

ERRATA TO “GAMES AND GENERAL DISTRIBUTIVE LAWS
IN BOOLEAN ALGEBRAS”

NATASHA DOBRINEN

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We are grateful to B. Balcar for pointing out the following error in [1]: In Example 2 (and hence Example 1), if $\eta > \omega$, then η regular and \diamond_{η^+} do not suffice to construct an η^+ -Suslin algebra. The original construction breaks down at the point where we “choose” the appropriate branches B_t , since \diamond_{η^+} is not strong enough to guarantee their existence. Balcar suggested the following modified construction, assuming $\eta^{<\eta} = \eta$ and $\diamond_{\eta^+}(E(\eta))$.

Replacement for Example 2. *If $\eta^{<\eta} = \eta$, $\lambda \leq \min(\kappa, \eta)$, and $\diamond_{\eta^+}(E(\eta))$, then there is an η^+ -Suslin algebra in which $\mathcal{G}_{<\lambda}^\eta(\kappa)$ is undetermined.*

Recall that $E(\eta)$ denotes $\{\alpha < \eta^+ : \text{cf}(\alpha) = \eta\}$. Fix a $\diamond_{\eta^+}(E(\eta))$ -sequence; i.e. a sequence $\langle A_\alpha : \alpha \in E(\eta) \rangle$ such that $\forall \alpha \in E(\eta)$, $A_\alpha \subseteq \alpha$ and $\forall A \subseteq \eta^+$, $\{\alpha \in E(\eta) : A \cap \alpha = A_\alpha\}$ is stationary. Let (d) be the statement: “ $\forall \beta < \alpha$, if $\text{cf}(\beta) < \eta$, then all β -branches of T_β extend to $\text{Lev}(\beta)$; if $\text{cf}(\beta) = \eta$, then for each $t \in T_\beta$ there is a $(\beta + 1)$ -branch in $T_{\beta+1}$ containing t .” We construct T so that (d) holds for each $\alpha < \eta^+$.

Suppose T_α has been constructed and (d) holds for α . If α is not a limit ordinal, proceed as before. If $\omega \leq \text{cf}(\alpha) < \eta$, then there are at most η -many α -branches through T_α , since $\eta^{<\eta} = \eta$. Extend each of them to $\text{Lev}(\alpha)$. If $\text{cf}(\alpha) = \eta$, consider statements (a)-(c) in the combinations as before. Since (d) holds for α , the appropriate α -branches B_t now exist in T_α . Extend the branches B_t to $\text{Lev}(\alpha)$.

In the argument that $\mathcal{G}_{<\lambda}^\eta(\kappa)$ is undetermined in r.o. (T^*) we should have bijected α with η so that P1 will play the partitions \mathcal{P}_β ($\beta < \alpha$) in a game of length η . The proofs that T is an η^+ -Suslin tree and $\mathcal{G}_{<\lambda}^\eta(\kappa)$ is undetermined in r.o. (T^*) proceed as before, using $\langle A_\alpha : \alpha \in E(\eta) \rangle$ in place of the former \diamond_{η^+} -sequence.

The “ η ” in the first sentence of the paragraph on the construction of $\text{Lev}(\alpha + 1)$ should be an “ η^+ ”, so that it reads “Let $\alpha < \eta^+$ and suppose $\text{Lev}(\alpha)$ and \mathcal{P}_α have been constructed.”

In the first paragraph of the Introduction in [1], a result of Foreman was not stated in its full strength. Foreman showed that (in our notation) for each cardinal η (not just successor cardinals), the (η, ∞) -d.l. is equivalent to P1 not having a winning strategy in the game played like $G(\mathbf{P}, \eta)$ except that P2 chooses first at limit ordinals [2].

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REFERENCES

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DEPARTMENT OF MATHEMATICS, THE PENNSYLVANIA STATE UNIVERSITY, 218 McALLISTER
BUILDING, UNIVERSITY PARK, PENNSYLVANIA 16802

E-mail address: `dobrinen@math.psu.edu`