

# Sid Meier's Civilization Evolves

by Alan Emrich

Engineers, mathematicians, programmers, handymen... there are certain kinds of people who just *love* to tinker with things. Sid Meier is just such a designer. Each morning during the development of *Sid Meier's Civilization*, he would enter the **Microprose** building and hand a new version of the game to Bruce Shelly. After Bruce, the playtesters glommed onto the new code. By the end of the day, they would have suggestions and comments, and the next day Sid would produce yet another updated version of the game in response to these suggestions.

Still, a handful of in-house playtesters can only do so much in the development time allotted. When a game is released, the game-buying public becomes, *de facto*, a vast army of tens of thousands of playtesters. Each individual consumer might have suggestions or comments, and some might even devise a perfect plan or counter to a computer program's artificial intelligence not previously thought of by the smaller, in-house playtest group.

So it was when "a room full of computer scientists, mathematicians and cognitive psychologists" got together and dissected *Civilization* as a puzzle to be solved, rather than a game to be played (of course, they add, "...these are the same people who think graph theory is fun.") Their findings have been posted over many lively strings of information on *CompuServe* and have piqued the interests of designer Sid Meier. They have found two optimal plans for running roughshod over the AI in *Civilization*, to which Sid Meier has responded with yet another new version of the game (taking the opportunity to fine-tune *even more* little things along the way).

## "They Create Desolation and Call it 'Peace.'"

— Tacitus' Agricola

Behold, Gus Smedstad [CompuServe address: 71777,2716], the first of a cast of characters who would influence *CGW's* new #1 rated game, *Sid Meier's Civilization*, and his theory that the way to win at the Emperor level is to continually expand at the expense of the computer's civilizations. The logic is that, since the computer players get such a large advantage in making discoveries, playing a peaceful technology race game is "a sure recipe for disaster." While suggesting staying with Despotism for as long as possible because of its military advantages, Gus' approach was still somewhat "civilized" inasmuch as he advocated building city improvements and wonders of the world, but he still pushed for sails early so that every computer player could be interfered with as rapidly as possible.

Enter Greg Bezoff [CompuServe address:



72711,2616], who took this moderate Mongol maxim to its logical extreme, becoming the "total Mongol strategy," which works, in detail, thusly:

Players limit their city sizes to two or (if garrisoned) three so that no civic improvements need be built to keep the citizens content and thus cause the need for a tax base to maintain them. ("Temples and suchlike don't help me to rape, pillage and loot.") Build only barracks (since they have no maintenance cost) and set the tax and luxury rates to 0% so that every trade unit goes into light bulbs. Concentrate research on The Wheel, Mathematics and Navigation (*id est*, Chariots, Catapults and Sail units). Chariots are the best military units until armor shows up, so deploy them by the swarm.

Next, grow little cities like weeds, raising them to size three (where their growth can be frozen by working coal mines, oil sites, etc. that do not generate any surplus food or by creating a specialist — particularly the very useful scientist) and have them continually contribute their shield production for the aforementioned military units (made veterans by the no-maintenance-cost barracks improvements built). Thus, with the total Mongol war effort, players who never leave Despotism can usually conquer the world by the time Christ would have been born.

## Reductio ad Absurdum (Reduction to Absurdity)

While the total Mongol strategy was being debated, a new theory of economic optimization was presented by Peter Delaney [CompuServe address: 73750,3667] and his fellow students at Carnegie Mellon University, Joe Beck and Jeff Duprey. Their collaborative effort, with Joe at the helm, produced a revolutionary game concept called the *parallela theory*.

Derived from concepts in parallel programming and parallel distributed processing (for which the university's Dr. McClelland is a prime mover), the theory states that

many small processing units working in concert with a system for message passing can often surpass the effectiveness of one very large processing unit. In practical *Civilization* terms, this means that a player with several small cities has an advantage over one with a few large cities.

For example, in the pure form, if there were no limit to the number of cities which could be on the map (there is, by the way), one could create a 30 x 30 square of size one cities. These would produce 1800 light bulbs *per turn* through scientists alone (if the player creates that elite citizen right away in each of those cities). This is *in addition* to any light bulbs generated by the player through trade!

Since every city has a "free square" with which it works another square (or can be converted into an elite citizen), a size one city "works" two squares (the city square plus one other). Now, consider that a size ten city works eleven squares (a size fifteen works sixteen squares, etc.), and one can see the efficiency of having many size one cities working two squares each. In other words, size one cities are 100% efficient, with production efficiency decreasing as city size grows.

Another sub-plan of this is the "virus" approach of building as many cities as possible. This will ensure that, once the ceiling in the game is hit, computer players will not be able to build any more cities. Again, this is taking the matter *ad absurdum* (to absurdity), but is an effective mathematical counter to the game's programmed limitations. However, size one cities are vulnerable to enemy conquest. Thus, there was a need for defense, particularly from early barbarian raids. Naturally, *parallela* and the total Mongol strategy seemed made for each other, and a perfect match for optimal play was born.

## Novus Ordo Seclorum (A New Order of the Ages [is Created])

This, the motto on the great seal of the United States, might also serve well as Sid Meier's motto for game development (particularly in the case of *Sid Meier's Civilization*). In response to these mathematical stratagems, Sid is putting the finishing touches on a 3.0 version of *Sid Meier's Civilization*. Making the best use of such resourceful playtesters as Mr. Bezoff, Mr. Smedstad and the boys of CMU, prototypes have been posted for public use in the **Microprose** library on CompuServe, with constant feedback, therefore, coming in to Sid via e-mail. Perhaps with the new motto of "Sic Semper Tyrannis," the following changes are being made to the initial release version of *Civilization* as taken from the extended READ.ME file included with this latest version:

23. Cities must have a population base of five or more to support taxman or scientist specialists.

24. Under a Despotic government, citizen unhappiness will increase with the number of cities controlled. This may lead to "very unhappy" citizens (recognizable by their red shirts) who must first be converted to normal unhappy citizens before they can become content. This effect occurs to a lesser degree under other government types as well.

