The Value of Contributing Data to the National Cooperator Database

Greg Andersen, Managing Partner

Seagull Bay Dairy, Andersen Dairy & WinStar Dairy

Background

- Managing Partner
  - Seagull Bay – 1980
  - Andersen Dairy – 2005
  - WinStar Dairy – 2022
- Milk in parallel and rotary parlors along with robots
- Milk test 8 times per year and classify 1 or 2 times per year

p.c. The Bullvine

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Why milk testing & data contribution

1. Milk weights, component percentages, and somatic cell count values are critical for making economically informed cow management decisions.

2. Genetic evaluations provide vital information to shape herd improvement. Genetic evaluations are built with accurate yield, fitness, and conformation phenotypes collected from participating farms.

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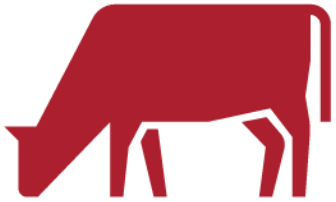
Economically Informed Cow Management Decisions

- Cow production records (milk, components, SCC) are useful when:

Culling

1st insemination/ last insemination



Mating

Dry off timing/ Dry off treatment

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A True Snapshot of Profitability

- Paid for pounds of components; not pounds of milk.
  - Milk weights alone are useful - especially in between test days. But component and SCC values provide a true snapshot of a cow's profitability.

- Last 3 test days, ranked cows by milk weights and by Energy Corrected Milk weights.
  - Made 10 cohorts (10 percentile groups)
  - 30% of cows will move out of their milk weight cohort (either up or down) when ECM values are compared to Milk only values.

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A True Snapshot of Profitability

- Making cow management decisions with milk weights alone likely leads to 30% errors.

	Fat	Protein
Bulk Tank	4.5%	3.5%
Individual Cows	3.3% - 6.0%	3.0% - 4.3%

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National evaluations; vital for improvement

- Areas of selection intensity in our herds:

Yield	Fitness	Utility	Future
• Increase Fat • Increase Protein	• Livability • Daughter Fertility • Udder Health	• Reduced Stature • Teat Length • Teat Placement • Moderate Dairy Form	• Hoof Health • Calf Wellness • Feed Efficiency

Semen purchases are an investment, not an expense.

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CDCB evaluations are all around us

%P	CFP	Milk	SCS	PL	LIV	CCR	ST	SR	TL	RT	MAST	SCE	NM$	TPI
0.11	223	1503	2.82	6.5	2.9	1.4	-0.22	-0.34	-0.35	0.12	2.6	2.3	1346	3277
0.15	195	681	2.64	7.3	3.9	2.7	-0.71	-1.13	-0.09	0.07	3.8	1.9	1395	3261
0.12	211	1312	2.66	6.4	2.3	0.5	-0.53	-0.61	0.1	0.2	3.2	1.6	1355	3257
0.1	190	1022	2.72	6.3	2.6	2.8	-0.38	-0.73	-0.33	-0.39	3.1	1.9	1206	3183
0.12	186	1036	2.67	7	2.2	0.7	-0.86	-0.97	-0.31	-0.36	2.7	1.6	1268	3128
0.11	191	1280	2.72	5	1.9	1.5	-0.35	-0.83	-0.23	-0.03	2.2	2.1	1151	3070
0.1	165	516	2.6	6.4	3.8	0.8	-0.53	-0.85	-0.24	-0.4	2.7	1.4	1153	3039
0.1	160	367	2.58	5.7	2.5	0.4	-0.18	-0.62	-0.17	0.37	3.4	1.1	1064	3011
0.12	182	790	2.92	4.4	2.1	0.2	-0.46	-0.96	-0.24	-0.04	3.2	2.3	1059	2950

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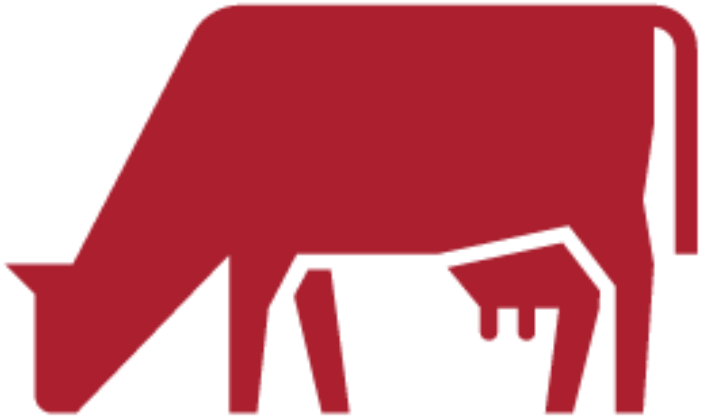
Don’t forget the female

