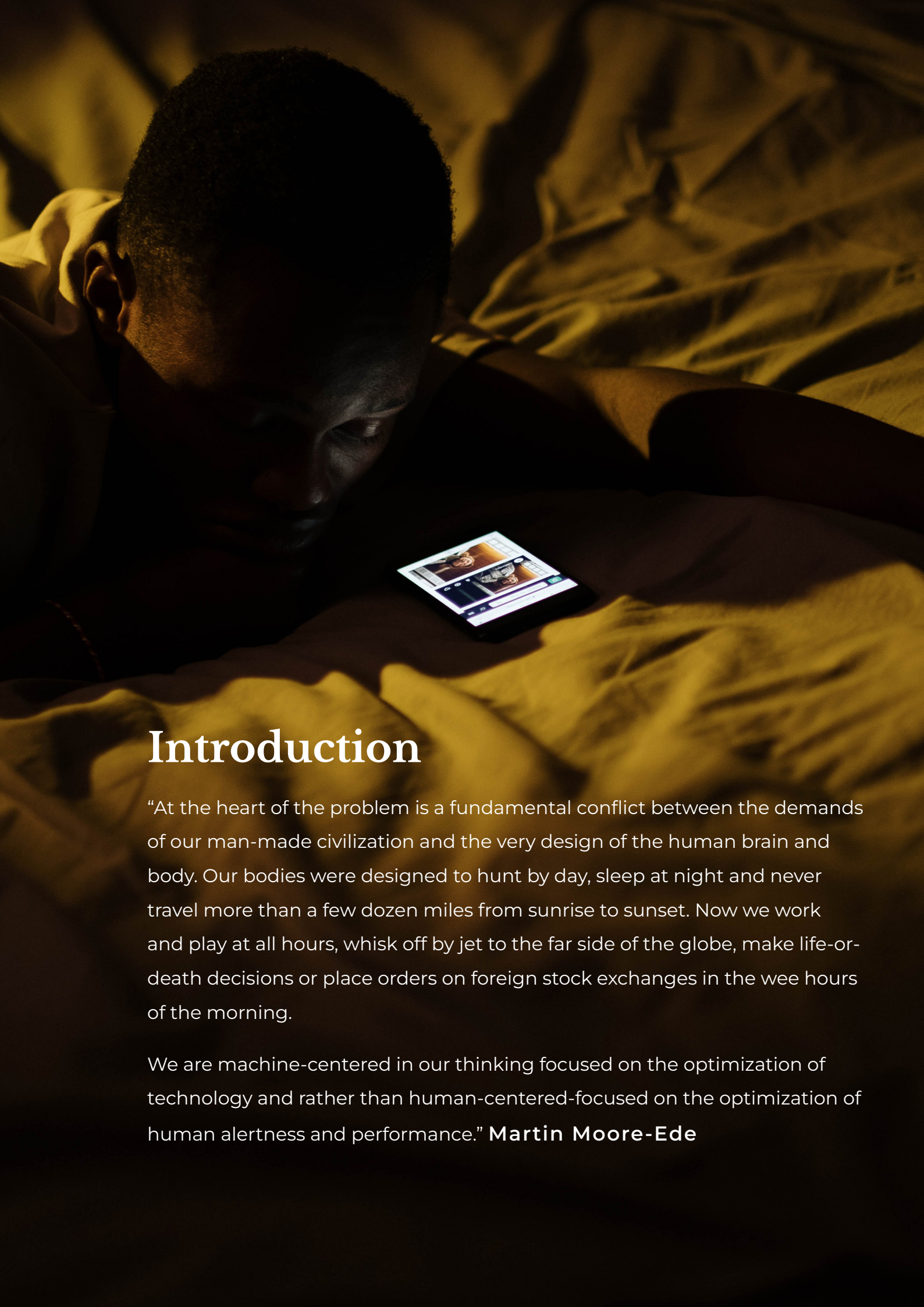




About this whitepaper

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Introduction

"At the heart of the problem is a fundamental conflict between the demands of our man-made civilization and the very design of the human brain and body. Our bodies were designed to hunt by day, sleep at night and never travel more than a few dozen miles from sunrise to sunset. Now we work and play at all hours, whisk off by jet to the far side of the globe, make life-or-death decisions or place orders on foreign stock exchanges in the wee hours of the morning.

