

Of Carrots and Sticks: A Behavioral Approach to Motivation



**Merrilyn Akpapuna and
Douglas A. Johnson**



What is

Motivation

?

Intrinsic
motivation is
determined by our
ignorance



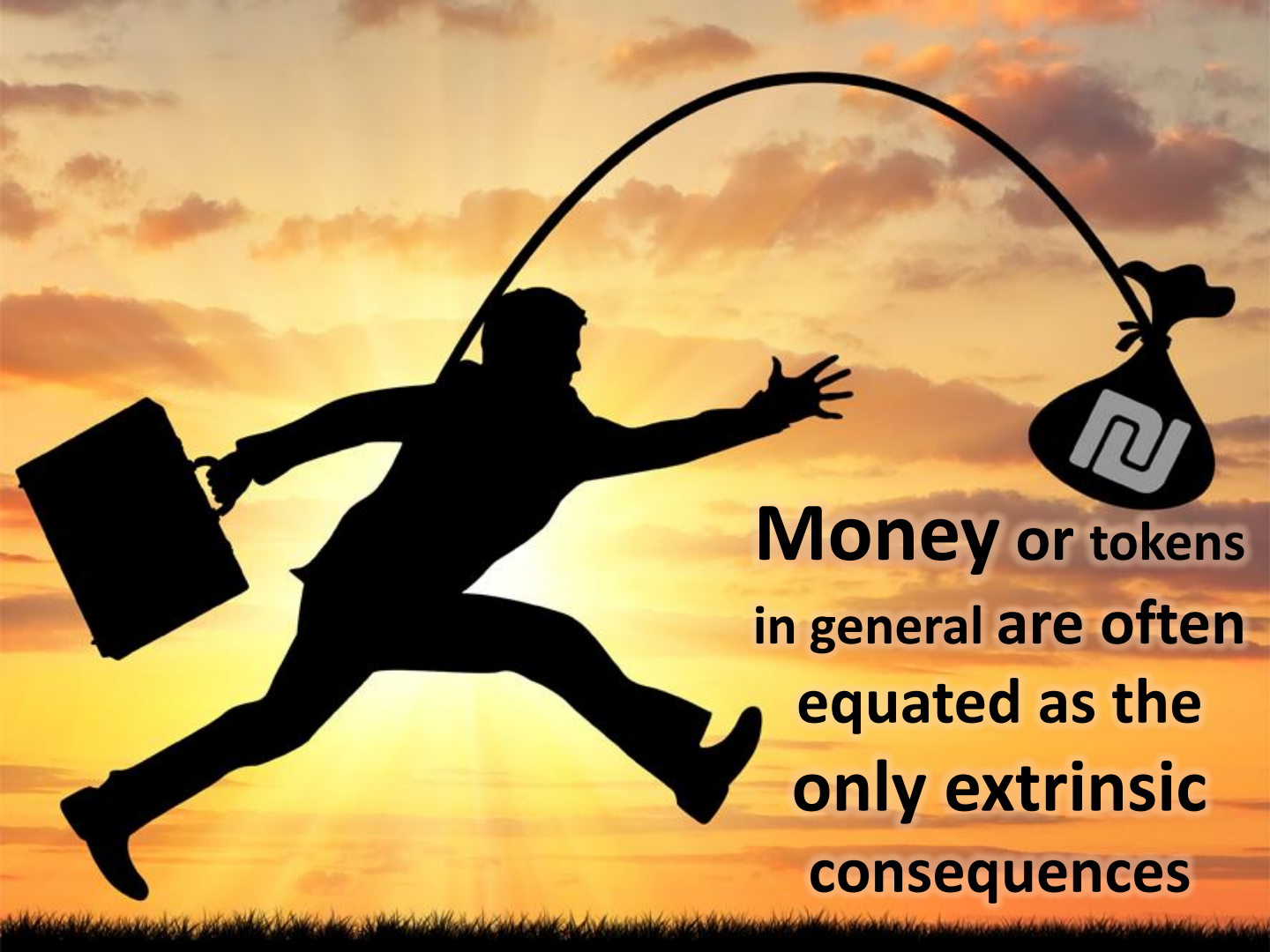
The hunt for the
intrinsically
motivated





