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PSYCHOLOGY

The subtle influence of where people vote

Can the polling location where people vote affect how they vote? During voting in U.S. elections, the right to free speech is temporarily and selectively curtailed: signage and amplified sounds are



Prohibited near polling locations, which include schools and churches. The government justifies the restrictions by citing the greater importance of enabling citizens to vote freely. But, as Jonah Berger *et al.* report, where people vote—i.e., the polling location itself—can influence the choices they make. The authors examined the 2000 Arizona general election, in which a ballot initiative proposed raising the state sales tax from 5.0% to 5.6% to increase education funding. After controlling for political preferences, the authors found that citizens were significantly more likely to support the initiative if they voted in a school. In a subsequent experiment, subjects exposed to images of schools, such as lockers and classrooms, were more likely to support a hypothetical tax increase to fund public schools than were subjects exposed to images of office buildings. Environmental stimuli in a location can “prime” memory, activating societal norms or features of a person’s self-concept and thus influencing their choices and actions, according to the authors. — K.M.

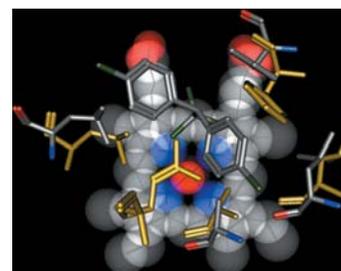
“Contextual priming: Where people vote affects how they vote” by Jonah Berger, Marc Meredith, and S. Christian Wheeler (see pages 8846–8849)

BIOCHEMISTRY

The secret of DDT-resistant mosquitoes

Since the introduction of DDT as an insecticide, several strains of mosquito have evolved and developed resistance to the compound. In resistant insects, DNA microarray studies have pinpointed a number of upregulated cytochrome P450 genes. Ting-Lan Chiu *et al.*

al. modeled the catalytic site geometries of two *Anopheles gambiae* P450s that appear strongly linked to DDT resistance, finding that one, CYP6Z1, seems to have a site geometry well matched to DDT. *In vitro* metabolic experiments confirmed the modeling results. The authors report that both CYP6Z1 and CYP6Z2 P450s are overexpressed in resistant mosquitoes collected in West and East Africa, as evidenced by homology models based on sequence alignments with CYP3A4 (the major drug-metabolizing P450 in humans). The authors used the MOE software suite to optimize these models and to dock two insecticide molecules (DDT and carbaryl) and a plant toxin (xanthotoxin) within the catalytic cavities. Based on these predictive models, the protein backbones appear virtually identical, but three extended side chains in CYP6Z2 make the DDT binding energy prohibitively high. Chiu *et al.* conclude that increased CYP6Z1 expression likely enables DDT resistance. These structural predictions should facilitate the search for CYP6Z1 inhibitors that can synergize with current insecticides, making them more effective, the authors say. — K.M.



The *Anopheles gambiae* CYP6Z1 catalytic site can metabolize DDT.

“Comparative molecular modeling of *Anopheles gambiae* CYP6Z1, a mosquito P450 capable of metabolizing DDT” by Ting-Lan Chiu, Zhimou Wen, Sanjeeva G. Rupasinghe, and Mary A. Schuler (see pages 8855–8860)

MEDICAL SCIENCES

Picking your cancer poison

Topoisomerase poisons target topoisomerase enzymes and interfere with the unwinding of DNA for transcription; for these reasons, they are widely used and effective chemotherapeutic agents. Tumors, however, are often insensitive to, or become resistant to, these drugs, and the genetic basis for this resistance is unclear. To identify genetic factors involved in response to doxorubicin (a front-line chemotherapy agent that targets topoisomerase 2), Darren Burgess *et al.* screened a library of shRNAs—molecules that knock down expression of target