We are machine-centered in our thinking focused on the optimization of technology and rather than human-centered-focused on the optimization of human alertness and performance." **Martin Moore-Ede**

A SHORT OVERVIEW

The Dangers for Our Well-Being in a Connected World

A collective social jet lag

This conflict between the demands of society and our body's internal rhythm has been called 'a social jet-lag' (Foster, 2022). In the European Union, as many as 19% of employees work one night or more a month (Eurofond 2015). 44% of U.S. employees grapple with persistent daily stress (Gallup, 2023) and 65% of American adults do not reach the recommended seven to nine hours of sleep (Gallup 2022; Watson NF, et al. 2015; Hirshkowitz M, et al. 2015).

The consequences are far reaching, impacting not only physical health but also cognitive functions and emotional well-being (Foster, 2022). Chronic sleep deprivation weakens the immune system, elevates the risk of cancer, and disrupts blood sugar levels, making individuals prone to conditions like Alzheimer's disease and cardiovascular issues (Walker,

2012, Foster, 2022).

Moreover, "with chronic sleep restriction an individual will acclimate to their impaired performance and reduced energy so that low-level exhaustion becomes their accepted baseline" (Walker, 2012). So, differently from a regular jet lag, we might not even be aware that we are living a permanent one.

Our technology addiction

A 2023 survey by Reviews.org among 1000 Americans aged 18 and above shows that respondents check their phones an average of 344 times per day, roughly once every 5.5 minutes and nearly half of the subjects confess to being addicted to their cell phones (Kerai, 2023).

Scientific research supports the link between late-night mobile phone use and a range of adverse effects,

including insomnia, low energy, tiredness, and headaches (Mohsin 2021). Yet liberating ourselves from the clutches of our screen addiction proves to be a formidable challenge.

Author Oliver Burkeman notes succinctly: “The technologies we use to try to “get on top of everything” always fail us in the end, because they increase the size of the “everything” of which we’re trying to get on top.” (Burkeman, 2021)

Outsourcing self-awareness

Ironically the very tech that seduces us late at night is also seen by many as a solution to reduce stress and achieve better sleep.

Yet, research has shown that this is a questionable hope as many of the commercial apps available fail to provide an accurate data (Forget et al, 2011, Foster, 2022) and individuals can even become anxious if their device inaccurately reports ‘insufficient restful sleep’ or raised levels of stress (Gavriloff et al, 2018, Fino et al., 2020, Foster, 2022).

However, our main concern is not

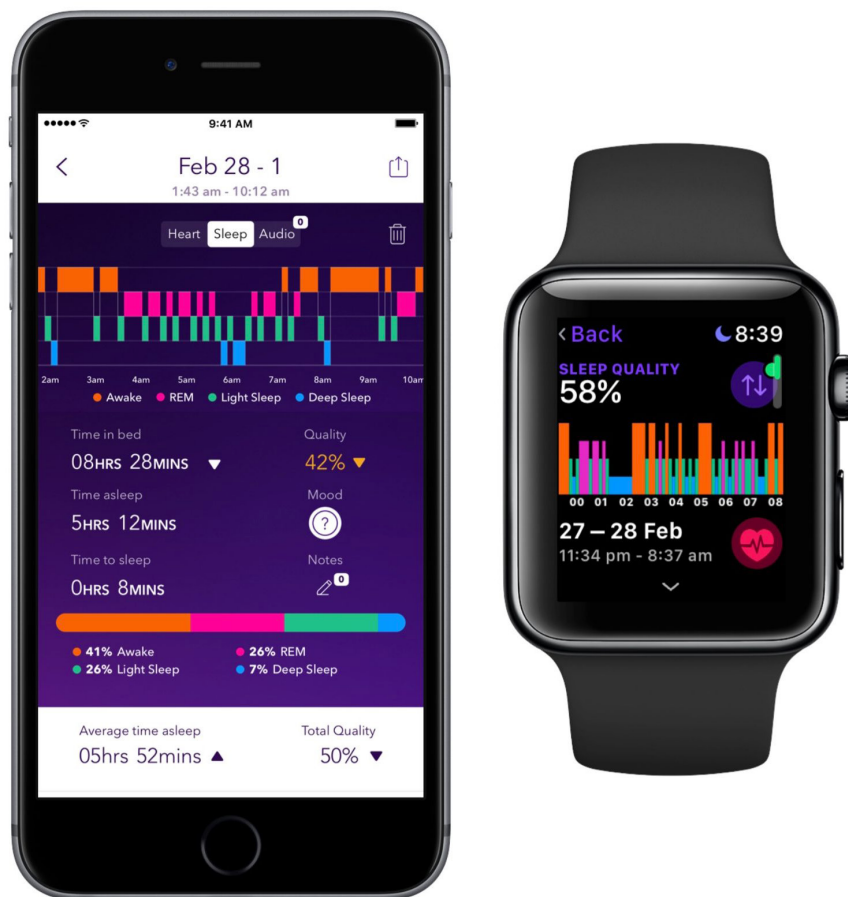
the efficacy of these tools. It is the question whether this shift from internal self-awareness to external dependency is beneficial for our mental well-being and resilience in the long term. As Levi Hildebrand puts it: “If we are outsourcing our self-awareness and motivation to these devices, we are basically setting ourselves up to be controlled by them” (Hildebrand 2023).