25. A maximum of three units per city may be used to impose martial law (*id est*, convert unhappy citizens to content ones).

26. Cities may be renamed at any time. Click on the new *rename* box or press the "r" key on the city status screen.

27. Transport units no longer contribute to city unhappiness under The Republic/Democracy.

28. The maintenance cost of Barracks has been changed to 1/2/3 coins at the Prince and King difficulty levels, and 2/3/4 coins at the Emperor level.

Additionally, a few bugs are being remedied. These include the compatibility problem with certain EGA graphic cards, the "never-ending game" bug, screen update re-writes and other small annoyances.

## Mutatis Mutandis (Things Having Been Changed That Had to be Changed)

The practical upshot of these changes to the average player of *Sid Meier's Civilization* will be minor. While changing city names adds a classy touch and taking away the "sad face" that transports produce makes sense, most of the other changes are quite specifically designed to counter the aforementioned perfect plans for besting the game's programming.

The increased cost for barracks, however, is significant, particularly since computer players do not bear this added burden (chalk up another advantage for the computer players at higher difficulty levels). Veteran units, therefore, will become more precious and the costs of squandering them must be weighed more carefully by human players. The burden of a "military tradition," as simulated by barracks, to support one's own "Mongol strategy" might prove economically prohibitive over the long run to Princes, Kings and (especially) Emperors. While a total Mongol strategy remains viable, its success has been reduced from a virtual certainty to merely probable, depending on the circumstances in play (which is as it should be).

The number of cities that can be managed with increasing citizen unhappiness now has set limits and specific consequences. No longer can players build virus-like hordes



of tiny cities which contentedly worked for the common good. Below is a table indicating the number of cities which a given type of government can support at a specified difficulty level and still continue to use the game's current happiness formula.

When a player's empire grows beyond the size indicated by the number below, each additional city causes a fraction of the empire to be plagued by an additional unhappy person. For example, a despotic government at the Emperor level will function normally up to six cities (for the mathematicians, then,  $X = 6$  in this example). When the seventh one is added,  $1/6$  (or  $1/X$ ) of the empire's cities will have a citizen take on a worse attitude (go from content to unhappy or, when no content citizens are left, from unhappy to the red-shirted "very unhappy" status). The second city added above this ceiling will cause  $2/X$  (or  $1/3$ , in this example) of the cities in the empire to feel the strain. Thus, by the 12th city ( $2X$  the safe limit of six), every city will have an additional citizen made unhappy. Beginning with the 13th city ( $2X + 1$ ),  $1/6$  ( $1/X$ ) of the empire's cities will get a second citizen made unhappy gratis, and so on for every addition to, and multiple of, the base happiness number given in the table.

All of this can be checked by simply opening up a city's display, clicking on the *happy* button and looking at the first line of the citizen roster. If this line of citizens does *not* show the first few (2 at Emperor level, 3 at King, 4 at Prince, 5 at Warlord and 6 at Chieftain) citizens as content, then they've been hit by this new "imperial discontent" formula. Of course, another way to find out is when carefully balanced populations suddenly riot, indicating that something has increased unhappiness there.

## Imperial Discontent Table

Government Type	Difficulty Levels				
	Chieftain	Warlord	Prince	King	Emperor
Anarchy & Despotism	14	12	10	8	6
Monarchy & Communism	21	18	15	12	9
The Republic & Democracy	28	24	20	16	12

Numbers in the body of the chart indicate the number of cities owned before additional unhappiness begins.

When this occurs, be sure to hit the *happy* button in order to fully understand why.

## Additional Playing Tips and Techniques

Knocking out the usual plethora of defending units in a computer player's cities en route to conquest can be a time-consuming and expensive gamble. After all, winning battle after battle against a pile of (usually) fortified urban defenders can cost several attacking units in the process. The solution: The "20-square siege technique."

Since every government type (save Despotism) requires shields for military units' maintenance, the problem becomes how to reduce the shields a city produces and thus eliminate defending units without firing a shot by "starving them out" through a lack of support. Since every square in a city's radius which is occupied by an enemy unit cannot produce for that city, one must simply place a unit on every *land* square within the besieged city's radius that can produce any shields. This might require up to twenty units to cover every possible square (it seldom does, particularly against coastal cities), but diplomats and caravan units work as well as soldiers for this purpose. Thus, the city will be reduced to a number of units which only the shields generated in the city square itself can produce, Q.E.D.

Another frustrating element is maneuvering through territory developed by another player while at peace with them. This cannot be done without breaking the peace, which is made impossible for those whose governments include a Senate (specifically, The Republic and Democracy). However, there is a way through this rural roadblock. Enemy improved squares can be entered by diplomats and caravan units without hindrance, even while under the conditions of a peace treaty with another player. Simply place one of these unit types in an improved enemy square, and then other friendly military units may stack there without violating the peace terms.

## Deus ex Machina (A God out of a Machine)

The world continues to evolve. This is also the case in the many imagined worlds enjoyed by players of *Sid Meier's Civilization*. Here was presented to the reader some perfect plans for defeating the limitations of the game's programming and an announcement of a new version of the game that corrects not only these, but

other minor problems in the game as well. The 2.0 version of *Sid Meier's Civilization* can be obtained by calling the Microprose BBS at (410) 785-1841 (2400, 8/N/1), or in the appropriate libraries on either CompuServe or GEnie. Alternately, persons can contact Microprose Customer Service directly and request this latest version of the game. **cgw**