

## A modest inquiry into the value of a feeling



# BMW 318i vs. Toyota Celica GT-S



What we will attempt to resolve here is one of the world's oldest questions: quality versus price. When you plunk down your hard-earned for designer jeans, are you really getting significantly more value than if you had bought regular old Levi's? What esoteric quality commands a \$100-bill pair of Pierre Cardin leather gloves, when Sears sells basically the same item for a \$20? Purists will wax eloquent about the choice of materials (unborn calfskin from the equatorial region of the third moon of Jupiter) and heap relentless praise on the craftsman who has lovingly poured his/her sweat/blood/tears—not to mention a 30-year apprenticeship—into hand-sewing this particular item. We

by Ron Grable

PHOTOGRAPHY BY RICH COX AND PAUL MARTINEZ

are constantly lectured from every quarter on the importance of being chic or having The Look, as if these abstract values justify the extra cost of the high-zoot item in question.

It isn't too surprising that these same philosophical considerations frequently apply in comparing cars. Certainly a Chevrolet Chevette diesel will transport you from Los Angeles to San Francisco at approximately the legal speed limit. The same journey in a Mercedes 500SEL would be an experience of another dimension entirely—yet there are many commonalities between the two vehicles. They have four

wheels, carry the same number of passengers, and would complete the trip in roughly the same elapsed time (considering the speed limits). In any comparison of two such extreme examples, the qualities and limitations would be easy to differentiate, and one could clearly say, "This is what you get for your extra money."

However, in the case of our test comparison between the BMW 318i and Toyota Celica GT-S, the similarities make it more difficult to resolve the question of value. Functionally the cars are almost identical. Both have front engines (4-cylinder/OHC/iron block/aluminum heads/L-Jetronic injection), rear drive, independent suspension including MacPherson struts up front, front disc/rear drum brake systems, and the same overall length. Evaluations and/

# ROAD TEST DATA



## BMW 318i

### ▣ SPECIFICATIONS

#### GENERAL

Vehicle mfr.	Bayerische Motoren Werke AG, Munich, Federal Republic of Germany
Vehicle importer	BMW of North America, Montvale, N.J.
Body type	5-pass., 2-door sedan
Drive system	Front engine, rear drive
Base price	\$16,430
Major options on test car	AM/FM/cassette stereo, sunroof
Price as tested	\$17,650

#### ENGINE

Type	L-4, liquid cooled, cast iron block, cast aluminum head
Displacement	1766 cc (108.0 cu in.)
Bore & stroke	89.0 x 71.0 mm (3.50 x 2.80 in.)
Compression ratio	9.3:1
Induction system	Bosch L-Jetronic fuel
Valvetrain	OHC
Crankshaft	Forged, 5 main bearings
Max. engine speed	6000 rpm
Max. power (SAE net)	101 hp @ 5800 rpm
Max. torque (SAE net)	103 lb-ft @ 4500 rpm
Emission control	3-way catalyst, oxygen sensor
Recommended fuel	91 RON unleaded

#### DRIVETRAIN

Transmission	5-sp. man.
Transmission ratios	(1st) 3.72:1
	(2nd) 2.02:1
	(3rd) 1.32:1
	(4th) 1.00:1
	(5th) 0.81:1
Axle ratio	3.64:1
Final drive ratio	2.95:1

#### CAPACITIES

Crankcase	4.3 L (4.5 qt)
Cooling system	7.0 L (7.4 qt)
Fuel tank	54.9 L (14.5 gal)
Luggage	424.8 L (15.0 cu ft)

#### SUSPENSION

Front	Independent, MacPherson struts, coil springs, anti-roll bar
Rear	Independent, semi trailing arms, coil springs, hydraulic shocks

#### STEERING

Type	Rack and pinion, power assist
Ratio	20.5:1
Turns (lock to lock)	4.0

#### BRAKES

Front	10.2-in. discs, power assist
Rear	9.0-in. drums

#### WHEELS AND TIRES

Wheel size	14 x 6 in.
Wheel type	Cast aluminum
Tire size	195/60HR14
Tire mfr. & model	Goodyear NCT
Tire construction	Steel-belted radial

#### DIMENSIONS

Curb weight	1071 kg (2360 lb)
Weight distribution (%)	F/R 57/43
Wheelbase	2570 mm (101.2 in.)
Overall length	4490 mm (176.8 in.)
Overall width	1646 mm (64.8 in.)
Overall height	1407 mm (54.3 in.)
Track, F/R	1407/1414 mm (55.4/55.7 in.)
Min. ground clearance	134 mm (5.3 in.)

