Nonabstinent alcoholics and social drinkers were
given either alcoholic (vodka and tonic) or nonal-
coholic beverages (tonic only) in a taste-rating
task. In each condition, half the subjects expected
to drink alcohol and half tonic. Consumption in-
creased only when subjects expected alcohol, re-
gardless of actual beverage content. [The Social
Sciences Citation Index© (SSCI®) indicates that this
paper has been cited in over 130 publications
since 1973.]

G. Alan Marlatt
Department of Psychology
Addictive Behaviors Research Center
University of Washington
Seattle, WA 98195

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According to the disease model of alco-
holism first proposed by Jellinek, loss of
control drinking (the apparent inability to
voluntarily control drinking after consuming
any alcohol) is considered a prime symptom of
“gamma-type” (e.g., binge drinking) alco-
holism. Adherents of the disease model
posit that the alcoholic’s ingestion of any al-
cohol activates an underlying addictive
 craving for more alcohol that is impossible
to resist. According to this approach, it is im-
possible for alcoholics to ever control their
drinking.

An alternative hypothesis, posed by be-
havioral psychologists, is that excessive con-
sumption is determined by external rein-
forcement contingencies. Alcohol provides
a powerful reward: it provides both positive
(euphoric high) and negative (escape from
stress) reinforcement. Perhaps the high rate
of drinking in alcoholics is mediated more
by the psychological expectancy of rein-
forcement (possibly mediated by classical
conditioning) than by the physiological ef-
fects of alcohol.

While we were assistant professors of psy-
chology at the University of Wisconsin in
1971, John Reid and I planned a study to test
these alternative hypotheses. Barbara Dem-
ning was the experimenter as part of her
master’s research. To separate the psycho-
logical effects of alcohol from the expectan-
cy factors, we decided to use a placebo
design. We soon discovered a major flaw in
the standard “double-blind” placebo design.
Although it successfully controls for experi-
menter bias, this design does not provide an
adequate control for subject expectancies.
Since the subject expects to receive the
“real drug” in both the drug and placebo
conditions, there is no way to assess the ef-
fects of the drug alone, in the absence of ex-
pecting to receive it. To remedy this, we
added a “reverse placebo” condition in
which alcohol is given when the subject ex-
pects to receive a nonalcoholic beverage.
This yields a four-group design (2 x 2 fac-
torial): expect alcohol/receive alcohol, ex-
pect alcohol/receive placebo, expect pla-
cebo/receive alcohol, and expect place-
bo/receive placebo. As we later discovered,
a similar design had been described in the
literature, but had yet to be applied using
alcohol as the active drug. Our design, now
known as the “balanced placebo design,” is
one reason that the article has been fre-
cently cited.

We spent many a pleasant evening experi-
menting with different alcoholic beverages
until we came up with a combination that
would work for our study. When served
chilled vodka and tonic (1:5 ratio), our pilot
subjects could not detect the presence or
absence of vodka on better than a chance
basis. In the actual study, subjects were led
to believe that they would be sampling
either vodka and tonic or tonic water only
in a taste-rating task. The results showed
that for both alcoholics and social drinkers,
subjects who expected to sample a drink con-
taining alcohol drank almost twice as much
beverage as those who expected to receive
only tonic, regardless of the actual presence
or absence of vodka in the drink. The find-
ings provided a challenge to the disease-
model theory of loss of control and opened
the door to cognitive-behavioral treatment
programs for alcoholism designed to modify
expectancies and to teach behavioral coping
skills to prevent relapse.1,2

(Cited 25 times.)
(Cited 60 times.)