Problems
with this
confusion





Money or tokens
in general are often
equated as the
only extrinsic
consequences

Motivation is broader
than consequence
manipulations





Motivating Operations

Conditioned Motivating Operations (CMOs)



**Reinforcement
without
other people**

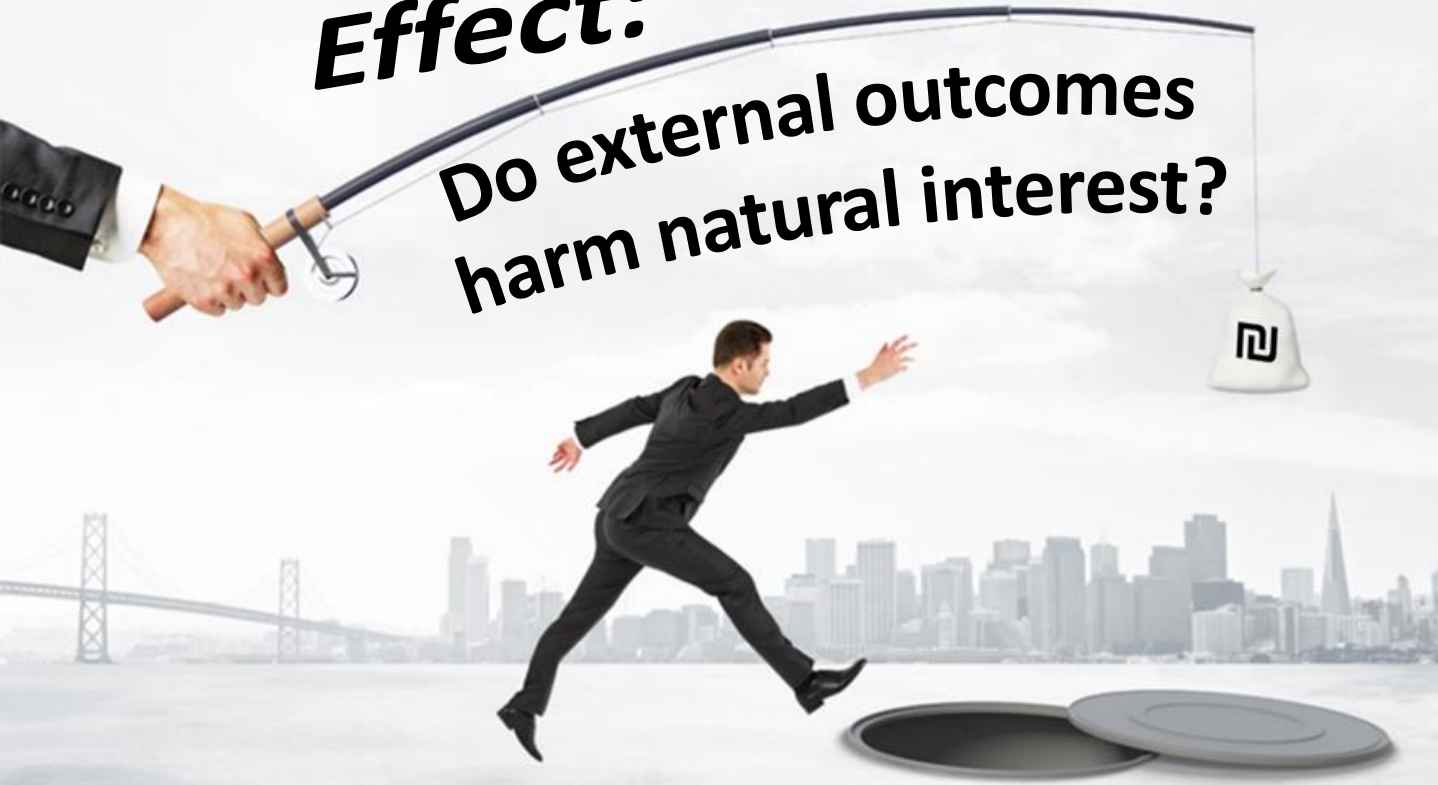




**Why internal
motivation is often
argued to be superior**

Overjustification Effect:

**Do external outcomes
harm natural interest?**





Questionable research tactics

- **Pre- or posttest design**
- **Self report**
- **Observation period**
- **Number of sessions (data points)**
- **Averaging data**

Why these methods matter:

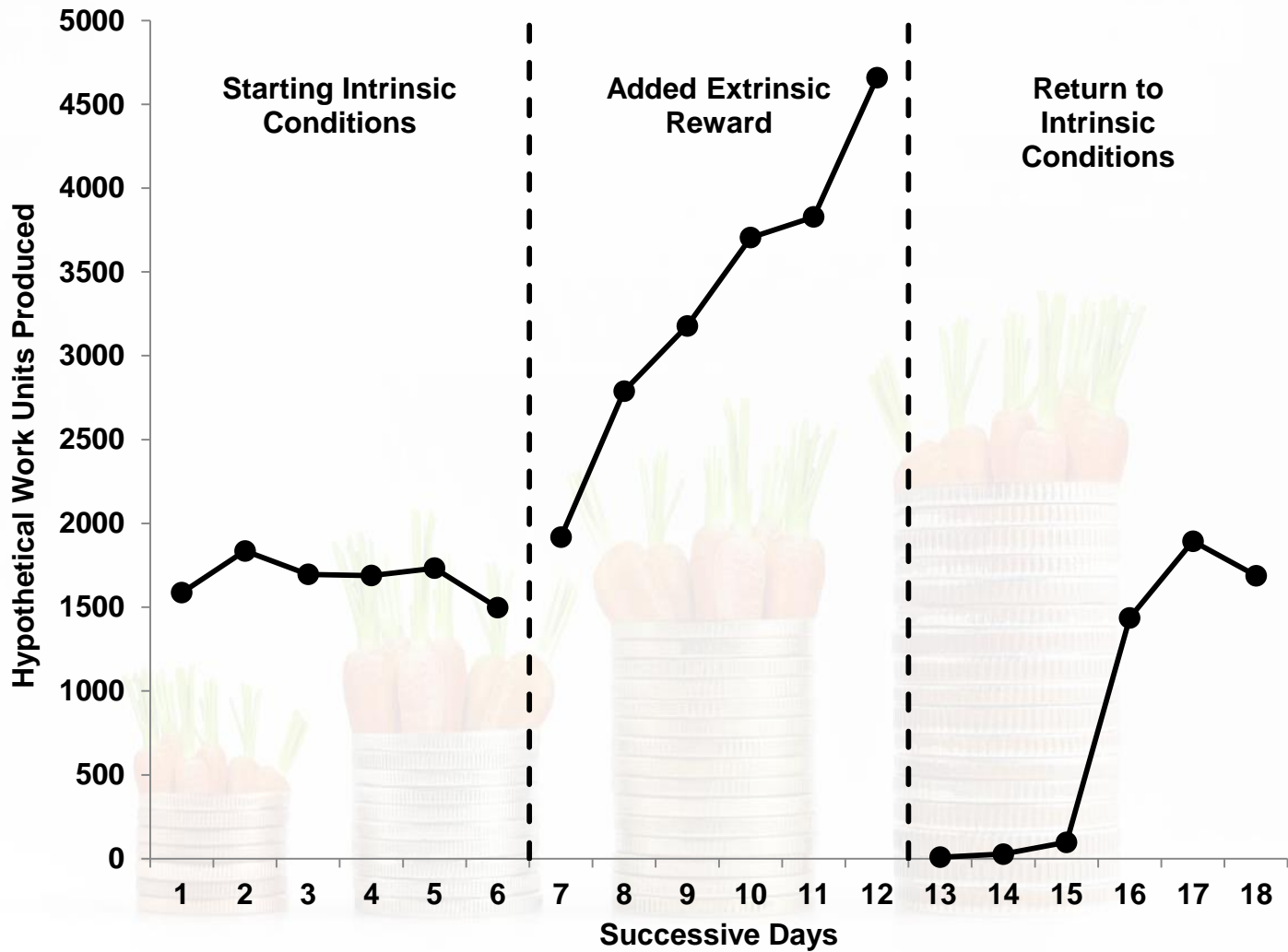
Some hypothetical data of two groups under different conditions