Growing call for change

Hildebrand represents a growing group of individuals that are aware about the adverse effects of our technology and advocate for change.

In this light, the number of individuals in the U.S. that have shifted self-awareness inwards, by turning to meditation and mindfulness practices has more than tripled in the past 10 years amounting to 36 million in 2022 (Marketdata LLC, 2022).

This is the backdrop in which the Merivian Watch was developed. A single purpose, distraction-free analog timepiece. Designed to help us spend our energy and time with intent and stimulate regular periods of recovery.



How did you sleep last night?

A simple question that apparently can only be answered with complicated statistics.

“We must learn to establish stopping points in our days, inviolable times when we step off the track, cease processing information and shift our attention from achievement to restoration.”

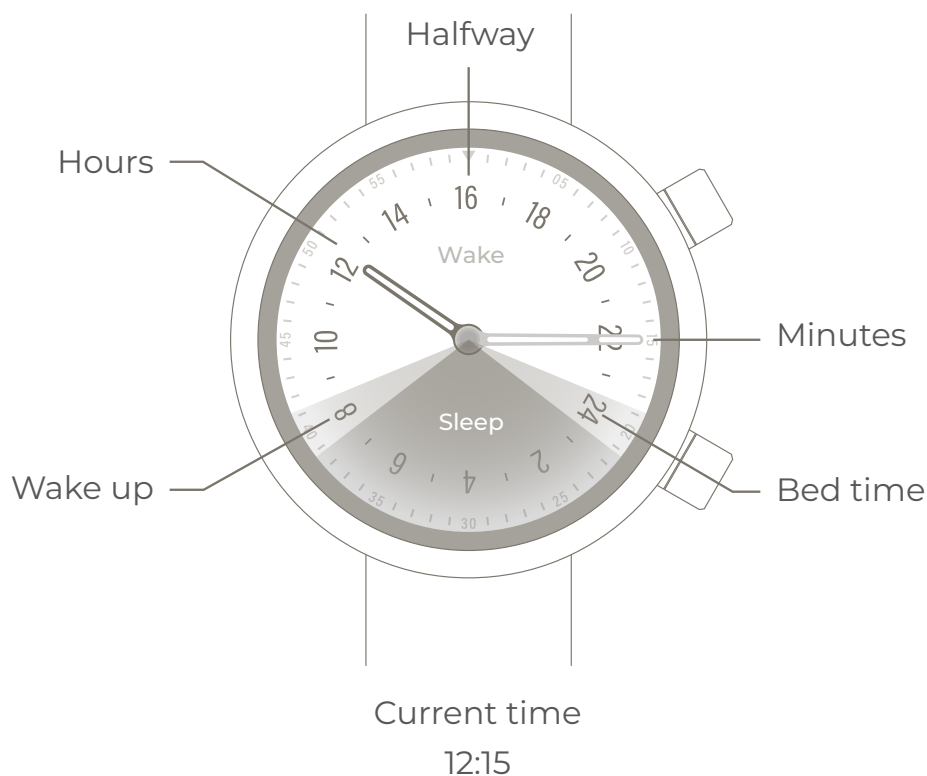
Jim Loehr

MERIVIAN WATCH

How it Works

Merivian Watch stimulates regular sleep and fosters a mindful approach towards time management by showing time in a human centered way.