- The female contribution to genetic improvement should not be forgotten.
- Not just ET/IVF but which females will carry replacements vs terminal crosses



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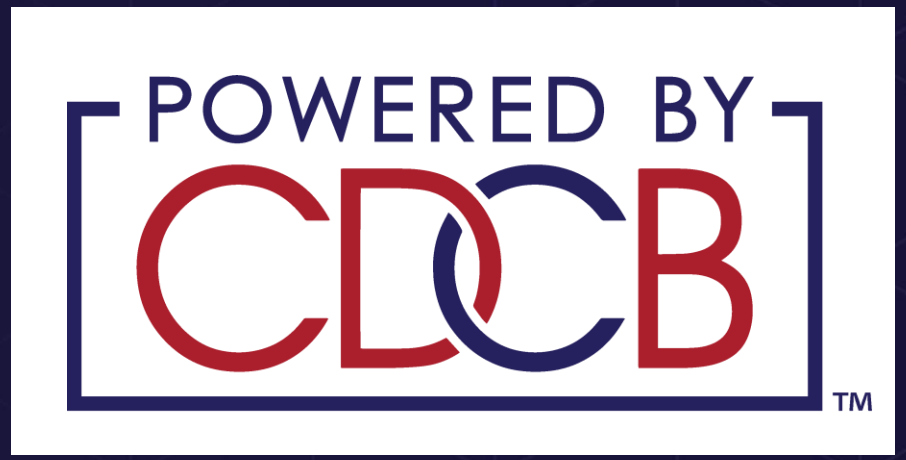
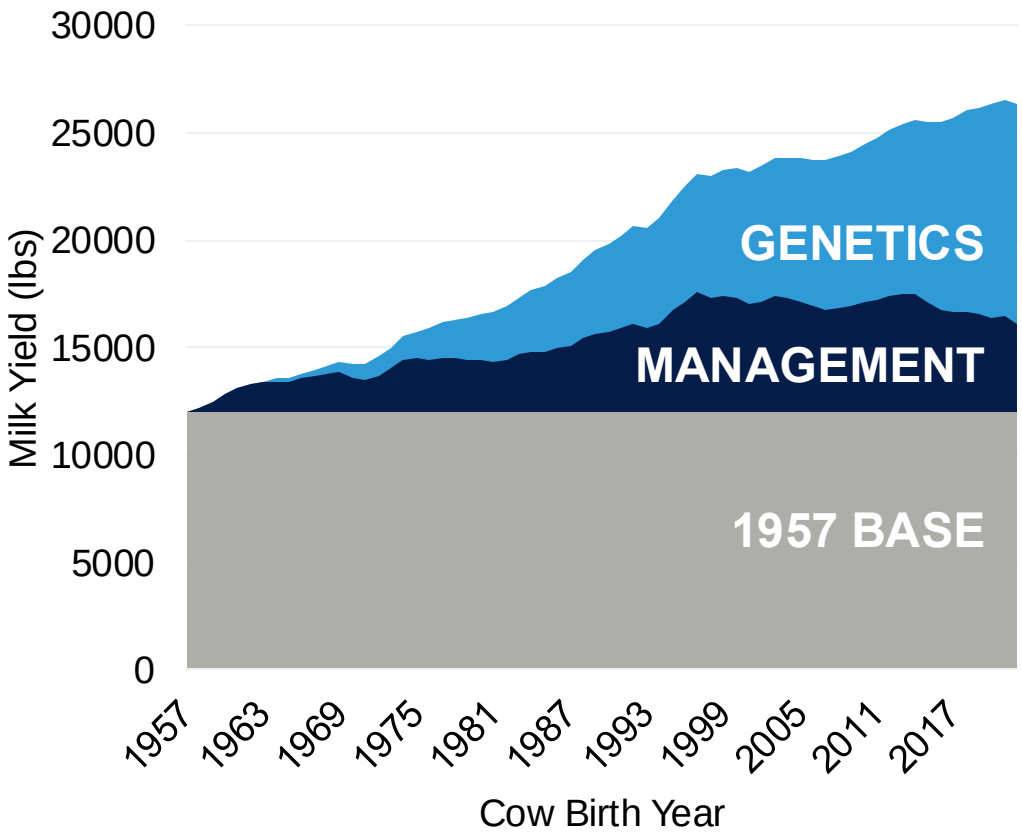
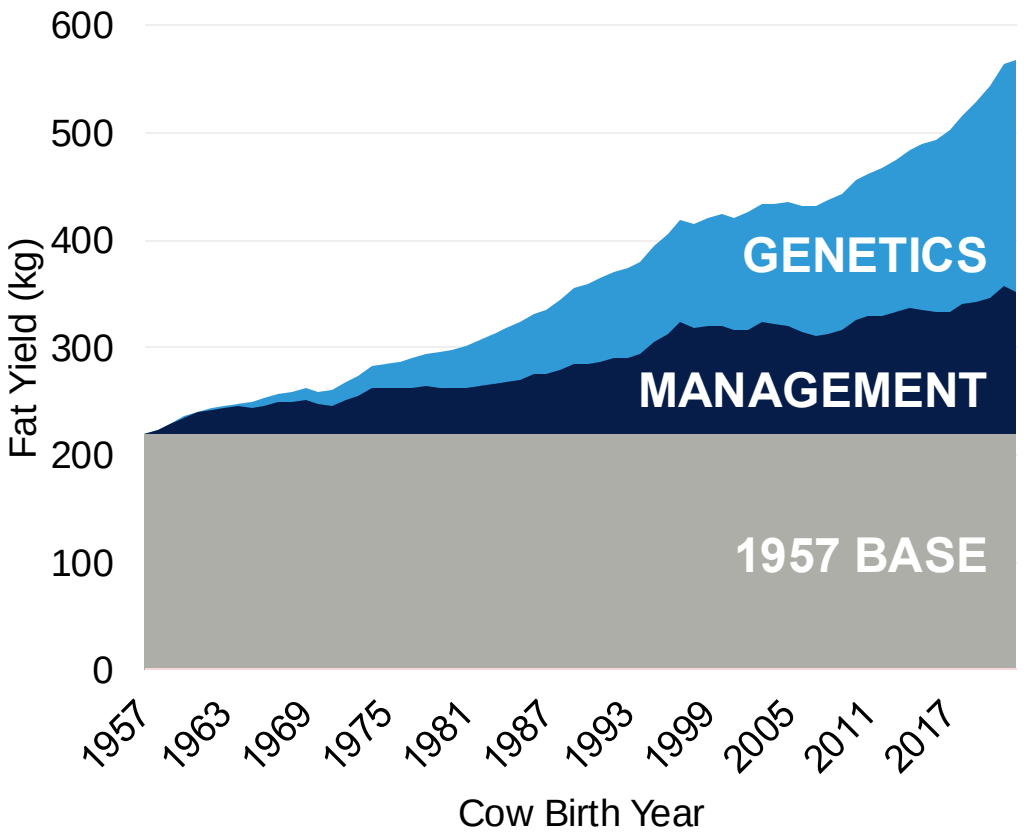


