

Ilana Hawkins

Good Vibrations

Everything you need to know about haptic technology and how it affects you



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Remember a time when iPhones had a physical home button, or perhaps if you're even older a full keyboard below the screen; Over the past few decades as mobile phone developers simplify the physical aspects of our devices, we continue to lose that interactive feel. Haptic technology was invented to rebuild that interactive aspect of mobile phones without the unappealing physical features. The little buzz you feel from your iPhone when you delete an app, send a text, or snap a selfie, is called vibrotactile haptics, a type of haptic technology that Apple Inc and most technology companies now use to mimic the feeling of pressing a button and make users feel more connected to their device.

Haptic technology is a mode of physical communication between our technology and us. Vibrotactile feedback is what is used in most mobile devices today, it creates sensations, through friction and vibration. When enabled, it will make a slight buzz on



your phone to simulate pressing a button and give physical confirmation. But what's happening under the screen? When you press down on your iPhone a metal dome is pushed which then triggers tiny motors inside your device to send waves of high-vibration patterns to your fingers. Two types of vibrations can occur transient and continuous, transient by definition is brief, such as tapping on a button, while continuous describes longer vibrations such as ringtones. Apple Inc is currently leading the game in incorporating new haptic technology through what they refer to as their 'Tactic Engine'. The reason for this is their devotion to haptic experimenting which has led them to produce numerous articulate vibration patterns of all different intensities setting them apart from their competitors in the mobile world.

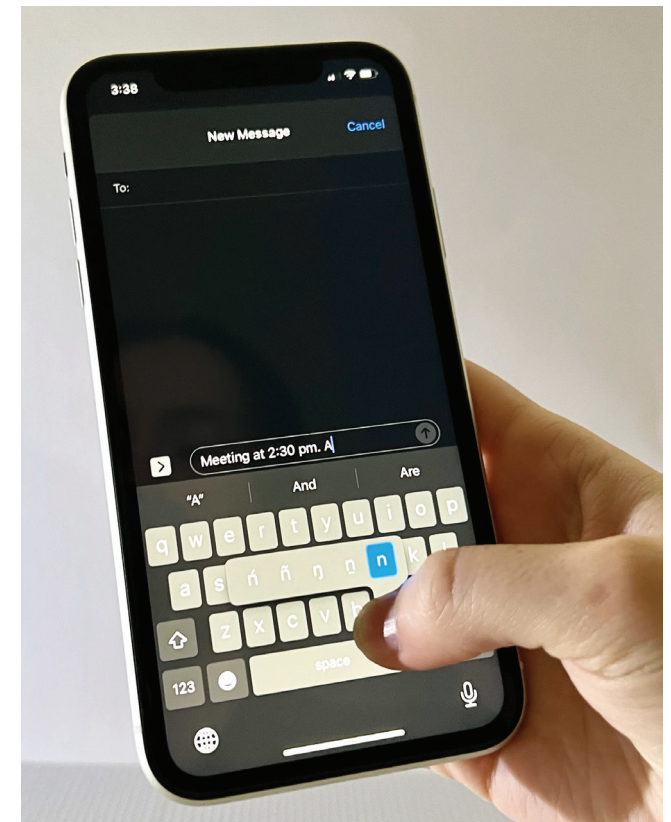
So, what are the actual implications of haptics and is it secretly affecting your life? It is basic human understanding that we communicate using the 5 senses, however,

until recent times, technology has only communicated with 2 of these (sight and sound) with now the inclusion of touch through haptic technology humanity is coming even closer intertwined with technology. Haptic feedback was first developed in the 1970s and originally released for an arcade game called Fonz by Sega in 1976. After this, it continued to be produced into all kinds of video game consoles. It wasn't until 2014 however, that Apple Inc started experimenting themselves, and in 2015 they released the iPhone 6 which contained haptic feedback qualities which measured the touch pressure and responded accordingly. Apple Inc calls its use of haptics the Taptic Engine and since 2015 it has developed significantly. Their devotion to the Taptic Engine demonstrates how they have managed to dominate the mobile world as they understand the positive consumer feedback and influences haptics have on modern life. There has so far not been much research into the new developing

topic although, one research project conducted by Esade's Ana Valenzuela and Rhonda Hadi from the University of Oxford showed clear results in haptic feedback's ability to influence productivity. It was discovered that keyboards which utilised haptic feedback, improve attentiveness resulting in more effective results in tasks such as visual search, navigation, driving, target acquisition and piloting. The two had to say on the topic "The mere addition of haptic feedback to messages can improve performance on a related task". Without even knowing it haptic feedback makes users more productive and target-focused.