Merivian Watch shows the full 24 hours of the day and the recommended 7-9 hours of sleep for adults. Merivian Watch is designed to be adjusted to your rhythm so the current time is shown in relation to the moment that you wake up and go to bed.



First setup - adjusting the watch to your rhythm

To start using Merivian Watch you can rotate the hour marks on the dial so your desired wake-up and bedtime corresponds with the stationary shaded sleep region on the crystal. You can choose a reference line on the edge of the sleep region to set a personal sleep goal within the recommended range. (See the next section for an example.)

FIRST EDITION

01/50

MERIVIAN
Watch Co.

DUTCH DESIGN
SWISS ENGINEERING



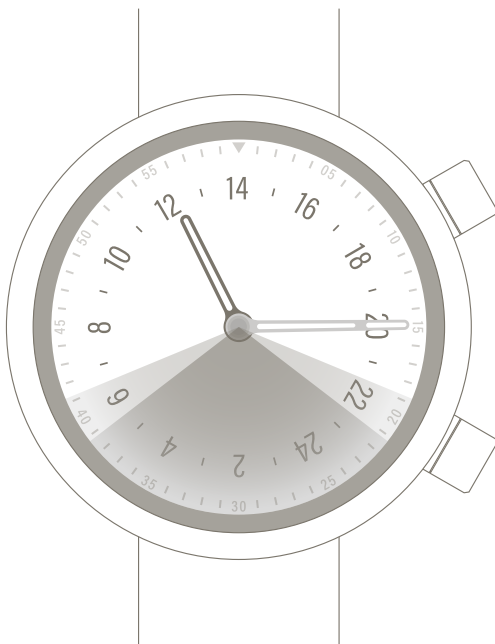
NATURAL TIMEKEEPING

Change your perspective. Change your day.

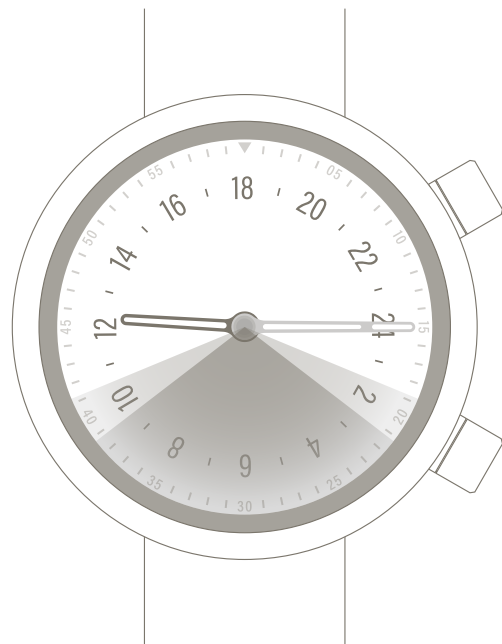
Our 24-hour timekeeping system is based on the Roman Civil Day that starts and ends at midnight. It was developed to align society but it did not take into account individual rhythm or chronotype. In a time where the sun governed the pace of everyday life this made sense but with the arrival of artificial lighting and digital media our schedules are more diverse than ever. Today the same time can mean something completely else to different individuals.

How you see your day effects what you do with it. Merivian Watch changes your perspective on time and inspires regularity and intentionality.

Early Bird



Night Owl



What does 12:15 mean to you?

Night Owls might just get started while Early Birds are almost halfway their day.