Whether you use young genomic sires or proven sires, the Predicated Transmitting Ability (PTAs) for those individuals are Powered by CDCB.

The dataset that makes it possible comes from production records, health and fertility events, and type evaluations collected on dairies throughout the country.

National Change in Holstein Yield





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Genetic-Powered Improvements

Andersen Dairy's 5-year trends from bulk tank data

Year		CFP Change
2021		18 pounds
2022		25 pounds
2023		76 pounds
2024		(51) pounds
Q1 2025	vs 2023	58 pounds

Large Herd in Western United States

PTA Fat	Number	305MEF	Difference
FAT 80+	2751	1369	0
FAT 60-80	2931	1293	-76
FAT 60-	3064	1226	-143

PTA Milk	Number	305MEM	Difference
MILK 1000+	3858	30177	0
MILK 600-1000	2428	28644	-1533
MILK 600-	2460	27358	-2819

PTA Pro	Number	305MEP	Difference
PRO 50+	2301	975	0
PRO 30-50	4673	953	-22
PRO 30-	1772	901	-74

PTA DPR	Number	Days Open	Difference
DPR 0+	1860	94	0
DPR -1.5-0	3950	124	30
DPR -1.5-	2936	120	26

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Do Genomics Help Genetic Progress?

Substantial increase in rate of genetic process since application of genomics in dairy breeding in 2009

93% of genotypes in the National Cooperator Database are female (~8 million, May 2024)

Management, nutrition, veterinary care, as well as cow genetics, have all changed in the last 15 years

USDA Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE

The Question:

How well are genomic predictions working?

The Team:

Sajjad Toghiani
Paul VanRaden
Dan Null
Asha Miles
Curt Van Tassell

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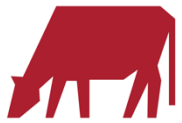
“Audit” / Validation Design

STUDY COHORT



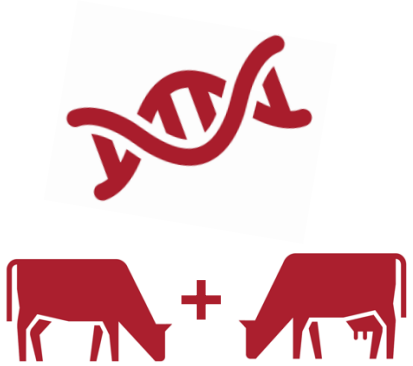
Genotyped Heifers
(born 2019-2021)

RECORDS USED

AY (N = 219)
BS (N = 2,715)
GU (N = 1,055)
HO (N = 949,904)
JE (N = 125,275)

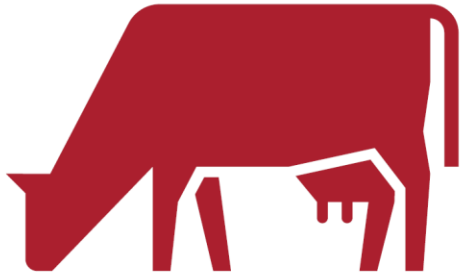
**unbalanced numbers across traits*

GPTA & PA



Extracted August 2021
(predictions calculated
@ birth)

PHENOTYPES



Extracted August 2023
(eventual yield
deviations for same
cohort of heifers)

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Holstein Results

$$\text{Predictive Ability} = \frac{\text{REL}}{h^2}$$

Bottom Line

- Genomics confers significant advantage in predicting future cow performance
- Predictions for smaller purebred populations (AY, BS, GU) will improve as more data are available
- Potentially underestimated h^2 suggests cows may outperform their own predictions

Trait	H^2	GPTA	PA
Milk	0.20	124.9	72.4
Fat	0.20	103.4	73.0
Protein	0.20	91.4	58.5
PL	0.08	14.2	8.2
SCS	0.12	55.5	32.3
DPR	0.04	61.3	32.7
HCR	0.01	114.9	67.1
CCR	0.016	120.7	61.2
LIV	0.04	9.2	4.8
MFV	0.006	0.7	1.0
DAB	0.011	94.2	79.8
KET	0.012	37.5	26.2
MAS	0.031	34.1	14.0
MET	0.014	42.8	23.6
RPL	0.01	34.8	14.6
EFC	0.027	27.4	17.9
HLV	0.007	26.2	32.3