It is clear the immediate effect haptic technology and Apple Inc Taptic Engine in particular has on consumers' lives. By understanding just the basics of how it works and its implications one can see why this field is so quickly growing. It is only up to the imagination to guess how these companies

will progress with this technology in the future, although if our recent few years are any indication, haptics is going to make a big impact.



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Cover



Rod with Springs

Senses pressure and sends it to the rest of the engine

Motor Shaft

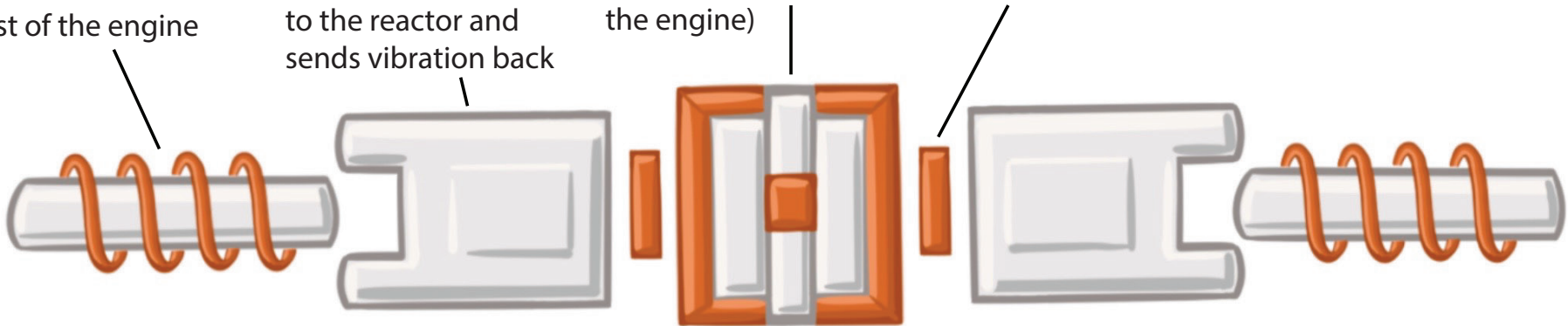
Barrier carries information of touch to the reactor and sends vibration back

Neodymium Magnet

Acts as a button and creates vibrations patterns (brain of the engine)