#### CALCULATED DATA

Power-to-weight ratio	23.37 lb/hp
Drag coefficient	0.38

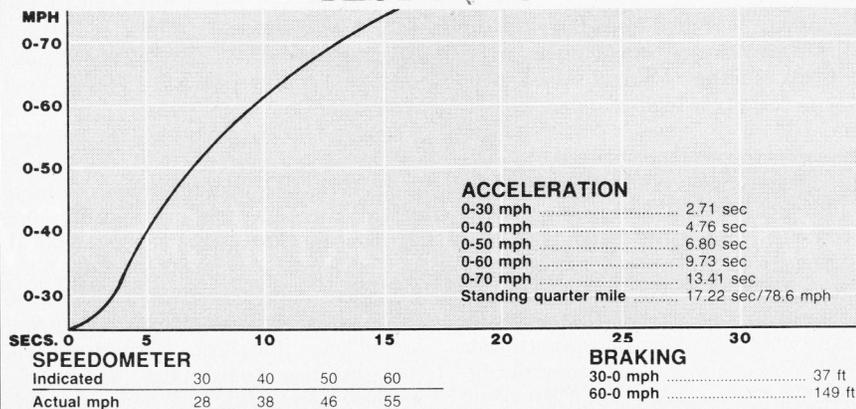
#### SKIDPAD

Lateral acceleration	0.77 g
----------------------	--------

#### FUEL ECONOMY (mpg)

EPA rating, city/hwy.	27/38
Test average	26.7

### ▣ TEST RESULTS



or comparisons based on pure performance are a simple matter of testing the cars, taking the data, and letting the numbers speak for themselves. We have done this, of course, and will discuss this aspect of these cars later in the story.

Yet, performance is just one aspect of a comparison such as this. When a vehicle is being operated at or near its limits, the driver's concentration is centered outside the car, with the vehicle becoming more an extension of his will. By far, the largest portion of the time a person spends with his car has nothing to do with ultimate performance limits; it is instead a time when the vehicle and driver communicate. Perceptions of comfort, convenience, quality, ergonomics, and basic value are formed during these "low-performance" periods.

To find out what the Beemer offers for its significantly higher (\$5621) price tag, we lived with the two cars for a few weeks beyond the time when our standard instrumented testing procedures were completed.

The BMW is officially a 2-door, 5-passenger sedan, but the only fitting descriptive term for three people in the rear would





## Functionally, the cars are almost identical, and the similarities complicate the question of value

bling a dentist's chair. For anyone under 6 ft tall, the seat position works out well, and the seats themselves are comfortable in the standard German style—firm but not hard. However, as part of a serious driving environment, they rate behind the Toyota offerings.

Ergonomically, the cars are both excellent. The BMW's pedal arrangements are better suited for the classic "heel-and-toe," and its smaller-diameter steering wheel has a better feel. The Celica's adjustable steering wheel (standard equipment in the GT-S package) is a nice feature that allows further fine tuning of the driving position. The wiper and cruise-control switches are located on the instrument panel of the Toyota and require a little getting used to at first, but since they can be operated without removing your hands from the wheel, the layout soon seems quite natural.

Since our test BMW was not equipped with some of the options on the Toyota, we will not consider them individually except to say that if the Beemer were brought up

to the same option level as the Celica (where possible), it would add approximately \$400 to the BMW price tag. However, any discussion of the options would be incomplete without mention of the Toyota's dynamite sound system. The sound quality is excellent, the graphic equalizer gives you something to do on those long, boring interstates, and the audio level indicators are better, from an entertainment point of view, than an onboard TV.

If we seem to favor the Toyota at this point in the discussion, it's because in terms of absolute hardware, it offers more than the BMW—for significantly less money. High-zoot seats, graphic equalizer goodies, power windows, automatic locks, remote mirror adjust, and cruise control are useable, convenient features. Purists will say who needs them? We say we do (did you ever try to adjust the right rear-view mirror manually, while flying down the freeway at 70 mph?).

So what does the 318i offer for the extra

money? Prestige? Possibly. Image? Probably. Mystique? Certainly. Performance? Absolutely.

With the exception of performance, all these criteria are esoteric and subjective, but very much a part of the Beemer mystique (and selling price). Prestige has to do with the perception of the vehicle by the motoring public, and certainly the average motorist perceives the BMW marque fairly near the top of the heap. Image and mystique are related to the whole of the Teutonic reputation for engineering excellence and execution, and the Beemer reflects these qualities—doors close with a nice, solid clunk, gear changes are crisp as cold celery, and the steering as precise as a dial indicator.

The Celica GT-S does all the same things, but it doesn't "feel" the same. The Japanese are very, very close on this score, and soon they will be able to manufacture "feel" better than anyone else—and sell it cheaper. But until that time, there is still a difference. The 2.4-liter Toyota engine and the 1.8-liter BMW make almost identical power, but the German motor is a sheer joy—glass smooth, and just as happy at 6000 rpm as it is at 4000. The Japanese 4-cylinder is not nearly as smooth, with a pronounced medium-frequency vibration that makes the gear lever feel like a spoon caught in a blender. Under hard acceleration, the Celica engine struggles up to the redline with a distinctly labored, out-of-breath feeling. In the same circumstances, the Beemer engine simply devours the tachometer, racing for the redline. Look at the comparative performance results, and the differences are very small; but the Beemer does exude that overpowering sensation of doing exactly what it was designed for—and being very happy doing it.