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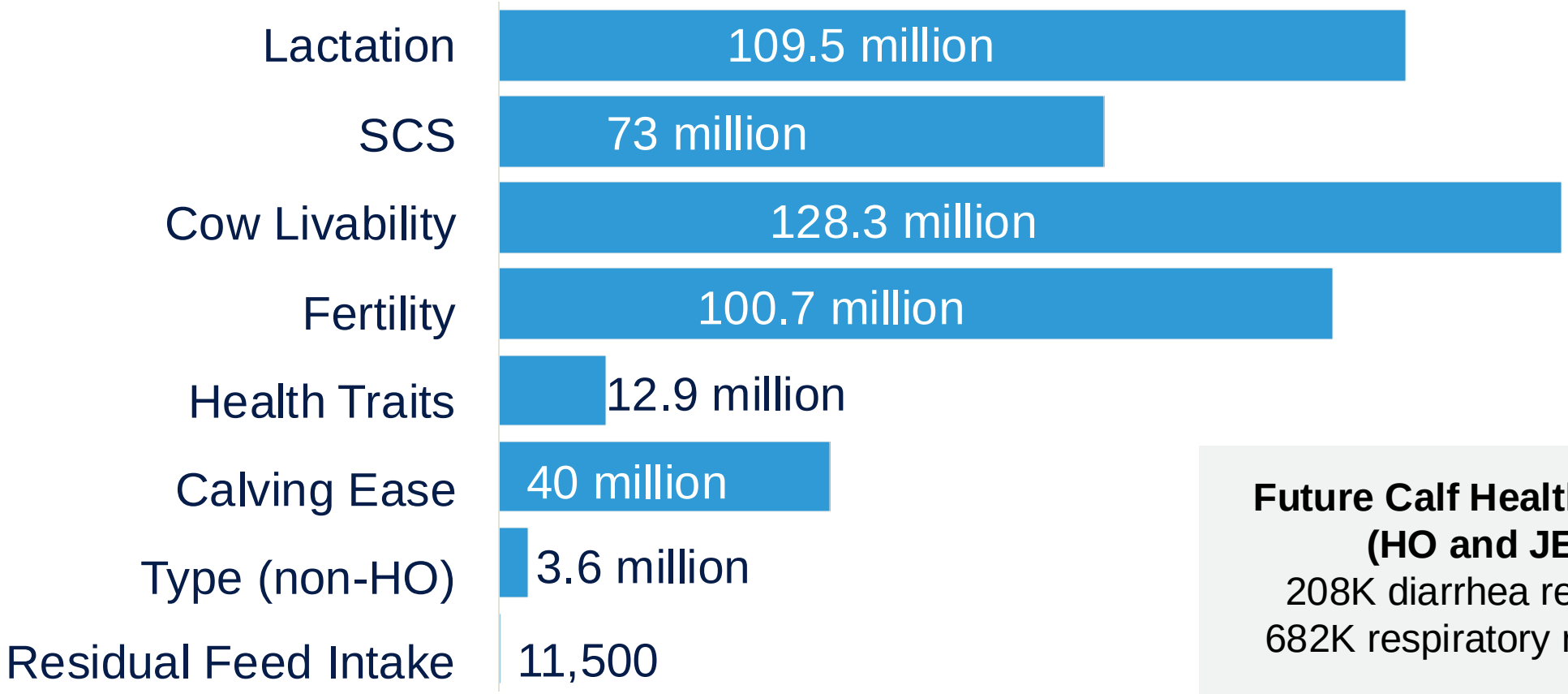
The published paper is available here: https://shorturl.at/0rkeK

National Cooperator Database



Future Calf Health Traits (HO and JE)
208K diarrhea records
682K respiratory records

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Counts from April 2025 evaluations

More Data → Higher Reliability

		Milk Fever		Displaced Abomasum		Ketosis		Mastitis		Metritis		Retained Placenta	
2018	# Records (HO)	1.2 M		1.9 M		1.4 M		2.4 M		2.0 M		2.2 M	
2018	Average Reliability (young bulls | proven bulls)	40%	44%	42%	47%	41%	46%	49%	56%	42%	48%	42%	47%
2023	# Records (HO, JE, BS)	5.8 M		5.8 M		4.3 M		7.7 M		6.3 M		7.6 M	
2023	Average Reliability (young bulls | proven bulls)	60%	64%	72%	78%	68%	73%	73%	81%	69%	74%	69%	75%
	Change in Records	**4.6 M**		**3.9 M**		**2.9 M**		**3.3 M**		**4.3 M**		**5.4 M**	
	Change in Reliability	**20%**	**20%**	**30%**	**31%**	**27%**	**27%**	**24%**	**25%**	**27%**	**26%**	**27%**	**28%**

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Invitation to fellow producers

- To those contributing – Thank you!
  - Continue to identify each animal with birthdate, sire and dam
    - » Many records are unusable due to insufficient ID information
  - Enter health events for cows and calves
  - Enter events using names that are easily recognized by the system
    - » i.e MAST, METRITIS, RESPIRATORY, etc.
  - Ensure that you check the boxes required at DHIA/DRPC so that your data goes to CDCB

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Invitation to fellow producers

- If you are not contributing, you are benefiting from a system you are not invested in.
- Consider:
  - Management benefits you'll gain from having regular component and SCC results
  - Improved reliabilities gained from increasing the number of records in the database
  - Installing ICAR approved meters with sample ports for milk sampling when investing in parlor upgrades
  - Testing in one parlor to see the benefits before starting up other sites

Female Nomination Fee Credits	
Female Basic Nomination Fee	$8
Cooperator Credits	
Female born in a US herd?	$4
Milk yield data provider?	$2
Conformation data provider?	$1
Health data provider?	$1
Female born in a Canadian herd?	$2

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Our farm finds great value in improved herd efficiencies gained by using genetic evaluations to select for higher yields, better fitness and improved utility.

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