Erratum: Composite operator and condensate in the $SU(N)$ Yang-Mills theory with $U(N-1)$ stability group [Phys. Rev. D 97, 034029 (2018)]

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I. CORRECTIONS

In the discussion of the one-loop renormalization of our theory in Sec. II B in the original paper, we missed contributions to the correction of the $X^a \omega^b \bar{C}^j$ vertex, i.e., with the external $SU(N-1)$ antighost leg. In particular, our Eq. (2.70) is incomplete and lacks the two diagrams shown in Fig. 1. Their divergent parts are given by

$$\text{Diagram (a)} = ig[f^{ebn} f^{knj} f^{aek}] \frac{\lambda + 3(\xi + 1)}{4} \frac{g^2 \mu^{-2\epsilon}}{(4\pi)^2 \epsilon} p_\mu, \tag{1}$$

$$\text{Diagram (b)} = ig[f^{ekb} f^{klj} f^{ael}] \frac{\lambda}{4} \frac{g^2 \mu^{-2\epsilon}}{(4\pi)^2 \epsilon} p_\mu, \tag{2}$$

which leads to a modification of the renormalization factors Z_C and $Z_{\bar{C}}$ of the $SU(N-1)$ ghost and antighost, respectively. Thus, Eqs. (2.73)–(2.75) must be adjusted accordingly, yielding the following corrected result for the anomalous dimensions in Eq. (2.81):

$$\gamma_C = \frac{g^2}{(4\pi)^2} \left[\frac{N}{2} (3 + \xi) - \lambda (N - 1) \right], \tag{3}$$

$$\gamma_{\bar{C}} = -\frac{g^2}{(4\pi)^2} \frac{1}{2} [N\xi + 3 - \lambda (N - 1)]. \tag{4}$$

The correction of these anomalous dimensions does not affect the main results of the paper, namely the multiplicative renormalizability of the composite operator and the existence of its condensate through the LCO formalism. They are merely a side result and not further used throughout the original paper.

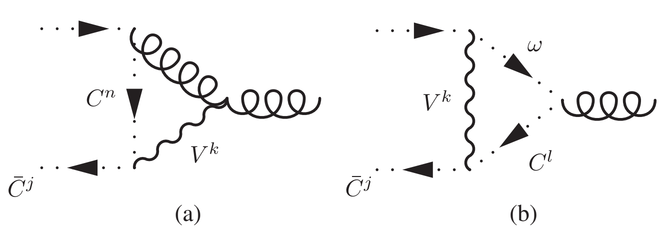

FIG. 1. Previously missing contributions to the renormalization of the $X^a \omega^b \bar{C}^j$ vertex.

II. MISPRINTS

We would like to mention a misprint in the Feynman rules of Sec. II A. The left-hand side of Eq. (2.31) should read $i\langle V^J_\rho(r) V^K_\sigma(s) \omega^b(q) \bar{\omega}^a(p)\rangle$ rather than $i\langle V^j_\rho(r) V^k_\sigma(s) \omega^b(q) \bar{\omega}^a(p)\rangle$.

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