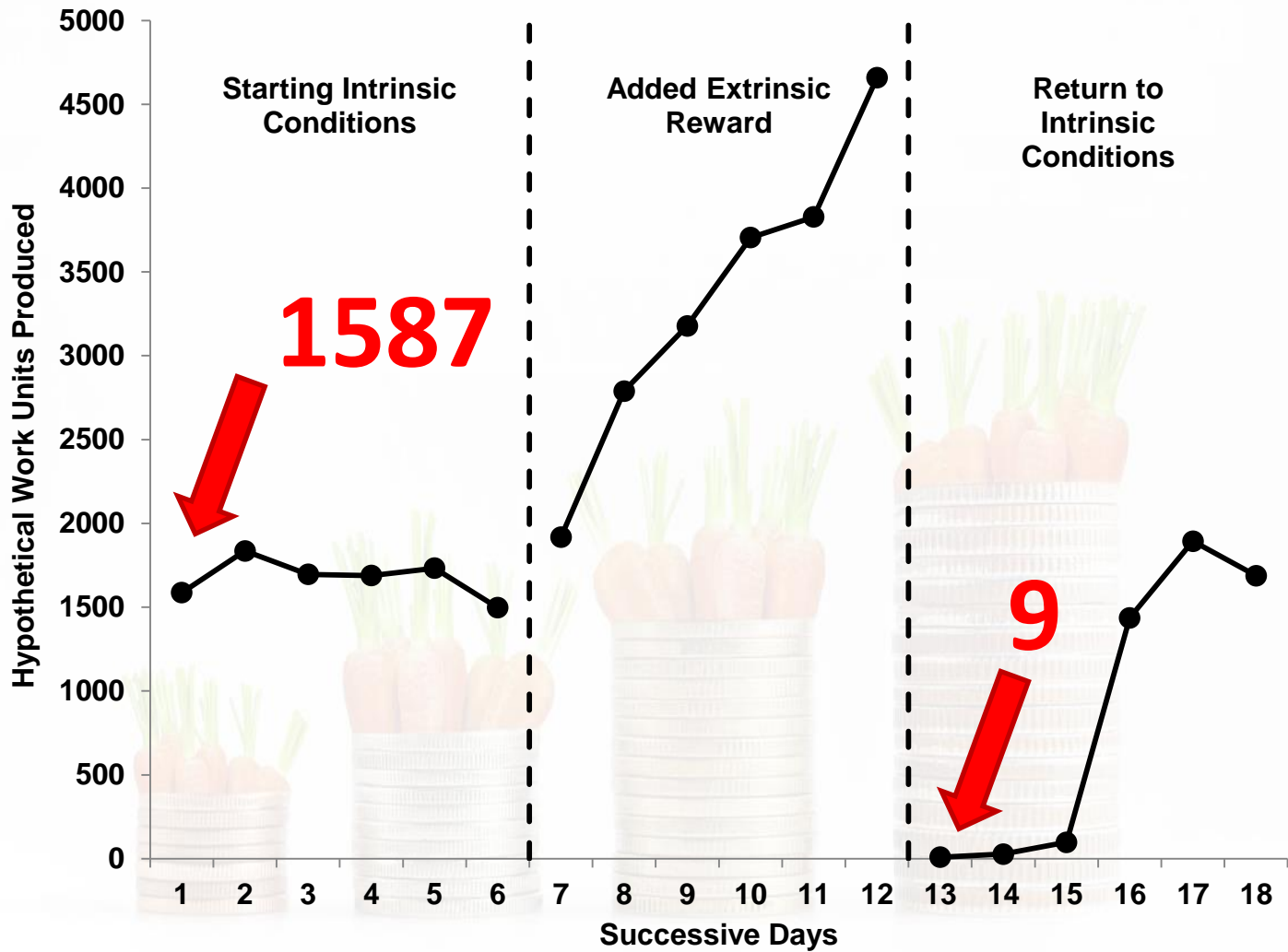
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Group 1	1587	1836	1696	1689	1733	1497	1918	2789	3178	3705	3828	4658	9	28	98	1437	1894	1688
Group 2	1699	1549	1629	1554	1748	1976	1478	1784	1633	1687	1773	1566	1908	1693	1707	1495	1646	1589