THE UNDERLYING BEHAVIORAL-SCIENCE

Showing Time in a Human Centered Way

The new paradigm of Merivian Watch stems from the understanding that human episodic memory does not align with conventional methods of displaying time. According to Hengchen Dai, a professor at UCLA, rather than perceiving time as a continuum we tend to think about our lives in episodes creating story arcs from the notable incidents, or temporal landmarks, in our lives. (Milkman, 2021).

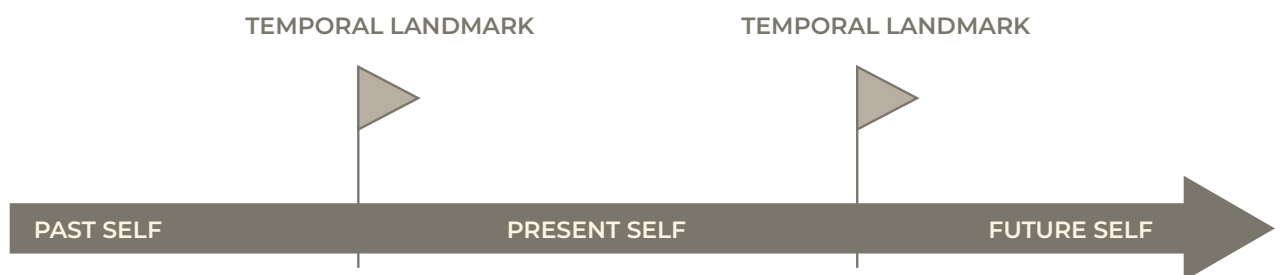


Diagram modified from Hengchen Dai et al

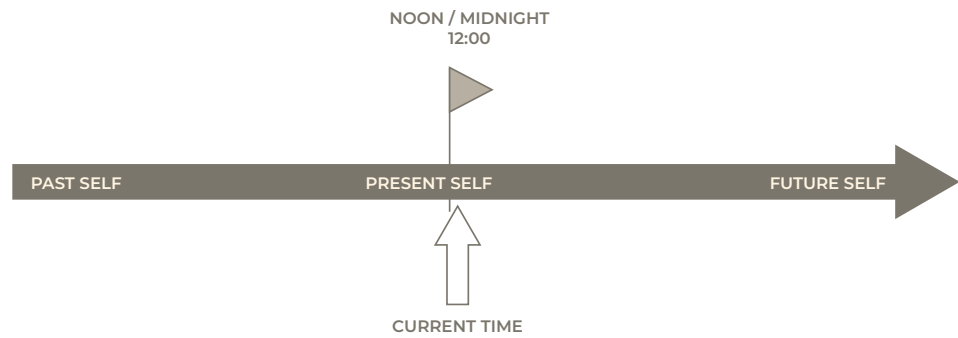
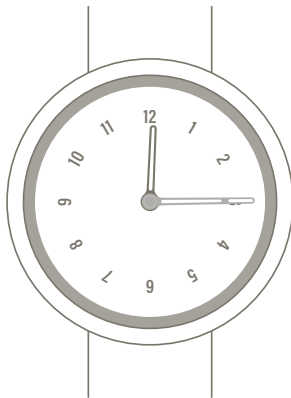
In standard timekeeping there is one temporal landmark at 12:00. A time that does not hold any meaningful significance in most people's daily lives.

The fact that there is only one landmark also signifies a lack of separation between the present moment and past or future events.

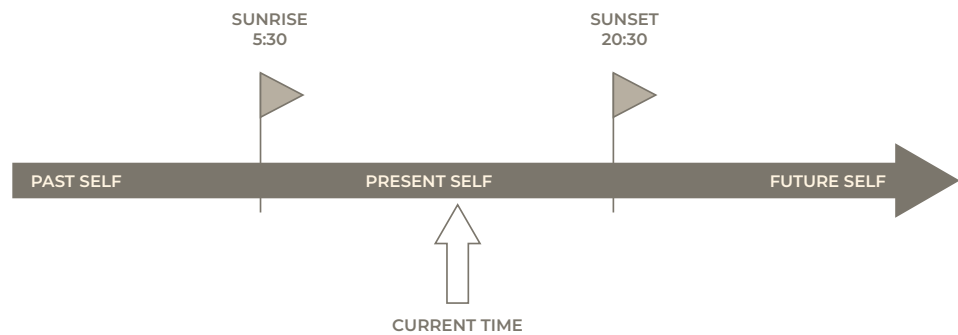
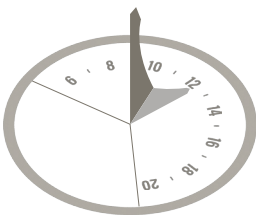
Ancient sundials, however, harmonized seamlessly with human episodic memory. Sundials, guided by the rising and setting sun, provided behavioral cues, signaling when it was time to wake or rest: effectively separating the past, present and future self.