Coil

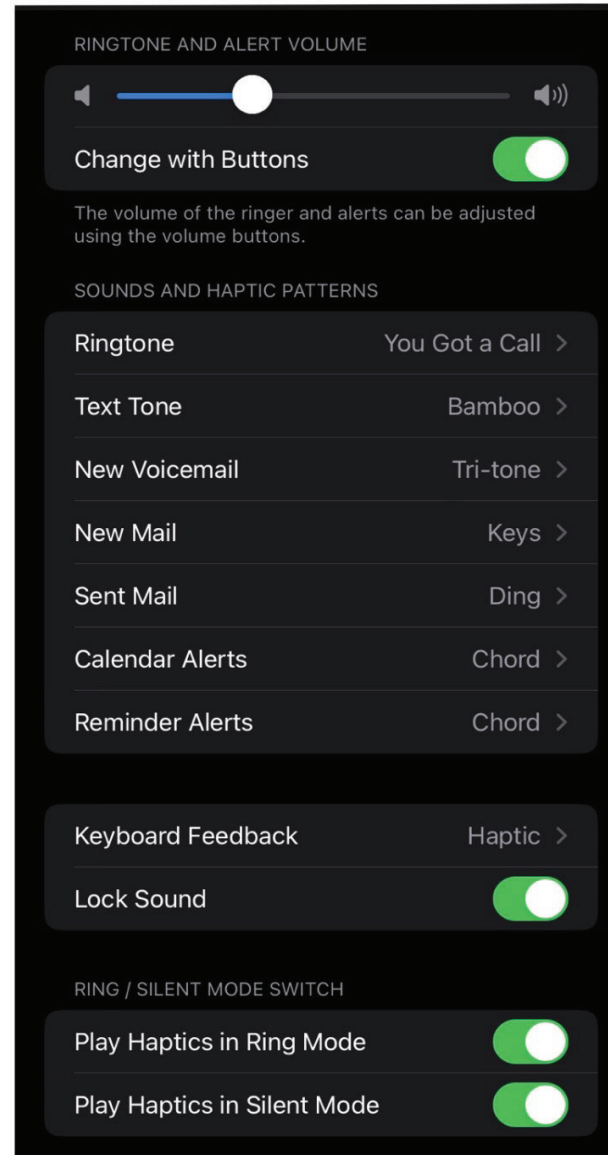
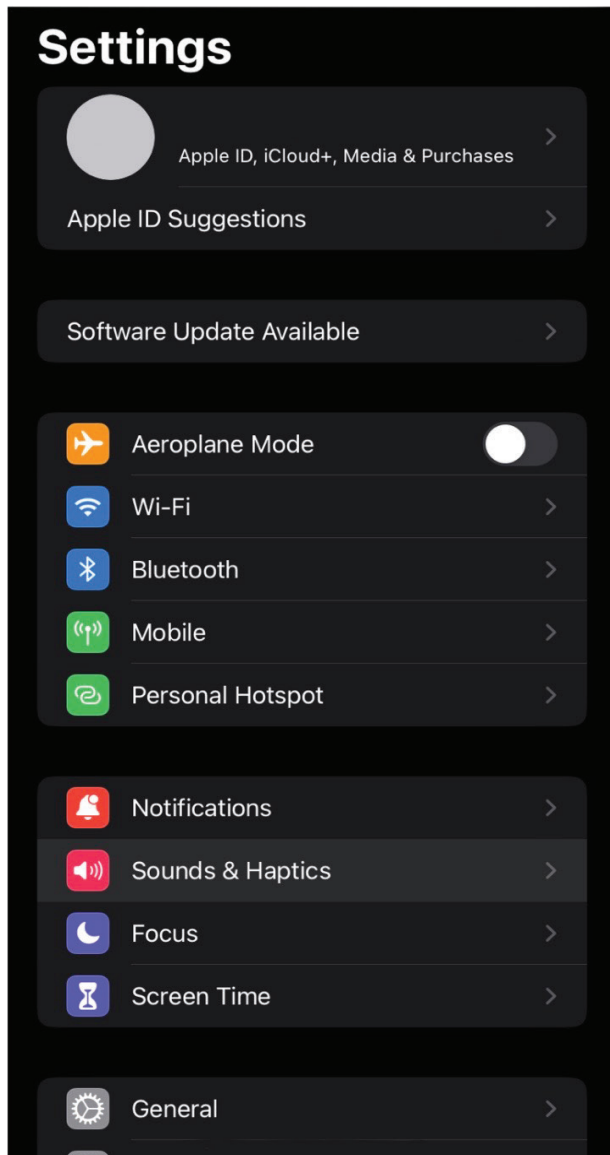
divider that helps carry information



Base



Setting Controls Regarding Haptic Feedback



Changing the sounds of alerts on the iPhone will also trigger different haptic pattern responses; Meaning they are adaptable to whatever vibrations preferred.

Turning on haptic feedback on the keyboard is proven to improve productivity in tasks.

Apple Inc lets consumers control every detail of their haptic use including at what times it is used. By keeping haptic touch on in both Ring and Silent mode, constant vibrations are given.

Global Haptic Technology Market Value (Past, Current and Projected)

