

Designing streets to help drunk people get home

IF YOU'VE ever been part of a crowd spilling out of a late-night bar, you'll be familiar with scenes of drunk people staggering around, the arguments breaking out, not to mention the occasional violent brawl.

Now a model that mimics the movements of drunken crowds might help find ways to design streets so that they direct late-night revellers safely home to their beds rather than into the path of potential conflict.

Simon Moore at the University of

Cardiff in the UK and his colleagues wondered how the staggering gait and loss of balance associated with being drunk would affect a model based on the behaviour of sober crowds. Models have been widely used to predict how crowds will behave, for example, during the Hajj pilgrimage to Mecca in Saudi Arabia, to improve crowd control. This is the first time a model has looked at crowds of drunken people, says Moore.

The team made 24 visits to Cardiff city centre between 11pm and 3am on Friday and Saturday nights, breathalysing people and monitoring their gait. Of the high number of drinkers around, they found that around 25 per cent were staggering.

The team factored this information

into their simulation, then ran simulations with crowds in varying states of inebriation trying to make their way through a narrow alleyway to three different destinations.

As predicted, laminar flow – in which people line up behind other individuals who are going in the same direction – was reduced in the drunken crowds. This slowed their movement by 9 per cent when a fifth of people were staggering, and by 38 per cent when the whole crowd was. This isn't surprising, perhaps,

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but it's the first time traffic flows in drunken crowds have been quantified.

"Drunks become irritants because they slow people's progress towards their goal," says Moore, who presented his team's results at the International Crime Science Conference in London last week. This irritating behaviour means "they may then become targets of violence", he says.

Moore's team hopes to use the model to examine how moving street furniture or increasing pedestrianisation might ease congestion around nightspots. The model could also be used to look at the effect of a new bar or fast-food outlet opening in a crowded city centre. Linda Geddes ●