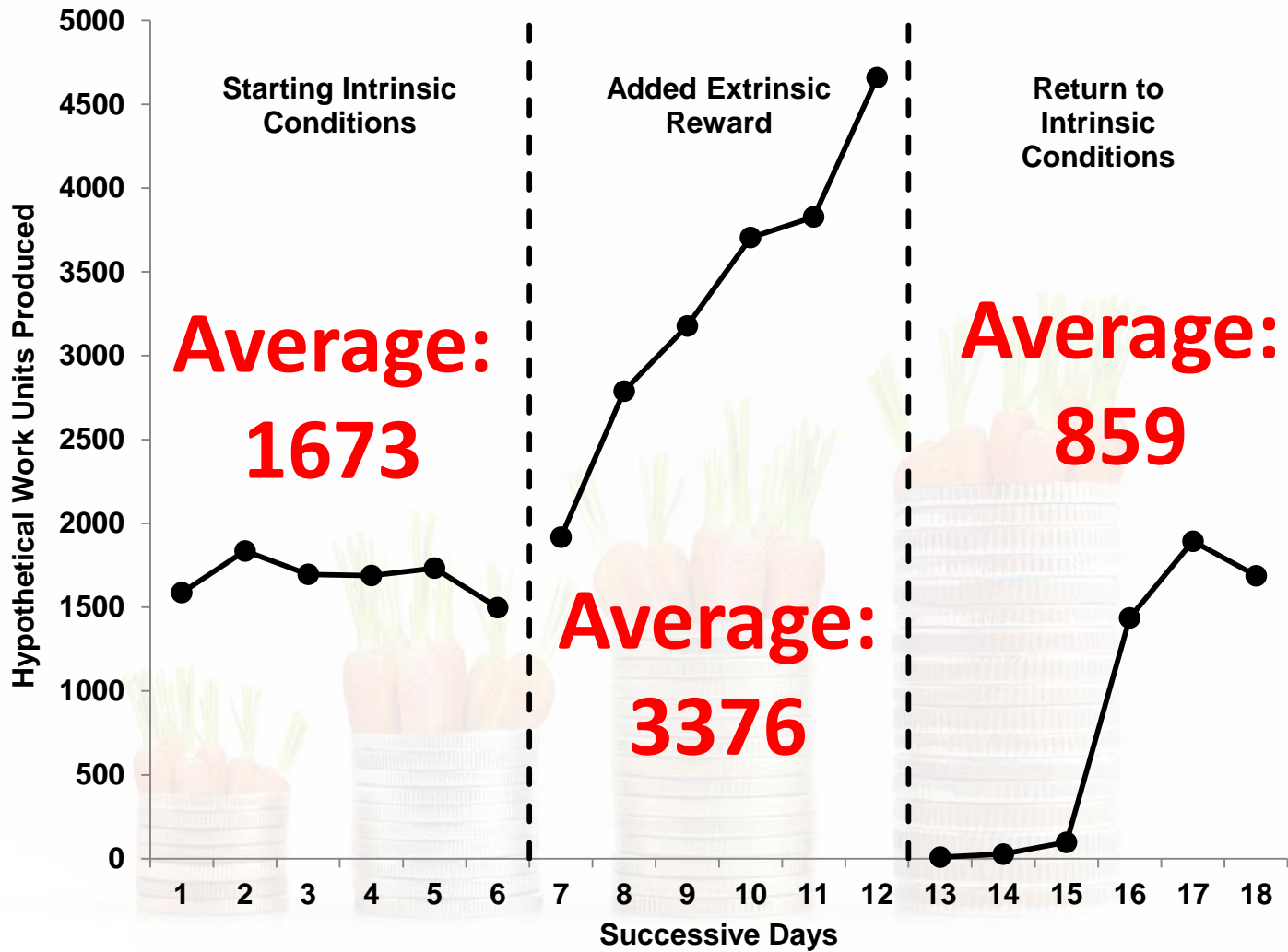
Group 1: Intrinsic/Extrinsic/Intrinsic

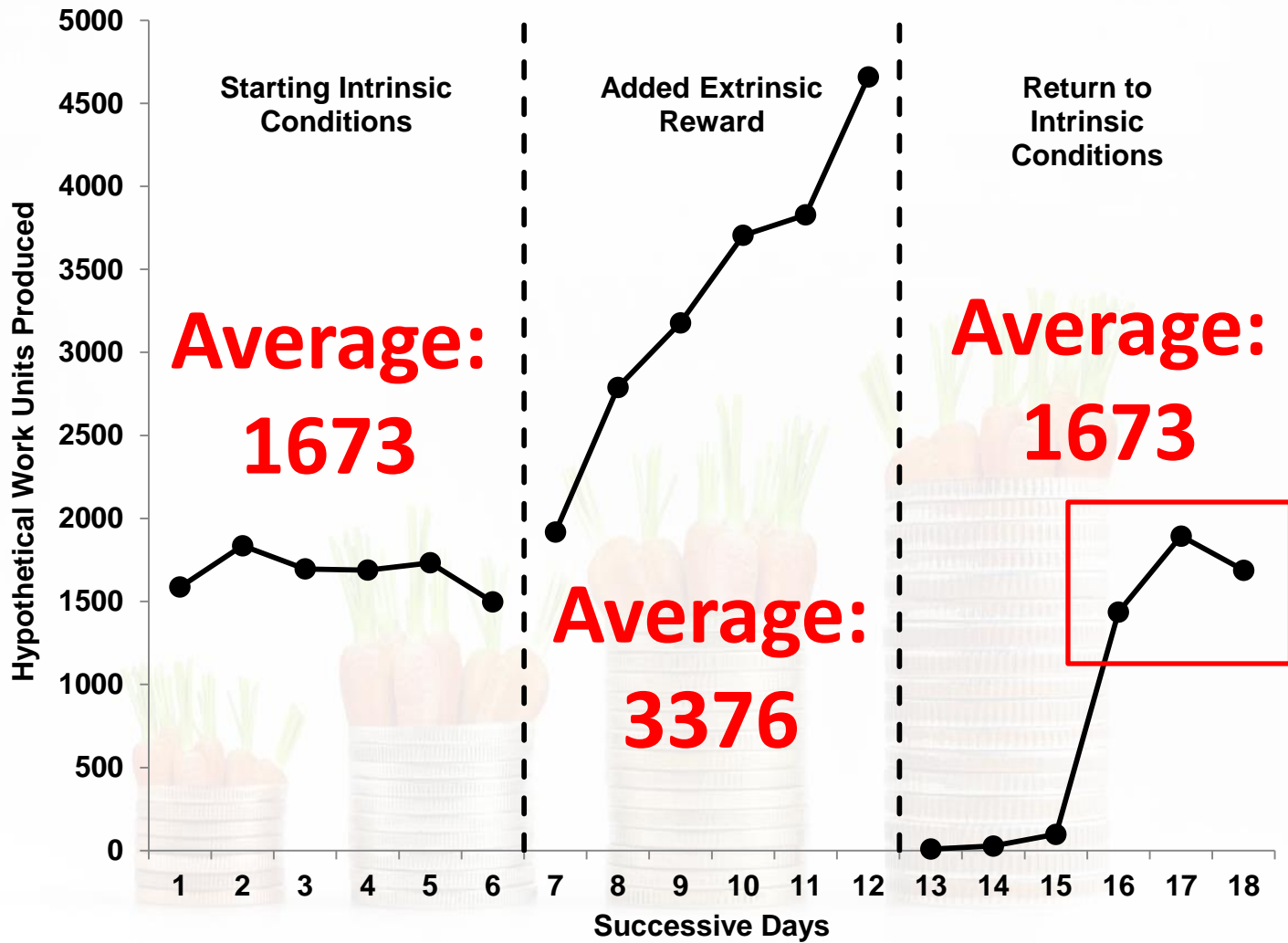
Group 2: Control group; average performance of 1673

Example data and graph from:
McGee & Johnson, 2015









You get what you pay for

- Task-contingent rewards
- Performance-contingent rewards



**What might be
leading to the
overjustification
effect?**



Implications for motivation



- More research
- Environment manipulations
 - Consequences
 - Antecedents



Implications for motivation

- **Conditioned Motivating Operations**
- **Performance contingent rewards**
- **Variety of tasks**



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THANK YOU

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INSTRUCTIONAL DESIGN
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