



Tremble and drift

Description

For philosopher Henri Lefebvre, rhythms are influenced by their context. They also vary. The waves on the sea provide an obvious example. Perturbations across water involve counter movements, complex overlays of movement, and the patterns rely on the shape and materials of the shore, the tides, weather conditions, and water traffic.

He contrasts rhythm with *repetition*. Repetition is a “linear,• mechanical phenomenon best represented by the incessant movement of clock time. For Lefebvre, daily life involves the interaction between rhythm and linearity. See my post: [Tide and tide wait for no one](#).

Lefebvre’s book *Rhythmanalysis* contains no reference to cosine waves or Discrete Cosine Transforms (DCTs) (see [last few posts on DCT](#)). However, some researchers have attempted to extract regular rhythmical cycles from everyday events to explore the interaction between rhythm and repetition. Interesting research by He and Agu analyses data about a person’s patterns of movement as detected by motion sensors (accelerometers) in smartphones or fitbits. They break the one-dimensional activity pattern signal into constituent regular cosine curves and correlate these with data about daily events. Their research was to detect and predict when people are likely to be inactive in front of a television or otherwise miss out on healthier pursuits.



If we need any reminding, here are some rhythms in daily life: periods rest and activity, of being sleep and awake; daily and weekly routines of eating, ablution, grooming, work, leisure and chores; the so-called media news cycles; collections and deliveries; income and debits on our accounts; festivals and holidays; the school and academic cycles; religious calendars; gig work patterns. In many cases, apparently random perturbations in any of these cycles may be due to interactions between them, and

from interacting with external agents (other people, systems, processes, devices).

As I'm investigating the cryptographic aspects of city living I'm interested in what everyday rhythms conceal, and how rhythms feature in evasion and deception. The analyses in my last two posts assume that seemingly random sequences of events can be decomposed into a series of overlapping rhythms of different frequencies. I'll refer to *cycles* here rather than *rhythms*, as *cycles* suit better the idea of regular constituent patterns of repetition.

Low and high frequency perturbations

Some cycles may go unnoticed as they appear as variations in a conspicuously regular pattern. We are aware of seasons and regular variations in the length of the days throughout the year, but the earth's rotational axis also drifts slightly according to a much lower frequency cycle. In a more human context, a supplier sends deliveries every month, but falls behind and catches up according to slower cycle that is under the influence of the seasons, absenteeism, traffic, etc.

High frequency cycles of low intensity may also go undetected or ignored. I think of this phenomenon as analogous to the JPEG compression method described in the previous posts. We are less sensitive to small scale but rapid perturbations in colour value across a pixel image. In a different domain, the rate at which a dancer blinks is all but concealed by the overwhelming intensity of the rhythmical movement of limbs and torso. Experts in *body language* identify and study tremors and *hidden cycles* in human behaviour. Under this rhythm-analytic model, the conspicuously everyday, the quotidian, conceals certain activities and influences.

In some cases a cycle may be offset so that its maximum and minimum are reversed: night becomes day and day becomes night (a 12 hour phase shift). Such phase shifting provides a common method of hiding activities and detecting others. Presumably its safer to break into an office when there's no one there. I think of the *stake out* when police, or criminals, observe some location around the clock to detect or evade the target's cycles of activity. Geoff Manaugh's book on [burglary](#) is helpful in this respect. Digital systems introduce other opportunities for revealing, concealing and exploiting *hidden cycles*.

References

- He, Q., and E. O. Agu. 2017. A rhythm analysis-based model to predict sedentary behaviors. *International Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE)* 383-391. Philadelphia, PA: IEEE/ACM.
- Henri Lefebvre, *Rhythmanalysis: Space, Time and Everyday Life* (London: Continuum, 2004), 79.
- Manaugh, Geoff. 2016. *A Burglar's Guide to the City*. New York, NY: Farrar, Straus and Giroux (Macmillan)

Category

1. Society

Tags

1. cryptography

2. DCT
3. Lefebvre
4. repetition
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