Weight plays the major role in the performance comparison of these two cars, since the BMW enjoys almost a 400-lb advantage over its Japanese counterpart. Excess weight is a penalty in every aspect of performance—accelerating, braking, and cornering. Energy is required to accelerate every extra pound (the Toyota carries 2.33 more pounds for each of its horsepower), the brakes are required to dissipate more energy at every stop, and the extra weight means a higher cornering force at any given speed. At a cornering speed equal to 0.5 g, the centrifugal force on the Toyota would be 195 lb more than the BMW.

Acceleration times were also affected by the very tall Celica 1st gear, making it difficult to launch. The Beemer would come out of the hole with very controllable wheelspin, while the Celica would "bog" badly. The 0-60 advantage of the 318i—a full second—would be reduced significantly if the GT-S had a lower 1st gear.



## The BMW exudes a sensation of doing exactly what it was designed for—and being happy doing it

The skidpad test is a measure of steady-state cornering capability, and mainly rewards roll stiffness, weight distribution, and good tires. The Toyota was significantly faster due in part to its 225/60 tires and 7-in. wheels, combined with less understeer. The BMW speed around the pad was definitely limited by its terminal understeer, while it was possible to balance the Celica nicely with the throttle.

Perhaps the most illuminating experience with the two cars was the back-to-back drives on the road race course. As expected, the 318i lapped faster, due to its superior power-to-weight ratio. Unexpectedly, the Celica was easier to drive at the limit. The Toyota suspension is well balanced in terms of the front/rear roll stiffness and brake bias, allowing the car to be driven very deeply into corners with complete confidence. The GT-S mildly understeers entering the corner, so the dread “end-

swapping” is not a problem, and at the apex of the corner a little throttle dials up a neutral attitude until the car is aimed in the proper direction. Then it's down with the right foot and away you go.

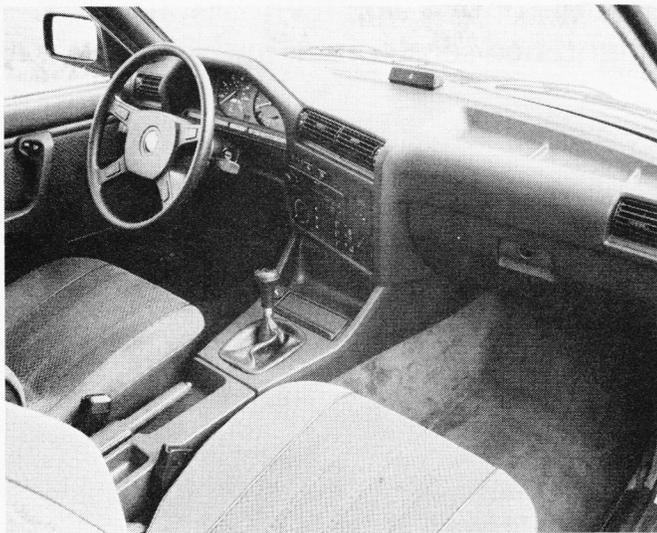
The 318i exhibits an alarming degree of indecision in the same circumstances. Pushed deep into a corner, the rear end comes around quite easily, and driver pulse rate goes up with the amount of opposite lock required to rescue everything. Once everything is all gathered up, considerable speed has been scrubbed off, but the wonderful engine hauls you down to the next corner very quickly indeed, albeit with a little too much corner-exit understeer for our liking. The secret to a fast cornering speed in the BMW is to reduce corner entry speeds slightly in anticipation of the closed-throttle oversteer, make sure the car is pointed correctly at the apex, and then exit under full throttle to take advan-

tage of the great acceleration.

Both Beemer and Celica are as stable as an aircraft carrier, in a straight line at high speeds, with linear steering response and predictable manners. The brakes are exemplary on both, with very little fade, good directional stability, and nice, solid pedals. The GT-S stops as well as the 318i—in spite of its extra weight—due to the superior tire/wheel package on the Toyota.

So where does this leave us in terms of the original question? We set out to decide what a prospective buyer gets for the premium price tag on the BMW 318i. It should be obvious that in absolute performance—seconds per dollar, or horsepower per peso—not a great deal. The Toyota Celica GT-S is almost the equal of the BMW 318i.

Webster's Collegiate defines “almost” as: very nearly, but not exactly or entirely. Our feelings exactly or entirely. 



BMW 318i



Toyota Celica GT-S