Merivian reintroduces behavioral

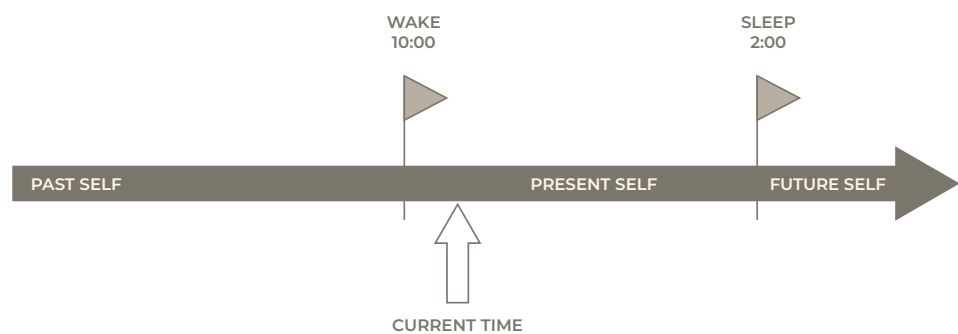
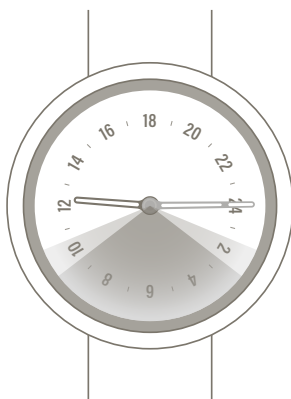
Standard timekeeping



Solar timekeeping



Merivian Watch



cues for wakefulness and rest, whilst decoupling them from the position of the sun. This restructures the user's perceived environment by aligning these cues with an individual's personal wake-sleep rhythm. Merivian recognizes that societal conventions may hinder synchronization with natural light but acknowledges the importance of a regular rhythm as advocated by all major sleep institutions.

Big picture mindset and the Fresh Start Effect

The new paradigm also enables two key psychological principles: the ‘Big Picture’ mindset and the Fresh Start Effect, driving motivation and positive behavioral changes (Dai et al. 2019).

The concept of temporal landmarks, as outlined in studies on motivation, demonstrates that these time markers have the ability to shift our focus from mundane day-to-day activities to larger, goal-oriented perspectives (Dai et al. 2019). By interrupting routine minutiae, these temporal landmarks prompt a ‘Big Picture’ mindset, directing attention towards high-level, goal-relevant information. This shift in focus amplifies motivation, inspiring individuals to work towards their aspirations (Dai et al. 2019). As Oliver Goffe, founder of the Marloe Watch Company notes: “Merivian Watch empowers you to reassess your daily structure”.

