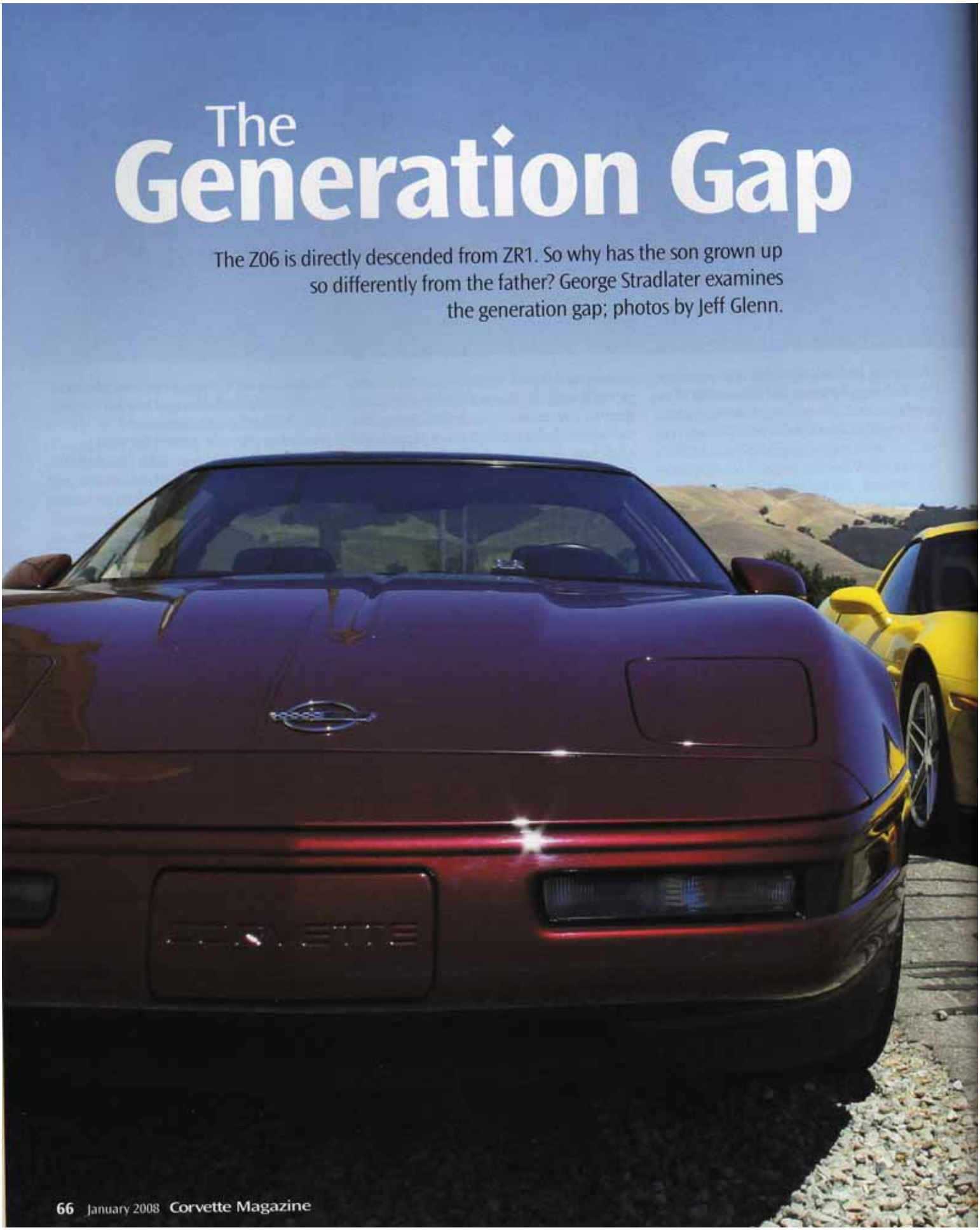
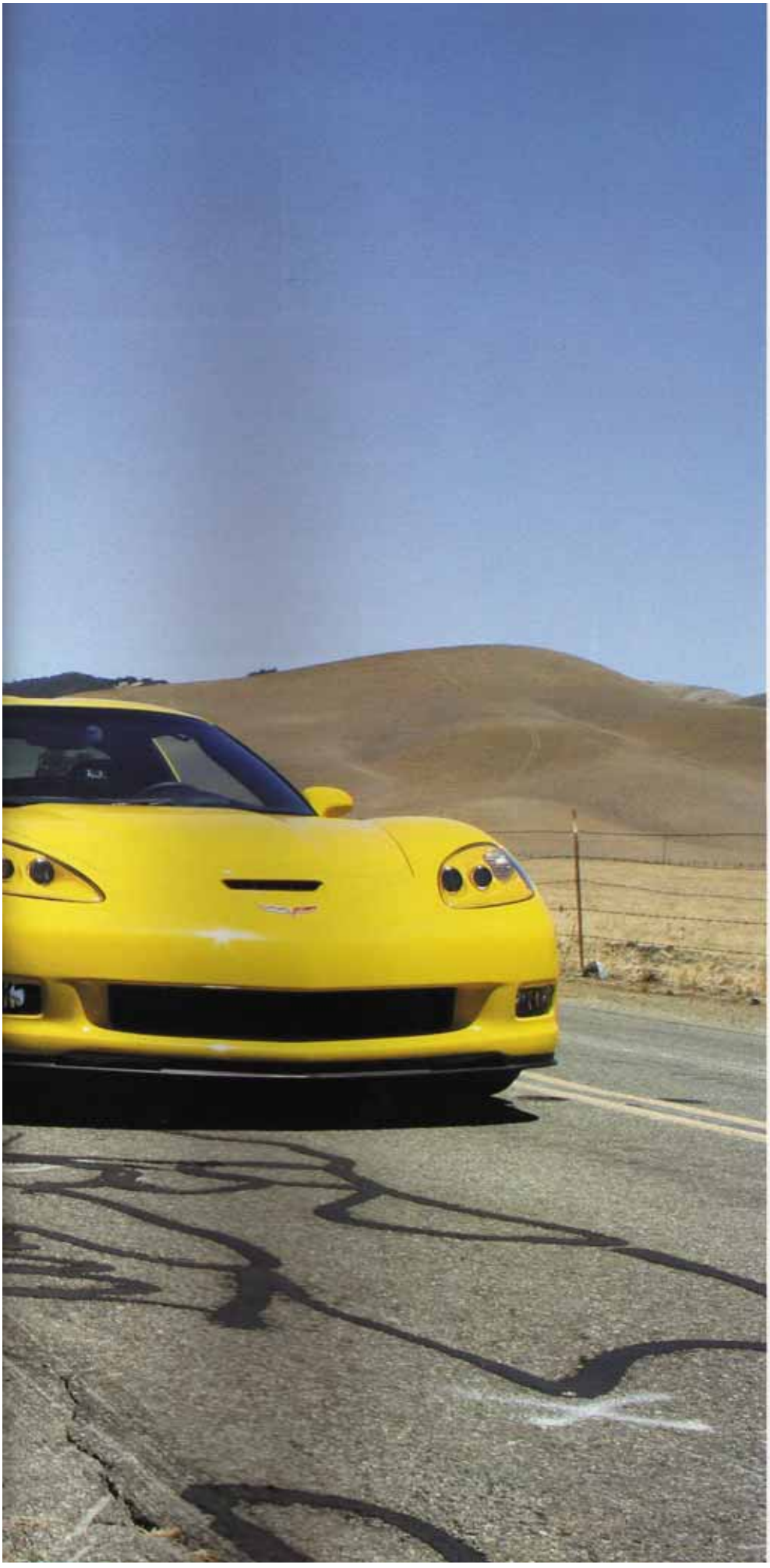
The Generation Gap

