

# Z

## Zugzwang

Zugzwang (n): position in which it is disadvantageous to have to move. budge (vi): move from one's place. zeal (n): intense ardour in pursuit of some end.

- The District Council invites comments on a planning application to change a nursery garden to a nursing home alongside a major river.
- The threshold water level at which a flood warning is issued has been reached but heavy rainfall is thought to have ceased three hours ago.
- A member of the public is asking whether the Environment Agency's flood-risk map takes account of [dams](#) in the catchment.
- A cut in funding requires pruning of the gauging network or leaving [measurements](#) unprocessed.
- The media are running with a story that new regulations about farmyard waste have led to *more* not fewer river-pollution incidents.

When a problem arises, the researcher can sit on the fence and decline to comment. If pressed, he can come up with some [weasel words](#) about insufficient data, or profess her expert knowledge about [uncertainty](#). The practitioner rarely has this luxury.

### What a drag

A [developer](#) wants to build an 11-storey tower in Bolton, above a culverted section of the River Croal. The culvert is believed to be 100-150 years old. He bad-mouths the Environment Agency for insisting on a 7-metre easement on either side of the culvert. An aeronautical friend has streamlined the cross-sections of the support columns that will penetrate the culvert. He asserts that the columns will have little or no effect on the culvert flow capacity. Why won't the EA budge?

How do you deal with such professional ignorance of the purpose and power of rivers, and of the intrinsic limitations of culverts?

Embankment of former mineral railway



Cut to reduce volume of water that it might inadvertently impound



Seven men are still standing. White, playing up the board, has two pawns on the 7<sup>th</sup> rank, i.e. one square short of promotion. Were it White to move, Black would escape with a draw. There is nothing better than rook takes rook, which is stalemate.

But it is Black to move. *Zugzwang!* Rook takes rook, followed by pawn takes rook, isn't quite the stalemate it appears. White gives checkmate on the next move.

### Bridges, budgets, disciplines and faculties

The applied scientist *bridges* between research and practice. Though a useful aptitude, this ought not to be a defining responsibility. Those academics not inclined to ask Jim Dixon's (see [m](#)) question: *What finally is the practical application of all this?* should be slow to advise Government on the distribution of budgets to applied research.

It is great when, leading by example, the older scientist encourages the younger scientist to question and justify their research. The success of doctoral studies is as much in the faculties developed as in the Faculties supported. Useful attributes include:

- Recognising over-statement;
- Picking winners from the literature;
- Seeing an aim through, no matter how hard;
- Reflecting on why an anticipated advance did not materialise;
- Finding a new perspective on a problem.

The applied researcher will also remember to list those related problems still requiring attention.

Language is of fundamental importance. [Jargon](#) can capture a precise meaning. But too often it excludes outsiders from asking awkward questions.

The inescapable conclusion is that researcher and practitioner must work together. This matters more in hydrology than in most fields because water stretches across so very many sciences. If we are divided by primary discipline, we need to be joined by present purpose. But don't expect things to run smoothly if one partner is [motivated](#) to solve important problems, while the other sees the cooperation as a marriage of convenience to screw the next euro from Government to further [furrow](#) a favoured field: with zeal but never quite a final end.

Academic staff rather enjoy coming to conclusions, but they don't like coming to decisions at all.

Lord Annan, cited in *Observer*, 6 Feb 1981

"Time for bed", said Zebedee. Eric Thompson, *Magic Roundabout*, BBC TV (orig. Serge Danot's *Le Manège Enchanté*)