



# e-quilibrium

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## Multitasking

Does talking on your cell phone while driving an automobile affect your safety? This type of question arises frequently in discussions of multitasking, that is, human capability (or inability) to do more than one thing at one time.

The term “multitasking” comes from the information technology field, and refers to a computer operating system that can run more than one process or program simultaneously, without interfering with the other processes or programs. Multitasking originated in the 1960s, and now is so ubiquitous in computers that we take it for granted. Applying this term to what people can do is actually imprecise, because human multitasking actually involves moving from activity to activity in a sequential fashion, rather than doing things simultaneously. It may seem simultaneous, but in fact is rapid shifting of attention from one task to another.

Research in cognitive science is clear that shifting attention from task to task costs time. Obviously, the cost in time is very dependent on the types of activities involved. The complexity of an activity affects the extent to which efficiency is compromised when shifting from task to task. The time cost is much less with very simple tasks than with complex tasks. In psychology laboratories, participants might be asked to switch from solving math problems to identifying objects. In such research, the time cost of shifting tasks often amounts to tenths of a second.

There have also been studies of the impact of cell phone usage on driver reaction time. With respect to driving, it has been established that attention is indeed compromised by talking on a cell phone, and by having a conversation with other passengers (especially if the conversation is complex or high-demand). Studies find no advantage of hands-free versus hand-held devices on driving safety! The mental distraction involved in engaging in conversation appears to be the greater problem than the physical demand of holding a phone. Interestingly, listening to music or to the radio does not appear to affect reaction time. The time cost of shifting attention from a cell phone conversation to braking for an object in the road may be only tenths of a second, but this translates into many additional feet in terms of braking distance.

That it is safer for a driver to not talk on a phone or to other passengers is certainly not front page news. What may be more attention-getting, however, is that studies suggest that the risks of being in a traffic accident are four times greater when the driver is using a cell phone than when not talking on a cell phone. This increased risk is similar to that associated with operating a motor vehicle at the legal limit for blood alcohol. In fact, some research suggests that the accident risk with cell phone usage is actually a bit greater than is driving with a blood alcohol at the legal limit.

Interestingly, some people wouldn't think of driving after drinking but don't hesitate to talk on a cell phone when driving. And distracted driving may become an even greater problem as other technology makes its way into automobiles, including navigation systems. Paradoxically, while computerized devices have increased efficiency because of their ability to multitask, people become less efficient when attempting to multitask while using these devices.

Human multitasking (even though this is a misnomer) has become commonplace and is frequently expected in the workplace. However, this doesn't mean that it is necessarily more efficient or safe. When operating an automobile, unitasking is clearly the healthier way to go.

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