The Z06 is directly descended from ZR1. So why has the son grown up so differently from the father? George Stradlater examines the generation gap; photos by Jeff Glenn.





I don't know why I thought these two cars would be similar. Sure, both are Corvettes, and both were their respective generation's top-of-the-line halo models. But all cars evolve between generations, and that evolution tends to be shaped by unpredictable conditions and unforeseen developments.

The Corvette Z06 being produced now—a superlight, seven-liter Grand Tourer with deceptively simple internals—is hardly the machine that Corvette fans would've expected to see 25 years ago. A quarter-century ago, the ultimate expression of the Corvette idea—a machine that its own chief engineer, David McLellan, called "Corvette, only more so"—was a study in jewel-like complexity called ZR1. McLellan went on to explain this special-edition Corvette as "...a statement that we can do things today that no one even dreamed could be done ten or 20 years ago. The technology inherent in the ZR1 isn't there just to go fast; it's there to provide a level of total vehicle performance that purchasers...desire."

True to his word, the heart and soul of the ZR1 package—its LT5 engine—was a highly exotic precision machine. Built of lightweight aluminum at a time when American carmakers much preferred iron, the wet-sleeve, open-deck block used Nikasil-plated liners on the inside and racing-style stability ribs on the surface. The coolant and oil pathways were determined by efficiency and performance, not (as with most engines) manufacturing ease. A forged crank and rods carried light-alloy pistons on fully floating wristpins. The crankshaft, damper, and flywheel were balanced together as a common unit, as were the reciprocating assemblies. Long roller chains drove two cams per cylinder bank, and each intake cam featured two sets of differently shaped lobes. The four-valve-per-cylinder heads carried centrally located sparkplugs inside a carefully tailored cloverleaf relief, the shape chosen to swirl the incoming charge for the fastest and most complete combustion.

Most exotic of all was the LT5's dual-profile intake architecture. Today, in an era when variable cam timing and valve actuation are commonplace, it's hard to recall how daring this dual-mode scheme was. Not only were the adjacent lobes on each intake cam different, those lobes acted on different-sized valves. The "primary" lobes drove smallish tappets in a conservative profile, resulting in docile low-speed behavior and nice low-end torque. The more radically ground "secondary" lobes worked on bigger valves, giving the engine the high-stepping, high-horsepower punch of a European exotic. In typical driving, the ZR1 started off using its primaries only, then transitioned into the secondaries about halfway up its rev range. The goal was to create one engine with the best characteristics of a tradi-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CORVETTE
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UNLEADED
FUEL ONLY
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