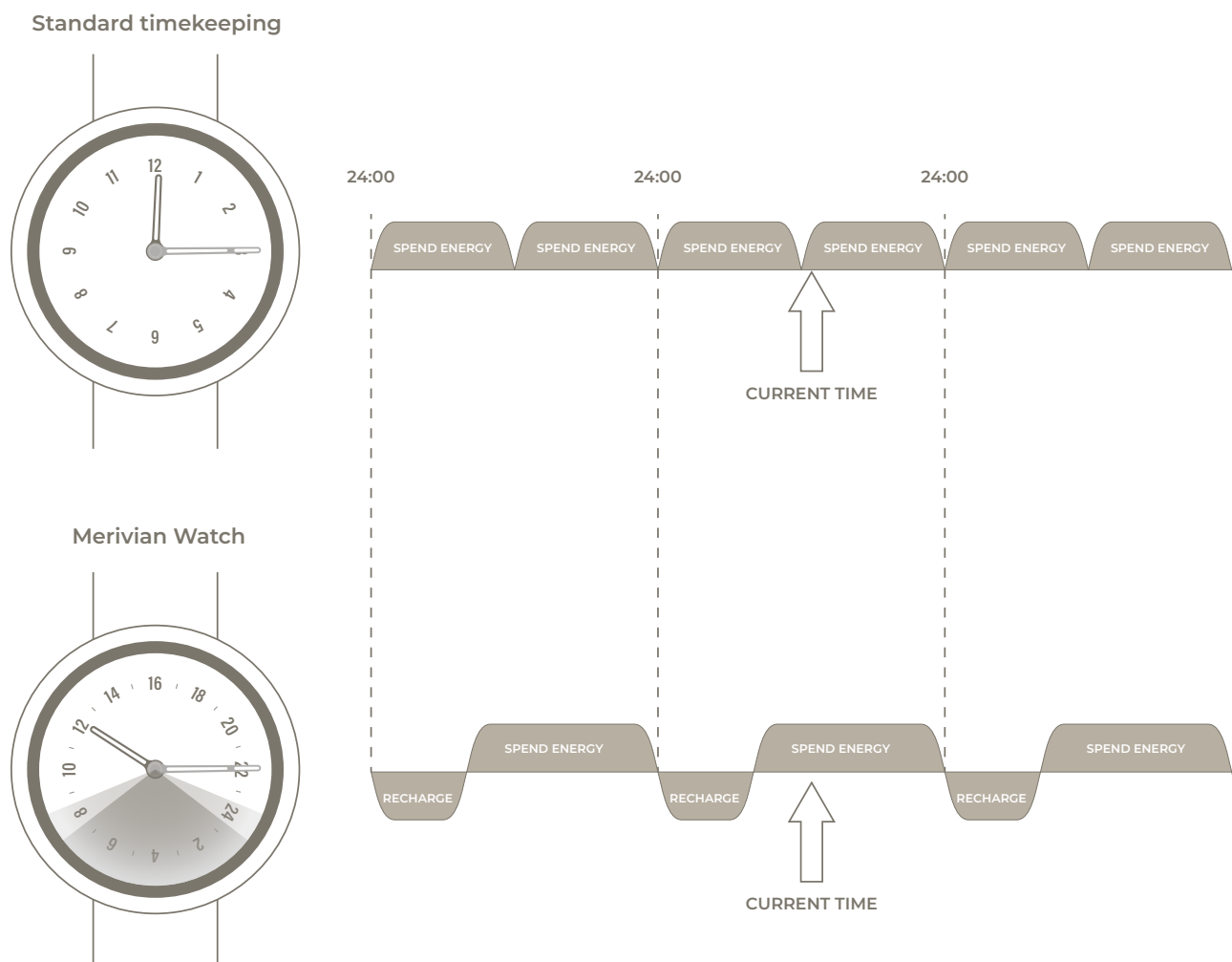
Furthermore, Merivian Watch also capitalizes on the Fresh Start Effect, wherein certain temporal landmarks,

can disrupt old habits and facilitate the establishment of new, positive ones (Dai et al. 2019). Merivian Watch harnesses this psychological phenomenon by serving as a daily reminder of a new day, encouraging users to embrace each day as an opportunity for a fresh start.

EDUCATION AND MODELLING A REGULAR RHYTHM

Leading by Example

In a sense, the lack of meaningful temporal landmarks in standard timekeeping implies an infinite expanse of time that could cater to a belief that one can accomplish anything by merely working longer and sleeping less. Merivian Watch, on the other hand, divides time into two repeating periods of energy expenditure and subsequent recovery. It is driven by the recognition that human physiology dictates a need for regular periods for rest.



The power of the nudge

As described in great detail by Daniel Kahneman, human decision-making often relies on automatic, less intensive processes. Intervention functions for behavior change that target this phenomenon have achieved significant results.

A comprehensive meta-analysis of these intervention functions conducted by Stephanie Mertens et al. in 2021 highlighted the efficacy of so-called 'default choice nudges'.

