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Why automation puts an even bigger emphasis on humans.

Automotive design has evolved continuously from the time of the first horseless carriages. Historical eras have focussed on goals such as engine power, component standardisation for manufacture, aerodynamic efficiency, the joining of chassis elements into a unibody, reliability, safety, comfort and quality. Automotive design has moved from challenge to challenge, improving the vehicles along the way.

And in recent years the priority for many OEMS has been that of experience. Reliability, safety, comfort and quality have become minimum requirements, while enjoyable experiences have become the unique sales propositions. The design emphasis shifted significantly in the direction of people. And it can even be suggested that recent years have been an era of automotive experience design.

Road vehicles have many well-established interactions with primary controls, secondary controls, instruments, mirrors, navigator and infotainment system. Intuitive toggles, windshield wiper stalks which resemble the wiper and which move in the same rotary manner, and digital screens which adopt familiar conventions from the world of computers all provide easily understood affordances which people rely upon. While intuitively obvious, it is sometimes forgotten that all the interactions are based on the human rather than on the machine. And after more than 100 years of automotive design the people are well catered for.

Nevertheless, the recent trend of computers on wheels, the growing automation and the arrival of autonomous vehicles have all led to new interactions. And where traditional interactions tended to be physical and deterministic, many of the new ones are instead more semiotic, linguistic and even emotional in nature. With current navigators and infotainment systems it can feel more like arguing with another person than interacting with a machine.

As the interactions have increased in number and complexity the concepts of usability and user centred design have become influential. Memorability, learnability, utility, effectiveness and efficiency have become priorities. Performance metrics borrowed from the world of computers such as task success, time on task, efficiency and learnability have all become tools of automotive OEMs and of their tier one suppliers. New terms have entered the automotive lexicon such as “frictionless interaction” and “algorithmic transparency”.

And as the interactions have increased so has the amount of design work involving people. More and more of the design decisions are about getting the human interactions “right”. Simplicity is a goal, as illustrated by recent developments such as JaguarLandRover’s adoption of what3words in its navigator. And new metaphors have been experimented for systems such as the dashboard, as with Audi’s “Virtual cockpit”. Trying out new HMI opportunities with people has become more frequent, more involved and more critical to getting the driving experience “right”.

And as more and more of the design work has involved people, so too it has involved Human Centred Design. Personas, extreme users, scenarios, customer journeys, empathy maps, Wizard Of Oz approaches and co-design techniques have become as common in some offices as CAD systems, FEA packages and control software. Ford has recently gone as far as launching its D-Ford design startup which adopts a human centred design approach to “drive human progress through empathy, creativity and design”. And Renault Technocentre has developed a form of community driven innovation which involves staff volunteering and co-designing within the company itself.

As automotive design evolves to meet the challenges of the 21st century it is nearly certain that Human Centred Design methods will be increasingly deployed to develop the many new interactions. Meanings, metaphors and ethics may soon become every bit as influential as materials, powertrain and aerodynamics. Counterintuitively, as automation advances, so too does the focus on the humans.