The design of the Merivian Watch acts as a 'default choice nudge' by consistently displaying the best practices for maintaining a steady sleep-wake routine. The user might deviate from it sometimes, but is encouraged to follow the set rhythm the next day again.

Inwards reflection instead of external dependency

Crucially, managing energy demands inward reflection, necessitating an awareness of activities that either drain or replenish energy. This introspective focus is very different

from relying on smart devices to measure physiological data. Merivian Watch is non-judgmental by nature. It serves as a supportive role-model and empowers the user to connect with their inner sensations and mental well-being.

MANAGE YOUR ENERGY, NOT YOUR TIME

A Mindful Approach Towards Time Management

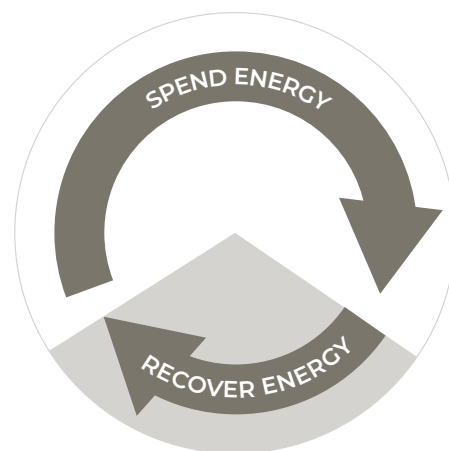
Timekeeping based on our physiological needs fits well with the theory about energy management and recovery by Jim Loehr et al.

Loehr approaches time management from a performance standpoint and even suggests that intermittent stress can be beneficial if followed by adequate periods of rest. This view offers an empowering alternative to the commonly described negative

view on the relationship between sleep, stress and resilience, where poor sleep leads to diminished resilience, resulting in increased stress and further disruptions in sleep patterns (Oers et al., 2019). The perspective embodied in Merivian Watch holds the potential to break the cycle where people experience heightened stress due to the belief that stress itself is harmful.



A negative perspective (modified from van Oers et al., 2019)



A mindful perspective

Old paradigm	New paradigm
Manage time	Manage energy
Avoid stress	Seek stress
Life is a marathon	Life is a series of sprints
Downtime is wasted time	Downtime is productive time

Table modified from Jim Loehr et al.

A CATALYST FOR CHANGE

Embracing Mindful Timekeeping

A major part of the efficacy of Merivian Watch lies in the fact that it is a powerful message embodied in a consumer friendly form factor.

By investing in the watch, individuals make a commitment to adhere to mindful routines. This conscious decision-making process equips users with a clear framework, enabling them to navigate through life’s complexities more deliberately and with purpose.

Moreover, we hope that the impact of Merivian Watch extends beyond personal boundaries when users

share their experiences with others. In this shared endeavor, Mindful Timekeeping can become a communal practice, fostering a sense of connection and understanding among individuals.

We believe Merivian Watch is not only a timepiece with a well thought out story, but a catalyst for change that can make a major impact on the daily well-being of millions of people.

An Open Invitation for Cooperation and Applied Research

Merivian Watch is a refreshing new way to raise awareness, educate and inspire meaningful behavior change in the context of well-being, mindfulness, sleep and time management.

Cooperation

Are you interested in working with us by using Merivian Watch to advocate your organisation's message on similar topics. Please do not hesitate to reach out to us.

Applied research

Merivian Watch has been tested by a large number of individuals but has not yet been evaluated within a therapeutic context. Evaluating the watch's effectiveness within Cognitive-Behavioral Therapy for Insomnia (CBTI) or other therapeutic contexts presents an exciting opportunity to explore the implementation of the watch in a controlled context. The Merivian team would be delighted to carry out such an exploration with interested parties.

Contact us at: info@merivian.watch

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A person with long brown hair, wearing a pink shirt, is partially visible on the left side of the frame. They are standing next to a light-colored wall. A blue planter with green plants is mounted on the wall. The background is a blurred outdoor scene with trees and foliage.

"The ultimate measure of our lives is not how much time we spend on the planet, but rather how much energy we invest in the time that we have"

Jim Loehr